

ENB Comments Received (6)

Comment for: (Activity) NEWS Renewal and Amendment (User) Pamela Christie Binzen - cbinzen@yahoo.com

I am writing in opposition to the ANR/DEC proposed permit to increase the amount of leachate sent by Casella Waste Systems to Montpelier from 24,000 gallons per day to 60,000 gallons per day-- more than doubling the amount. As a resident of Montpelier, I am deeply concerned about water and air quality-- all of which is threatened by this increase in leachate and the toxic chemicals it contains, which include PFAS-- the "forever chemical". I recently lived in Wilmington North Carolina, where PFAS dumped into the Cape Fear River by chemical plants have seriously damaged the health of the watershed and are causing serious health issues for residents of that region.

I specifically would like to see the amount of leachate shipped to Montpelier to remain at no more than the current 24,000 gallon per day. I would like assurance of increased monitoring to ensure that limit is met. I would like more robust and effective monitoring of PFAS content in the leachate and a clear plan for the steps that will be taken if the amount exceed the limits set. I also like to see the proposed permit revised into two separate permits: one which deals directly with leachate disposal in Montpelier and one that deals directly with creating a means to pre-treat leachate so as to eliminate PSAS.

Further, I would like to see ANR take a stronger role in educating Vermonters about PFAS: the current problem, the source of the problem, and possible solutions. I attended both the Montpelier City Council meeting on October 27, 2021 and the ANR public comment hearing on October 28. A common theme was how little people knew about the situation and this proposed permit. I ask that ANR take responsibility for managing Vermont's solid waste, creating a statewide means to deal with this issue. Montpelier should not be alone in receiving all the PFAS-contaminated leachate for the state of Vermont.

Comment for: (Activity) NEWS Renewal and Amendment (User) Abby Colihan - abbycolihan@gmail.com

I am concerned about the safety of our river. Many species of animals and birds and people need clean rivers. Rivers in Vermont have long been abused. Montpelier, the capital city cannot be forever harmed by this.

PFA's are toxic forever chemicals that should never be in our river. A decision to allow this will be regretted in the decades to come. Casella cannot be given permission to do this project until safety measures can be implemented that do not cause irreparable harm to our environment.

Comment for: (Activity) NEWS Renewal and Amendment (User) Ben Gabos - bgabos@gmail.com

The only reason Montpelier continues to accept Casella's leachate is money.

From The times Argus article:

"The city currently receives a deep discount for its sludge disposal at the Casella-owned landfill in Coventry. Last year, that saved the city roughly \$165,000. Meanwhile, the city generated more than \$417,000 in leachate-related revenue, potentially pushing the combined effect of canceling the arrangement with Casella to more than \$582,000 — money the city invests in projects that have environmental benefits.

City Manager Bill Fraser noted that "financial cushion," while acknowledging the public health and safety concerns raised by residents.

The problem, Fraser said, is that when it comes to PFAS there isn't a better solution than the one now being used.

"It (PFAS) is in the leachate, it's being produced, and it's got to go somewhere," he said. "If it's not here, then where?"

THIS IS NOT MONTPELIER'S PROBLEM! This is Casella's problem. It's a red herring to say we need to continue to accept it because no one else will.

Most importantly, continuing to accept the leachate takes pressure of DEC and Casella to find a real pretreatment solution that removes all of the PFAS from the their leachate prior to dumping it off at Montpelier's wastewater treatment facility. In the meantime they can invest in the infrastructure to store it!

Comment for: (Activity) NEWS Renewal and Amendment (User) Sheryl Rapée-Adams and Christopher E. Adams - sheryl@rapee-adams.com

This is the first we've learned that the Montpelier water treatment center handles leachate. As there is no known way to eliminate the forever chemical PFAS, it is unconscionable that Montpelier would accept and process this garbage juice, leaving our community, all those downstream, and Lake Champlain (and the earth) a more degraded, more dangerous place that our children and grandchildren will have to inhabit. Montpelier must not accept increased quantities of this substance. Please ensure that the companies producing it stop producing and externalizing the costs of pernicious waste. Taking responsibility starts with Vermonters and the decision makers with the power to do the right thing.

Sheryl Rapée-Adams and Christopher E. Adams
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Comment for: (Activity) NEWS Renewal and Amendment (User) Laura Ziegler
- zieweed@gmail.com

Re: PN21.0028229

I'm writing to add my voice to those of others more conversant, to urge that ANR specify the source and volume of the leachate to be managed under the pilot project, that any permitting of the pilot project must include strict guidelines for Casella's management of residual waste, and that ANR reopen the permit after the it finalizes the PFAS surface water standards.

I've lived in Vermont since the early 90s but grew up in NY, in the town of Farmingdale on Long Island. In my thirties, when my mother was terminally ill with a rare and ultimately inoperable cancer, I learned my family's house was 3500 from one of the worst toxic dumps in the state — a site that wasn't even fenced in. When my brother was in his 40s and diagnosed with three kinds of cancer, I requested EPA documents under FOIA. I will never forget the image in those documents of the plume heading toward the elementary school.

So it was no surprise that a cursory internet search would show me Farmingdale listed among the communities with drinking water contaminated by PFAs. Toxics are an ongoing feature of Nassau County's landscape — in no small part because of the failure or complicity of regulatory and oversight bodies and politicians to hold polluters accountable (<https://projects.newsday.com/long-island/plume-grumman-navy/>). It's how contaminants from Grumman became a plume over 4 miles long and two miles wide.

An ounce of prevention is worth a pound of cure. From a 2019 letter from Long Island Congress members to the EPA Administrator:

<https://farmingdale-observer.com/2019/06/21/letter-water-contamination-on-long-island/>

“We write you today to ask that you expeditiously provide Long Island with greater assistance and resources to protect residents from harmful contaminants and pollutants found in our drinking water. The quality of water being supplied to Long Island homes has been seriously compromised by a unique combination of contaminants and pollutants, necessitating immediate intervention from the Environmental Protection Agency (EPA). According to a May 2019 study by the New York Public Interest Research Group (NYPIRG), Long Island has the most contaminated drinking water in New York State, and Nassau County has the highest number of water systems with detected emerging contaminants among New York's counties. Several contaminants, such as 1,4 dioxane and per- and polyfluoroalkyl substances, also known as PFAS, were detected above the EPA's reference concentrations, which are based on health assessments. This is concerning given the EPA's slow response to set a nationwide safe drinking water standard, which may take several years. PFAS has been widely detected in Long Island water supplies and exposure to PFAS has been linked to testicular and kidney cancers, liver damage, and developmental effects in fetuses and breast-fed infants. Many wells across Long Island have been impacted by PFAS contamination and require the installation of expensive treatment systems to address this contaminant. Typically, a carbon filtration treatment system will cost approximately \$1 million per impacted well. The New York State Department of Health

estimates that statewide, 645 public water facilities will require treatment at a cost of over \$850 million with an annual operating cost of \$45 million.”

I believe Vermont is less corrupt and more environmentally conscious than where I grew up. I hope it will take more responsibility to protect the public from toxics. How much responsibility remains an open question, but I urge that prevention, oversight and transparency be prioritized over accommodation of industry.

Thank you for considering my concerns.

Laura Ziegler

POB 164

Plainfield VT 05667

Comment for: (Activity) NEWS Renewal and Amendment (User) Peter Blair - pblair@clf.org

SEE Separate PSF document “Comments (CLF, CAW, NCRC, VPIRG)



November 24, 2021

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, David Building
Montpelier, VT 05620-3522

Submitted Electronically

**RE: Draft Pretreatment Discharge Permit for New England Waste Services, Inc.
Permit No. 3-1406.**

Conservation Law Foundation, Community Action Works, Vermont Natural Resources Council, and Vermont Public Interest Research Group (collectively “Environmental Organizations” or “we”) appreciate the opportunity to submit comments on the Draft Pretreatment Discharge Permit (“draft permit”) for New England Waste Services of Vermont, Inc. (“Casella”).

The Environmental Organizations recognize the steps the Agency of Natural Resources (“ANR” or “Agency”) is taking to address per- and polyfluoroalkyl substances (“PFAS”) in landfill leachate. This permit represents an important first step in developing a comprehensive statewide system for the management of leachate. However, as currently drafted the permit does not contain sufficient detail and safeguards to ensure leachate will be managed in a manner that is most protective of the environment and public health.

A more detailed description of our comments follows, but in sum, we urge ANR to take the following actions to strengthen the draft permit:

- I. Require more monitoring at the Montpelier WWTP to better understand the impact of the landfill leachate on the Winooski River and resident fish populations;
- II. Take a more active role in developing the leachate pretreatment Pilot Project. Specifically, we recommend ANR:
 1. Set clear standards and conditions for how it will measure the success of the proposed Pilot Project;
 2. Define the scope of the Pilot Project in terms of the quantity and source of the leachate managed;
 3. Develop clear criteria controlling the management of residual waste generated from the selected pretreatment technology or technologies;
 4. Ensure that the selected pretreatment technology or technologies do not preclude the integration of new and emerging pretreatment and/or treatment technology; and

5. Commit to reopening the permit once the Agency or the Environmental Protection Agency promulgates and adopts a surface water quality standard for any PFAS compound.

We acknowledge that pre-treatment alone will not solve the problem of contaminants of emerging concern polluting our water. The pretreatment strategies contemplated by this draft permit are needed in addition to upstream solutions, where harmful contaminants, such as PFAS, are banned from being used in popular consumer products that eventually are thrown away into landfills.

Background: WWTPs Are Not Equipped to Remove Contaminants Like PFAS.

The current system of managing landfill leachate is inadequate to protect public health and the environment. Currently, Vermont manages all leachate through WWTPs. These facilities are not equipped to remove the diverse and complex range of contaminants in leachate prior to discharge into surface waters. Instead, this treatment is primarily focused on reducing wastewater discharges of so-called conventional pollutants: oil, grease, organics like nitrogen and phosphorous, total suspended solids, and settleable matter. These facilities do not treat for the long list of contaminants in leachate – PFAS, Polybrominated diphenyl ethers (“PBDEs”), and other chemicals of concern – that have been found to be highly toxic to humans and other species, and persistent in the environment. According to a USGS study, many leachate contaminants are present after leachate is processed by a municipal wastewater treatment plant.¹

The result of this ineffective management is that PFAS-contaminated wastewater is currently being discharged from WWTPs into our surface waters. These PFAS then bioaccumulate and threaten the environment and public health. A growing body of science has found that there are adverse health impacts associated with PFAS exposure, including liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, hormone suppression, and cancer.² PFAS exposure related to contaminated surface waters can occur through multiple pathways, including ingestion, inhalation, and direct surface contact.³

I. ANR should revise the draft permit to include more robust monitoring provisions.

The draft permit should be revised to incorporate more stringent monitoring provisions to better understand the impact of leachate management on the Winooski River, fish populations,

¹ J.R. Masoner, D. W. Kolpin, E. T. Furlong, I. M. Cozzarelli, I.M., & J. L. Gray, J.L., *Landfill leachate as a mirror of today's disposable society: Pharmaceuticals and other contaminants of emerging concern in final leachate from landfills in the conterminous United States*, 35 Environmental Toxicology and Chemistry 906-918 (2015).

² See, e.g., NTP (National Toxicology Program). 2016. Monograph on Immunotoxicity Associated with Exposure to Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Research Triangle Park, NC: National Toxicology Program, available at: https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf [pdf icon](#); Venkatesan, Arjun K., National inventory of perfluoroalkyl substances in archived U.S. biosolids from the 2001 EPA National Sewage Sludge Survey.

³National Health and Medical Research Council, *Guidance on Per and Polyfluoroalkyl (PFAS) in Recreational Water, Canberra*, p. 4 (2019) Available at <https://www.nhmrc.gov.au/sites/default/files/documents/attachments/guidance-on-PFAS-in-recreational-water.pdf>

and surrounding environment. Specifically, ANR should incorporate the following additional monitoring requirements:

1. ANR should require testing of the influent, effluent, and solids at the Montpelier WWTP prior to the increase to the maximum daily discharge limit.

The draft permit seeks to increase the maximum amount of leachate the Montpelier WWTP may accept from 23,000 gallons per day to 60,000 gallons per day.⁴ To better understand the impact of increasing the leachate maximum cap, ANR should require testing of the influent, effluent, and solids at the Montpelier WWTP *prior to the increase*. This testing should be identical to the testing required by the draft permit.⁵ This data will provide a baseline of the current conditions at the WWTP and can be used to evaluate any impacts associated with the increase in the volume of leachate processed at the facility during the duration of the permit. At minimum, ANR should conduct two samples identical to those required by the draft permit prior to the increase in volume.

2. ANR should require Casella to perform monitoring for PFAS in fish tissue above and below Outfall S/N 001.

Currently, the draft permit does not require Casella to perform any monitoring for PFAS in fish tissue. The draft permit does indicate that ANR may reopen and amend the permit to include fish tissue monitoring.⁶ ANR should require this monitoring at the outset of the permit to establish baseline conditions. This monitoring should occur throughout the duration of the permit to better understand the impact the increased volume of leachate processed at the Montpelier WWTP has on fish populations in the Winooski River. This monitoring will also help the Agency understand the base levels of PFAS in fish tissue and identify whether the increase in the volume of leachate processed at the Montpelier WWTP causes any correlated increase of PFAS found in fish tissue samples. This testing should be done above and below outfall S/N 001 located at the Montpelier WWTP.

II. ANR must revise the permit to have more control over the development and implementation of the pretreatment Pilot Project.

Currently, the permit would have Casella – not ANR – “identify specific operations, performance, economic, water quality, residuals and air quality parameters that will be analyzed through the pilot project.”⁷ While there is a need to be flexible at the outset of this long and groundbreaking process, this language gives the permittee near exclusive control in developing the Pilot Project. Instead, ANR should identify these parameters and require the permittee to select a technology that will meet them. Setting these parameters now is critical so that the public and the permittee understand how the Agency will evaluate the proposed Pilot Project and how it

⁴ *Draft Permit Factsheet*, at 2.

⁵ Agency of Natural Resources, Draft Pretreatment Discharge Permit for New England Waste Services, Inc., p. 9-10. Permit No. 3-140. (Sept. 30, 2021) [Hereinafter “Draft Permit.”]

⁶ *Draft Permit*, at. 7.

⁷ *Id.* at 8.

will determine if the project is successful. Specifically, we recommend ANR make the following changes to the draft permit related to the Pilot Project development and implementation:

1. Revise the draft permit to clearly define the scope of the Pilot Project.

The draft permit does not sufficiently describe the scope of the Pilot Project. As currently drafted, the permit contains scant detail related to the scope and boundaries of the project. Given that the Agency expects to utilize the data from the Pilot Project to both establish a Technology Based Effluent Limit and treatment standard for PFAS, as well as the design conditions of a full-scale leachate pretreatment system,⁸ additional clarity surrounding the scope of the project is necessary. We urge ANR to revise the draft permit to clearly articulate the following:

- i. The quantity of leachate Casella must manage under the Pilot Project;
- ii. The quantity of leachate generated in Vermont that will *not* be pretreated to remove PFAS as part of the Pilot Project. Given that leachate generation is dependent on precipitation, this should be reflected in a range from lowest to highest expected levels based on the previous five years of leachate generation; and
- iii. Whether the leachate pretreated though the Pilot Project will require additional treatment. If additional treatment is required, ANR must specify whether that treatment will occur at the Montpelier WWTP.

Additionally, the draft permit indicates that the Pilot Project should remove PFAS from leachate generated at the Coventry Landfill, NCES Landfill, and Central Vermont Landfill.⁹ We urge ANR to revise this language to limit the source of the leachate pretreated for PFAS removal to the leachate generated *from the Coventry Landfill only*. This requirement will ensure that the monitoring of influent, effluent, and solids is consistent in terms of inputs throughout the duration of the permit. It will also ensure that Casella cannot mix leachate from multiple sources to dilute the concentration of contaminants, thereby undermining the monitoring protocol. Furthermore, this restriction will also provide a better understanding of the concentration of PFAS in the leachate of Vermont's only active landfill. While the closed Central Vermont landfill does still produce some leachate, it is significantly less volume than the leachate produced at the Coventry Landfill. Having the Pilot Project exclusively focus on treating leachate from the Coventry Landfill will help the Agency as it reviews the progress reports and final report to determine whether the treatment technology can and should be scaled up to full implementation.

2. Revise the draft permit to set clear standards for how Casella will manage residual waste.

The draft permit limits the selection of the treatment or pretreatment technology to those identified in or that provide equivalent treatment to the technologies evaluated in the Conceptual Leachate Treatment Scoping Study performed by Brown and Caldwell in October of 2019 ("Scoping Study").¹⁰ All of the technologies evaluated in the Scoping Study, as well as all

⁸ Draft Permit, at 7.

⁹ *Id.* at 8.

¹⁰ Draft Permit, at 8.

commercially available technologies that provide equivalent treatment, isolate, but do not destroy PFAS. Instead, these technologies either concentrate or capture PFAS compounds into a liquid concentrate, solid residual, or spent media form. Each of these forms of residual waste are highly concentrated with PFAS and require additional management for final disposal. The management of this residual waste is a significant part of any pretreatment technology and must be evaluated carefully in terms of the potential environmental and public health risks.

The draft permit does not contain any detail regarding how this residual waste will be managed. ANR should revise the draft permit to set clear standards that address how Casella will test and manage this residual waste stream. We specifically recommend that ANR revise the draft permit to make the following three changes:

- i. Prohibit the burning (incineration, gasification, pyrolysis, etc.) of residual waste generated from pretreatment.

Managing the residual waste through incineration, gasification, or some other high heat technology involves the substantial risk of simply transferring PFAS from waste material into the air before eventually returning it to surface water and soil. Extremely high temperatures for an extended period of time are needed to destroy PFAS – in theory, 1,000 to 1,300 degrees Celsius or higher.¹¹ However, even that may not be adequate. In some studies which claimed to eliminate Perfluorooctane sulfonic acid (“PFOS”) through thermal destruction, residual PFOS were observed in the ash produced from the combustion process.¹² This ash will then require further management.

Incomplete destruction because of inadequate temperatures or insufficient residence times can also create various short-chain perfluoroalkyl acids (“PFAAs”).¹³ Short-chain PFAAs require higher temperatures to achieve thermal destruction than long-chain PFAAs, so their formation as by-products during thermal treatment of long-chain PFAAs can further complicate the objective of achieving complete destruction during incineration.¹⁴ Moreover, there is no sound method for measuring PFAS in emissions from air stacks. The Environmental Protection Agency (“EPA”) has acknowledged that there are no accepted or validated sources and air methods for measuring PFAS, and the EPA’s research into “analytical methods to detect, identify, and quantify PFAS in emissions and ambient air” is ongoing.¹⁵ Therefore, any claims

¹¹ U.S. EPA, Per- and Polyfluoroalkyl Substances (PFAS): Incineration to Manage PFAS Waste Streams, Technical Brief at 1 (February 2020), available at: https://www.epa.gov/sites/production/files/2019-09/documents/technical_brief_pfas_incineration_ioaa_approved_final_july_2019.pdf; *see also* Horst, J., et al., Understanding and Managing the Potential By-Products of PFAS Destruction, 40 Groundwater Monitoring & Remediations, 7, 20-21 (2020). doi: 10.1111/gwmr.12372 (noting that temperatures up to 900 degrees Celsius (1,652 degrees Fahrenheit) are likely insufficient to destroy PFAS in water).

¹² *Id.*

¹³ Watanabe, N., M. Takata, S. Takemine, and K. Yamamoto. 2018. Thermal mineralization behavior of PFOA, PFHxA, and PFOS during reactivation of granular activated carbon (GAC) in nitrogen atmosphere. Environmental Science and Pollution Research International 25, no. 8: 7200–7205.

¹⁴ *Id.*

¹⁵ U.S. EPA Office of Research & Development, Session 5: Source Emissions Measurement Methods and Modeling Air Emissions, Transport and Deposition, PFAS Science Webinars for Region 1 and New England States & Tribes, at 1-2 (September 23, 2020), available at: https://www.epa.gov/sites/production/files/2020-10/documents/r1-pfas_webinar_day_2_session_5_phelps-murphy_final.pdf

about the effectiveness of PFAS destruction through incineration and gasification are unverifiable.

Given the uncertainty over the effectiveness of thermal destruction of PFAS and the risk that it creates in transferring PFAS from waste material into the air, ANR should expressly prohibit the thermal destruction of all forms of residual waste from the pretreatment process. The prohibition must also apply to residual waste exported outside of Vermont. Incinerating this residual waste elsewhere creates significant environmental justice concerns. Waste incinerators are predominantly located in low-income and communities of color. According to the Global Alliance for Incinerator Alternatives, 79 percent of municipal solid waste incinerators are located in environmental justice communities.¹⁶ Allowing for this residual waste stream to be hauled out-of-state for burning will unjustly pass off Vermont's contaminated waste to other communities.

ii. Require Testing of All Residual Waste Generated from Pretreatment.

To better understand the nature of the residual waste, ANR should revise the draft permit to set clear testing requirements to evaluate PFAS in the residual waste. Testing should be done for all PFAS compounds specified in Attachment A of the draft permit. Additionally, this testing is necessary to understand whether the residual waste stream rises to the level of hazardous waste as defined by Vermont's Hazardous Waste Management Regulations. Vermont law classifies liquid wastes containing perfluorooctanoic acid ("PFOA") or PFOS in concentrations equal to or greater than 20 parts per trillion (ppt) as hazardous.¹⁷ This 20 ppt standard applies to the sum of both PFOA and PFOS.¹⁸ Should the testing indicate that the waste rises to the level of hazardous, the pretreatment facility should be classified as a generator of hazardous waste and the disposal of the waste should conform to federal and state regulations.

iii. Develop a Plan for the Management of Residual Waste.

Management of residual waste will depend on the pretreatment technology or technologies selected. However, in all cases, significant care must be taken to prevent reintroduction of PFAS into the environment. ANR should thoroughly study the different management methods to determine the best demonstrated available technology for sequestration or destruction of PFAS containing residual waste. This study should be completed by the Agency prior to the completion of the Pilot Project. This will ensure the Agency's findings can be used when evaluating whether to expand the scope of the pilot project. At a minimum, the study should evaluate:

- All existing commercially available disposal and destruction options;
- Emerging disposal and destruction options;

¹⁶ Celine Yang, *Addressing the Environmental Justice implications of Waste*, Environmental and Energy Study Institute, (May 14, 2021). Available at: <https://www.eesi.org/articles/view/qa-addressing-the-environmental-justice-implications-of-waste>

¹⁷ VT. Code R § 16-3-202:7-211. (2016).

¹⁸ *Id.*

- The effectiveness of fly ash, lime, cement kiln dust, and Portland cement as solidification agents; and
- The use of non-porous geotubes or supersack to sequester and separate the residual waste from other waste and precipitation prior to placement in a landfill.

A draft of the study should be made publicly available for comment prior to the release of a final report.

3. Revise the draft permit to ensure the Pilot Project is designed to integrate newly available and emerging PFAS treatment technologies.

the Environmental Organizations support the decision to limit the scope of the technology eligible for selection in the Pilot Project to either those presented in the Scoping Study or to those that provide equivalent treatment.¹⁹ However, we urge ANR to continuously revisit the availability of new and emerging technology that can remove, sequester, or destroy PFAS. PFAS treatment technologies are continuing to emerge, and certain technologies can be used sequentially in a “treatment chain” to better manage landfill leachate. As part of its evaluation of the selected pretreatment technology, ANR should consider whether the selected technology or technologies can incorporate new and emerging treatment options. Furthermore, ANR should require Casella to reevaluate treatment technologies periodically and present this evaluation to the Agency.

4. ANR should commit to reopening the permit following the adoption any state or federal surface water quality standard for any PFAS compound.

ANR is required by statute to develop and adopt a surface water quality standard for PFAS by January 1, 2024.²⁰ This surface water quality standard will therefore be issued before the five-year term for this permit is complete (triggering the need for Casella to reapply).²¹ Accordingly, we urge ANR to include a reopener provision in the final permit that would be triggered once a surface water quality standard is adopted for any individual PFAS compound of class of compounds. Reopening the permit will give ANR the opportunity to evaluate the pretreatment processes against the new standard and make any corrections necessary to ensure the effluent meets the new standard. Moreover, it will significantly change the monitoring and compliance requirements for the Montpelier WWTP. Therefore, the standard will change the regulatory framework under which the permit was issued, and the Agency should revisit the permit to ensure it is compliant with the new regulations.

III. Conclusion

The publication of the draft permit shows a clear intention by ANR to make Vermont a national leader in leachate management. The current system of running leachate through WWTPs is outdated and ineffective to address PFAS. The pilot project can help create a system

¹⁹ *Draft Permit*, at 8.

²⁰ Vt. Stat. Ann. tit. 10, ch.56

²¹ *Draft Permit*, at. 13. The draft permit indicates that the permit expires on March 31, 2016. If Casella wishes to continue to discharge leachate after the expiration of the permit, it must reapply at least 180 days before the permit expires.

that is more effective at addressing these toxic forever chemicals and other chemicals of concern. However, ANR should make the above permit revisions to better protect public health and the environment.

Thank you for the opportunity to submit comments on this draft permit. We look forward to continuing to engage on this important issue.

Respectfully Submitted,

Peter W. Blair Jr
Peter Blair, Esq.
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Conservation Law Foundation

Hayley Jones
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October 11, 2021

Agency of Natural Resources
Dept. of Environmental Conservation
Watershed Management Division
1 National Life Drive - Davis 3
Montpelier, VT 05620-3522

RE: Permit No. 3-1406 / PIN: WY06-0020
Applicant: New England Waste Services, Inc.
Receiving WWTF: City of Montpelier Wastewater Treatment Facility

Dear Members of the Board:--

We are submitting our comments and concerns with regard to the above-captioned permit. We are the property owners and residents of 50 Junction Road, Berlin, Vt., which is within the immediate vicinity of the Montpelier Wastewater Treatment Facility, and as such we have been notified of the pending permit and request for amendment.

As a brief history of our qualification as a concerned party, we have owned and occupied as our primary residence the homeplace at 50 Junction Road in excess of 44 years. The WWTF was here when we purchased our home in 1977 in a much smaller configuration. Over the decades there were times when issues arose but generally problems were dealt with quickly by plant staff. We are currently the only residents in the immediate area of the plant and we are adjacent to properties owned by Donald Pierce (Middlesex Electric & Lloyd Home Services) and Capitol Steel & Supply Co, Inc. In discussion with our business neighbors we find that we are all similarly affected.

The main concerns we have with the existing permit and with any requested amendment have to do with the proposed and anticipated increase of discharge of leachate by the applicant to the Montpelier Wastewater Facility (WWTF) and the capability of the WWTF to process this discharge safely and environmentally responsibly.

We have noted over the past year that the increased number of tankers discharging to the WWTF have created an immense increase in the off-gassing odors from the plant -- to the point where our immediate vicinity has been untenable on many days and nights. Throughout summer months when windows or fans should be utilized, we were unable to circulate outside air to our home without inundating our environment with the acrid and sickening smell of sewage and effluent. Our business neighbors have expressed to us their same aggravations with this situation. Throughout July, August and September of this year we had very few days that the permeating odors did not make it severely unpleasant to be outside in our yard and forced us to keep doors and windows shut, even on hot days. We could not ask friends

or visitors to our home because of the offensive odors they would encounter. Even pedestrians using the recreation path and roadway stopped and asked how we could live with the odors.

We have noticed a definite correlation between the increase in off-gassing odors with the increase of tankers bringing leachate to the WWTF. This makes us question the ability of the WWTF to contain this off-gassing issue with their existing equipment, or perhaps their lack of utilization of the equipment that is in place. There should be some form of containment for capturing the off-gassing from these tankers and septic haulers at the point where they discharge to the plant. This issue, while not strictly a "water quality" concern, still needs to be addressed for the health of those living and working in this immediate vicinity.

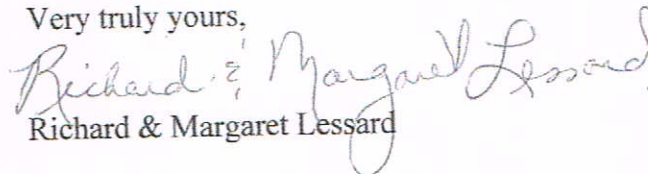
Secondly, and probably more pertinent to the Watershed Management Division is the subject of the many pollutants that are discharged from the WWTF into the Winooski River. While the Fact Sheet discusses the monitoring procedures for BODs, CODs, Nitrogen, Phosphorus, Chloride, pollutant metals such as Aluminum, Iron and Molybdenum and Arsenic as they affect the water quality of the Winooski River, there is no discussion as to what potential harm these pollutants and poisons may be occurring to the ground water table from which our property, and our neighbor's, draw our drinking water. Have tests and/or studies been made to determine which of these compounds settles out or leaches from the river water and seeps into the ground water table?

The Fact Sheet speaks extensively about PFAS being at higher concentrations in WWTFs that accept leachate. Testing for these substances is directed at the concentrations found in fish dwelling in the Winooski River -- again, it does not discuss penetration to ground water tables.

While we realize that the existing permit is in place and in all likelihood is going to be renewed and perhaps even amended to allow increased discharge by the applicant, we feel that these issues that we have raised should be seriously addressed and protocols for off-gassing abatement and for monitoring of ground water tables should be included in any ongoing permit.


Thank you for your review and consideration of these comments. We will plan to personally appear at the October 28th public hearing.

Very truly yours,


Richard & Margaret Lessard

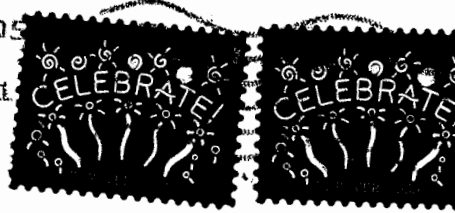
/mpl

cc: Donald Pierce (Middlesex Electric);
Lloyd Home Service;
Rob Carr, Capitol Steel & Supply;
Vince Conti, Berlin Town Admn.;
John Wakefield, Air Quality Division.

 Mr Edward Stanak
58 Pleasant St
Barre, VT 05641-3429

BURLINGTON VT 05

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Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive - Davis }
Montpelier Vermont

05620-3522

Ed Stanak
58 Pleasant Street
Barre City VT
05641

802-479-1931

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MEMORANDUM

TO: Amy Polaczyk, Wastewater Program Manager
Department of Environmental Conservation
FROM: Ed Stanak
DATE: November 4, 2021
RE: Application 3-1406 New England Waste Services, Inc.
Draft Pretreatment Discharge Permit
Public Comments

This memorandum provides comments on the content of the draft pretreatment discharge permit issued by the Department on September 20, 2021. The permit proposes to authorize New England Waste Services of Vermont (NEWSVT) to dispose of a maximum of 60,000 gallons per day "max day" of leachate from the landfill situated in Coventry, Vermont, and from two other landfills, into the City of Montpelier Wastewater Treatment Facility (WWTF) for subsequent discharge into the Winooski River.

I am a resident of Barre City. I was employed by the State of Vermont for a number of years as an Act 250 district coordinator. I make use of the Winooski River watershed and Lake Champlain. I have reviewed the draft NEWSVT pretreatment permit and the related fact sheet. The following comments are provided for the consideration of the Department of Environmental Conservation and supplement the comments I provided orally at the October 28th public meeting in Montpelier.

Jurisdiction

1-Neither the fact sheet nor the draft permit state a jurisdictional basis for the issuance of the pretreatment permit to NEWSVT rather than the City of Montpelier as operator of the WWTF. By comparison, all land use permits issued under the provisions of 10 VSA Chapter 151 state the pertinent jurisdictional provisions for the authorized project. I am aware of the provisions in the United States Code and the Code of Federal Regulations allowing states to delegate pretreatment obligations to a private sector generator of pollutants rather than the operator of a WWTF. However, absent a clearly stated jurisdictional foundation in the draft permit, it is unclear if the Department has proceeded under appropriate Vermont enabling legislative and regulatory authority to delegate pretreatment obligations to NEWSVT.

2-The draft permit raises an additional jurisdictional question: on what basis does the Department authorize the disposal of leachate from the Bethlehem NH landfill in the Montpelier WWTF? I am aware of the US Supreme Court's holding in Philadelphia v New Jersey 437 US 617 (1978) and its progeny. However, there was a time when the Department (Solid Waste Division) took affirmative steps to ensure that the content of wastes imported to Vermont were of a content not injurious to the public health, safety and welfare. Are there appropriate provisions in Vermont law and Department regulations to authorize the

importation of industrial pollutants from out of state?

Flows

The information on leachate flows provided in the fact sheet and the draft permit appears to be incomplete and is confusing, at least to the average person. The result is an inadequate understanding of the quantity of pollutants to be disposed by NEWSVT in the Montpelier WWTF. Here are a few examples:

- 1- The fact sheet (at pages 3 and 4) does not provide quantities of leachate flows from the CV landfill or the Bethlehem NH landfill.
- 2- While information is provided for the Coventry landfill (at page 2 of the fact sheet), it is less than clear how those calculations match up with adjudicated findings of fact by the District 7 Environmental Commission in its 7R0841-13 decision (at page 28) wherein the Commission found that an average of 9.5 million gallons of leachate results annually from Phases I-IV.
- 3- While the draft permit sets a maximum daily effluent limit of 60,000 gallons, how does that limit jibe with the third paragraph on "flow" on page 4 of the fact sheet?

No Pretreatment and Dilution Is the Solution

1-Neither the draft permit nor the expired permit contain any findings or terms identifying any actual pretreatment of the "Non-Conventional Pollutant" content of the leachate prior to disposal in the Montpelier WWTF. Thus, the Department proposes to issue a pretreatment permit that does not require any pretreatment of the leachate. It also appears that the Discharge Permit for the City of Montpelier WWTF does not identify any pretreatment capabilities in that plant. As a result, the discharge into the Winooski River and/or the sludge byproduct from the WWTF will contain residue of the "Non-Conventional Pollutants".

2-Some 40 years ago when I was a new state employee, I learned from Department staff that, in essence, "dilution is the solution". In other words, the treatment provided by a typical municipal WWTF cannot remove certain categories of pollutants. In this context, the "7Q10 instream concentration" provisions of the fact sheet (pages 7 and 9) appear to reinforce the "dilution solution" principle.

Conditions Subsequent

The draft permit is laced with "conditions subsequent" which are invalid substitutes for sufficient evidentiary proof that satisfy applicable statutory and regulatory provisions prior to the issuance of a permit. Here are three examples among others found in the draft:

1-Special condition 5 on pages 7 through 12 of the permit is the prime example of such a "condition subsequent". This condition requires the construction and operation of a "leachate treatment and/or pretreatment technology "facility, presumably at the Coventry site, by approximately December 2022. This condition is premised on standards developed by the applicant's private consultant Brown & Caldwell in its October 2019 report. The Department

has not promulgated any applicable surface water standards for PFAs and the design of such a facility. Given the nine year long pendency of the pretreatment permit application, as stated on page one of the fact sheet, the Department could and should have undertaken appropriate rulemaking during that same time period in order to promulgate PFA standards for the applicant to then implement as part of the amendment application submittal required in special condition 5. Instead of appropriate rulemaking required under the provisions of 3 VSA Chapter 25, Subchapter 3, the Department has chosen the path of an impermissible “condition subsequent”. The net result of this approach by the Department is the privatization of environmental regulation.

2- Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Iron is another “condition subsequent” because it is based on the following finding on page 7 of the fact sheet reading : “ There is currently no Montpelier WWTF effluent data for Total Iron. Therefore, to further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Iron water quality standard, the draft permit requires ...quarterly monitoring...”

3-Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Arsenic is a third “condition subsequent” because it is based on the following finding on page 8 of the fact sheet reading : “ Insufficient data was available to determine if the discharge of Total Arsenic would exceed the Consumption of Water & Organisms Human Health Water Quality Criteria. Specifically, there is currently no influent Total Arsenic data for the Montpelier WWTF. There is also no data on the removal efficiency of Total Arsenic by the Montpelier WWTF.” The fact sheet then goes on to state “ To further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Arsenic water quality standard, the draft permit requires ...quarterly monitoring...”

Lack of Threshold Facts on PFA Strength

The draft permit has numerous conditions for testing and sampling of the waste stream. However, the fact sheet has no specific information on the PFA strength of the leachate collected at each landfill for delivery to the WWTF – although vague reference is made to the January 2020 Weston & Sampson sampling results. It would seem that the fact sheet should provide such threshold facts. The District 7 Environmental Commission decision refers to available groundwater PFA sampling at Coventry.

Inadequate Definitions

- 1- Page 2 in the permit [See I(A)(1)(b)] disallows the discharge of leachate into the Montpelier WWTF during “storm events, snow melt or when a storm event is imminent”. What are the relevant definitions for each of these terms? Who makes the decision to not accept the truckload of leachate? And where will the leachate then go? Additionally, with regard to the City’s role in accepting the leachate, what are the

NEWSVT contract terms with the City of Montpelier? What is the amount of annual revenue that the city will obtain from accepting the leachate ?

- 2- The term "pretreatment technologies" is relied upon in imposing special condition 5 yet there is no definition in any Department rules or policies of what the term means or what standards will apply.

Ensure Environmental Justice

Two of the most significant sources of solid wastes to the Coventry landfill facility are Chittenden and Washington counties. One supposes that, in a cynical analysis, there is an environmentally just outcome in that the "Non-Conventional Pollutants" from those wastes will now return to the watershed shared by those counties pursuant to the discharge from the City of Montpelier WWTF following the "nonpretreatment" (my term, not the Department's) allowed by the draft pretreatment permit. The North East Kingdom and a portion of the province of Quebec have been the environmental sacrifice zone for Vermont's solid waste disposal; Chittenden and Washington counties now join as a companion sacrifice zone. The Department should take the lead in returning the focus of the General Assembly to policies adopted over 25 years ago intended to ensure not only the reduction of the waste stream but a more equitable means of disposal. The burden cannot remain solely on the people of the North East Kingdom (and Quebec) for a indefinite period of time into the future.

In closing, I want to emphasize that I am a realist – the solid waste generated by all of us must go somewhere as must the resulting leachate. But the Department's permitting processes, and its role as the representative of the executive branch before the legislative branch, over the decades have failed to pursue -if not force- a more just or equitable system for the disposal of the solid wastes and the leachate. And I want to be very clear: I do not fault the public employees of the Department of Environmental Conservation who merely do their jobs under the direction of supervisors and executive branch appointees. Thank you.

From: Trisha Needham <trishai@icloud.com>
Sent: Saturday, September 25, 2021 7:20 AM
To: ANR - WSMD Wastewater
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a dual Canadian/American citizen living in the Memphremagog watershed I strongly oppose this permit application!
Thank you,

Trisha Ingalls
Irasburg, VT
(802) 304-0096

From: madel51353@aol.com
Sent: Monday, September 27, 2021 10:03 AM
To: anr.wsmdwastewater@vermont.gov <anr.wsmdwastewater@vermont.gov>
Subject: Permit No. 3-1406 Comments

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear ANR:

As the coordinator of the Vermont PFAS/Military Poisons Coalition, I strongly object to Permit No. 3-1406. We should not be accepting leachate or garbage juice from other states. Nor should we be releasing it into ANY waterways in Vermont or anywhere. Water is life. PFAS, that pesky little forever chemical, is already everywhere and is bound to harm the health of our children and our grandchildren unless we outlaw it now. As an agency that is supposed to protect our health, our environment, and our natural resources, do the right thing. Stop supporting environmental injustices across our state and in our waterways. Casella is a business that makes loads of money off of the state. Support, planet and people and NOT PROFIT.

Sincerely,
Marguerite Adelman
Winooski, VT
VT PFAS/Military Poisons Coalition
Earth Democracy Committee of WILPF US

From: Dean Wilbur <deanowilbur@gmail.com>
Sent: Monday, October 11, 2021 8:32 AM
To: ANR - WSMD Wastewater
Subject: I oppose the permit

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Allowing waste from NH and elsewhere be dumped into Casellas landfill in Coventry.

Sincerely,
Dean Wilbur
Jay Vt.

Sent from my iPhone

From: Teresa Piette <Teresa.Piette@ncsuvt.org>
Sent: Monday, October 11, 2021 10:18 AM
To: ANR - WSMD Wastewater
Subject: NEWS-VT leachate treatment permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore:

I am a teacher at North Country Union Jr. High School in Derby, VT. Last spring, my students in the Outdoor ELA classrooms studied the case of whether or not to deem Lake Memphremagog a lake in crisis. While we agreed that we didn't yet meet the criteria of a lake in crisis, we did our own research on the lake including water samples of biological elements. Many students in the class fish the lake, and several reported catching bass and other fish with black lesions similar to those found on the brown bullhead in the South Bay region of the lake. The students concluded that the lake should be deemed "in crisis" despite the fact that property values have not been negatively impacted to date. They feel strongly that the lake needs protecting now, before it is allowed to deteriorate further and affect property values. Just recently there were several reports of toxic blue-green algae blooms in bays along the lake.

With this said, I am concerned that we are granting permission to a private entity, Casella Waste Systems, to treat more leachate from not only Vermont but other New England states, and discharge it into the lake that serves as drinking water for our neighbors to the north and a primary source of tourist dollars to this region of Vermont. Why put this responsibility in the hands of a private, for-profit entity, especially one with Casella's track record of environmental spills and improper waste management? What happens to the leachate? Will the moratorium on its discharge into Lake Memphremagog continue, or will it be superseded by this "pilot project"? And is the oversight of this project to rest solely with this for-profit company itself, or will the state do something to effectively monitor its operations? This lake is part of the fabric of the Northeast Kingdom, and we need to protect it for our future generations to enjoy.

Thank you for listening and for any answers to my questions you can provide.

Sincerely,

Teresa Piette
Literacy Interventionist
N.C. Jr. Interact Advisor
NCUJHS
teresa.piette@ncsuvt.org
802-766-2276 x5156

From: Teresa Piette <Teresa.Piette@ncsuvt.org>
Sent: Monday, October 11, 2021 10:20 AM
To: ANR - WSMD Wastewater
Subject: Re: NEWS-VT leachate treatment permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore:

I am a teacher at North Country Union Jr. High School in Derby, VT. Last spring, my students in the Outdoor ELA classrooms studied the case of whether or not to deem Lake Memphremagog a lake in crisis. While we agreed that we didn't yet meet the criteria of a lake in crisis, we did our own research on the lake including water samples of biological elements. Many students in the class fish the lake, and several reported catching bass and other fish with black lesions similar to those found on the brown bullhead in the South Bay region of the lake. The students concluded that the lake should be deemed "in crisis" despite the fact that property values have not been negatively impacted to date. They feel strongly that the lake needs protecting now, before it is allowed to deteriorate further and affect property values. Just recently there were several reports of toxic blue-green algae blooms in bays along the lake.

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Thank you for listening and for any answers to my questions you can provide.

Sincerely,

Teresa Piette
Literacy Interventionist
N.C. Jr. Interact Advisor
NCUJHS
teresa.piette@ncsuvt.org
802-766-2276 x5156

From: Teresa Piette
Sent: Monday, October 11, 2021 10:18 AM
To: anr.wsmdwastewater@vermont.gov <anr.wsmdwastewater@vermont.gov>
Subject: NEWS-VT leachate treatment permit #3-1406

Dear Secretary Moore:

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With this said, I am concerned that we are granting permission to a private entity, Casella Waste Systems, to treat more leachate from not only Vermont but other New England states, and discharge it into the lake that serves as drinking water for our neighbors to the north and a primary source of tourist dollars to this region of Vermont. Why put this responsibility in the hands of a private, for-profit entity, especially one with Casella's track record of environmental spills and improper waste management? What happens to the leachate? Will the moratorium on its discharge into Lake Memphremagog continue, or will it be superseded by this "pilot project"? And is the oversight of this project to rest solely with this for-profit company itself, or will the state do something to effectively monitor its operations? This lake is part of the fabric of the Northeast Kingdom, and we need to protect it for our future generations to enjoy.

Thank you for listening and for any answers to my questions you can provide.

Sincerely,

Teresa Piette
Literacy Interventionist
N.C. Jr. Interact Advisor
NCUJHS
teresa.piette@ncsuvt.org
802-766-2276 x5156

From: mandy peters <gearjamher@yahoo.com>
Sent: Tuesday, October 12, 2021 1:30 PM
To: ANR - WSMD Wastewater
Subject: Cassella Dump

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To Whom It May Concern,

I can not believe that the ANR is actually trying to have a permit that not only allows the Vermont dump to dump it's leachate into our waterways, but is now going to allow New Hampshire to bring their leachate here as well. Is the ANR being paid off with enough money from Cassella to allow this? The safety of our waterways should not have a price on it.

Sincerely,

Mandy Peters

From: mandy peters <gearjamher@yahoo.com>
Sent: Tuesday, October 12, 2021 1:32 PM
To: ANR - WSMD Wastewater
Subject: Leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To Whom It May Concern,

I can not believe that the ANR is actually trying to have a permit that not only allows the Vermont dump to dump it's leachate into our waterways, but is now going to allow New Hampshire to bring their leachate here as well. Is the ANR being paid off with enough money from Cassella to allow this? The safety of our waterways should not have a price on it.

Sincerely,

Mandy Peters

From: Don Peterson <petersoninlowell@gmail.com>
Sent: Tuesday, October 12, 2021 9:44 PM
To: ANR - WSMD Wastewater
Subject: Permit 3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

From: Sarah Birgé <sbirge@gmail.com>
Sent: Tuesday, October 12, 2021 9:09 PM
To: ANR - WSMD Wastewater
Subject: Opposition to Draft Permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Casella has a history of accidental environmental contamination. With this track record, the strictest and most objective oversight is required at every stage of operations.

The consequences of inadequate oversight are catastrophic, posing great risk to environmental and public health.

Management of the technology intended to filter contaminants from toxic landfill leachate must not be left to private, for-profit industry. Many questions demand answers, including:

- Why is Casella/NEWSVT planning Vermont's solution to solid waste?
- What will the pilot project entail? Where will leachate be discharged - to the Black River? Whose drinking water will be affected? Can the safety of Canada's drinking water be guaranteed?
- Who will provide the objective monitoring that is required to ensure public safety, and what pollutants will they monitor for?

--

Executive Direction, Nanubhai Education Foundation

www.nanubhai.org

[Instagram](#) [Twitter](#) [FB](#)

From: Charlie Pronto <charliepronto@rocketmail.com>
Sent: Wednesday, October 13, 2021 9:05 AM
To: ANR - WSMD Wastewater
Subject: permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

This permit should not be issued. Julie Moore has stated there is no benefit to a waterway for processing leachate and then delivering it directly from the wastewater facility to the waterway. However it has also been proven that there are chemicals that pass through that cannot be treated. Why on earth would we be bringing leachate from New Hampshire to dump into Vermont waterways? It makes absolutely no sense. Furthermore if there is a pre-treatment facility built it should be built in Chittenden County which generates most of the garbage. The Northeast Kingdom has suffered enough by having the Normas disgusting dump and eyesore of a mountain created by it. So Northeast Kingdom has also had enough pollution directly deposited into our lake for many years. We do have to take care of our garbage but it should not be the burden of only the Northeast Kingdom. Furthermore it is time to start looking at alternative means of disposing of our garbage. The stump should never have received a 10 year extension and should never receive another extension. It is time for the agency of natural resources to find alternatives to Casella and disposal of leachate. This permit is not the answer.

Charlie Pronto
Former Mayor of Newport
Newport, Vt 0555

Sent from my iPhone

From: Emma Trainor <etrainor@gmfts.org>
Sent: Wednesday, October 13, 2021 4:22 PM
To: ANR - WSMD Wastewater
Subject: Permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

I wish to voice my concern over the proposed draft permit that will potentially allow for the acceptance, processing, and discharging of landfill leachate from Casella landfills into Vermont's waterways.

Casella has a history of accidental environmental contamination. With this track record, the strictest and most objective oversight is required at every stage of operations.

* The consequences of inadequate oversight are catastrophic, posing great risk to environmental and public health.

* Management of the technology intended to filter contaminants from toxic landfill leachate must not be left to private, for-profit industry. Many questions demand answers, including:

- **Why** is Casella/NEWSVT planning Vermont's solution to solid waste?
- **What** will the pilot project entail? **Where** will leachate be discharged - to the Black River? **Whose** drinking water will be affected? Can the safety of Canada's drinking water be guaranteed?
- **Who** will provide the objective monitoring that is required to ensure public safety, and **what** pollutants will they monitor for?

I am awestruck that this sort of conversation STILL needs to be had. This is water. This is life. You, dear reader, are made up of this miraculous material that sustains all of us. Please, there must be somewhere else that it can go other than our drinking source.

Be well,

Emma

From: Emma Trainor <etrainor@gmfts.org>
Sent: Wednesday, October 13, 2021 4:16 PM
To: ANR - WSMD Wastewater
Subject: permit (#3-1406)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

I wish to voice my concern over the proposed draft permit that will potentially allow for the acceptance, processing, and discharging of landfill leachate from Casella landfills into Vermont's waterways.

Casella has a history of accidental environmental contamination. With this track record, the strictest and most objective oversight is required at every stage of operations.

* The consequences of inadequate oversight are catastrophic, posing great risk to environmental and public health.

* Management of the technology intended to filter contaminants from toxic landfill leachate must not be left to private, for-profit industry. Many questions demand answers, including:

- **Why** is Casella/NEWSVT planning Vermont's solution to solid waste?
- **What** will the pilot project entail? **Where** will leachate be discharged - to the Black River? **Whose** drinking water will be affected? Can the safety of Canada's drinking water be guaranteed?
- **Who** will provide the objective monitoring that is required to ensure public safety, and **what** pollutants will they monitor for?

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Be well,

Emma

From: Dinah Yessne <dinahyessne@gmail.com>
Sent: Friday, October 15, 2021 7:50 AM
To: ANR - WSMD Wastewater
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore and Staff:

Eliminating the possibility of conflict of interest in this matter is of the utmost importance. New England Waste Services should not be allowed to participate in the planning process, nor should a vague project be approved. Here are my concerns which you have entirely overlooked thus far. Kindly put your decision making on hold until a neutral party can be named to head this effort and these details can be spelled out.

My main concerns are below.

Thank you,

Dinah Yessne
Calais, Vermont

- . **Why** is Casella/NEWSVT planning Vermont's solution to solid waste? This is the responsibility of the Agency of Natural Resources exclusively, not billion dollar corporate interests whose main interest is their profit margin.
- **What** will the pilot project entail? What technology will be chosen and by whom? **Where** will leachate be discharged - to the Black River? **Whose** drinking water will be affected? Can the safety of Canada's drinking water be guaranteed?
- **Who** will provide the objective monitoring that is required to ensure environmental and public safety, and **what** pollutants will they monitor for of the hundreds of toxic chemicals in leachate?

From: Francine Levine <franniemails@gmail.com>
Sent: Saturday, October 16, 2021 5:59 PM
To: ANR - WSMD Wastewater
Subject: Wastewater

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am submitting a comment that it is outrageous that the cost of cleaning up PFAs from the watershed is being made the responsibility of Montpelier taxpayers. This is a state problem, and should be the state's responsibility to clean up.

Francine Levine
Cross Street
Montpelier

From: White, Jasmine
Sent: Monday, October 18, 2021 3:58 PM
To: ANR - WSMD Wastewater
Subject: WW Mail 10/18
Attachments: 2021-10-18 From Lessard.pdf

You may now submit permit applications, compliance reports and fee payments through our new online form to expedite its receipt and review:

https://anronline.vermont.gov/?formtag=WSMD_Intake.

Division staff contact information can be found online here: <https://dec.vermont.gov/watershed/contacts>.

Thank you for your patience during this challenging time. We wish you and your family the best.



Jasmine White | Financial Administrator (she/her)

Vermont Agency of Natural Resources

Watershed Management Division - Business & Operation Support Services (BOSS)

Davis 3, 1 National Life Dr | Montpelier, VT 05620-3901

802-490-6106 (office)

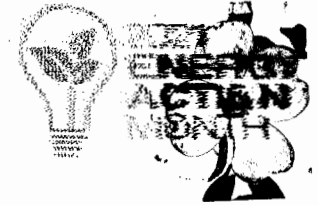
<http://dec.vermont.gov/watershed>



BURLINGTON VT 054

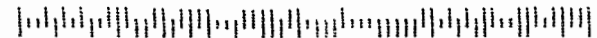
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Agency of Natural Resources
Dept. of Environmental Conservation
Watershed Management Division
1 National Life Drive - Davis 3
Montpelier, VT 05620-3522

05620+3522



Richard & Margaret Lessard
50 Junction Road, Berlin, VT 05602
(802) 223-7482 - thelessards@comcast.net

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October 11, 2021

Agency of Natural Resources
Dept. of Environmental Conservation
Watershed Management Division
1 National Life Drive - Davis 3
Montpelier, VT 05620-3522

RE: Permit No. 3-1406 / PIN: WY06-0020
Applicant: New England Waste Services, Inc.
Receiving WWTF: City of Montpelier Wastewater Treatment Facility

Dear Members of the Board:--

We are submitting our comments and concerns with regard to the above-captioned permit. We are the property owners and residents of 50 Junction Road, Berlin, Vt., which is within the immediate vicinity of the Montpelier Wastewater Treatment Facility, and as such we have been notified of the pending permit and request for amendment.

As a brief history of our qualification as a concerned party, we have owned and occupied as our primary residence the homeplace at 50 Junction Road in excess of 44 years. The WWTF was here when we purchased our home in 1977 in a much smaller configuration. Over the decades there were times when issues arose but generally problems were dealt with quickly by plant staff. We are currently the only residents in the immediate area of the plant and we are adjacent to properties owned by Donald Pierce (Middlesex Electric & Lloyd Home Services) and Capitol Steel & Supply Co, Inc. In discussion with our business neighbors we find that we are all similarly affected.

The main concerns we have with the existing permit and with any requested amendment have to do with the proposed and anticipated increase of discharge of leachate by the applicant to the Montpelier Wastewater Facility (WWTF) and the capability of the WWTF to process this discharge safely and environmentally responsibly.

We have noted over the past year that the increased number of tankers discharging to the WWTF have created an immense increase in the off-gassing odors from the plant -- to the point where our immediate vicinity has been untenable on many days and nights. Throughout summer months when windows or fans should be utilized, we were unable to circulate outside air to our home without inundating our environment with the acrid and sickening smell of sewage and effluent. Our business neighbors have expressed to us their same aggravations with this situation. Throughout July, August and September of this year we had very few days that the permeating odors did not make it severely unpleasant to be outside in our yard and forced us to keep doors and windows shut, even on hot days. We could not ask friends

or visitors to our home because of the offensive odors they would encounter. Even pedestrians using the recreation path and roadway stopped and asked how we could live with the odors.

We have noticed a definite correlation between the increase in off-gassing odors with the increase of tankers bringing leachate to the WWTF. This makes us question the ability of the WWTF to contain this off-gassing issue with their existing equipment, or perhaps their lack of utilization of the equipment that is in place. There should be some form of containment for capturing the off-gassing from these tankers and septic haulers at the point where they discharge to the plant. This issue, while not strictly a "water quality" concern, still needs to be addressed for the health of those living and working in this immediate vicinity.

Secondly, and probably more pertinent to the Watershed Management Division is the subject of the many pollutants that are discharged from the WWTF into the Winooski River. While the Fact Sheet discusses the monitoring procedures for BODs, CODs, Nitrogen, Phosphorus, Chloride, pollutant metals such as Aluminum, Iron and Molybdenum and Arsenic as they affect the water quality of the Winooski River, there is no discussion as to what potential harm these pollutants and poisons may be occurring to the ground water table from which our property, and our neighbor's, draw our drinking water. Have tests and/or studies been made to determine which of these compounds settles out or leaches from the river water and seeps into the ground water table?

The Fact Sheet speaks extensively about PFAS being at higher concentrations in WWTFs that accept leachate. Testing for these substances is directed at the concentrations found in fish dwelling in the Winooski River -- again, it does not discuss penetration to ground water tables.

While we realize that the existing permit is in place and in all likelihood is going to be renewed and perhaps even amended to allow increased discharge by the applicant, we feel that these issues that we have raised should be seriously addressed and protocols for off-gassing abatement and for monitoring of ground water tables should be included in any ongoing permit.

Thank you for your review and consideration of these comments. We will plan to personally appear at the October 28th public hearing.

Very truly yours,


Richard & Margaret Lessard

/mpl

cc: Donald Pierce (Middlesex Electric);
Lloyd Home Service;
Rob Carr, Capitol Steel & Supply;
Vince Conti, Berlin Town Admn.;
John Wakefield, Air Quality Division.

From: Debra day <dayonedreamer@gmail.com>
Sent: Tuesday, October 19, 2021 5:47 PM
To: ANR - WSMD Wastewater
Subject: Please deny Casellas' request to greatly increase PFAS into Dog and Winooski rivers

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am firmly against increasing the amount of PFAS released into our waterways. This is not the answer to protecting our natural resources and precious clean water.

In fact, instead of the State of Vermont taking responsibility for our solid waste, the ANR draft permit hands over much of the responsibility for monitoring, testing and operating a pilot treatment site to a private, for profit company whose revenues are in the millions. And it leaves municipalities unfairly holding the bag.

It is concerning what is happening to our environment and specifically, to our water. As is the case in many places, profits are being valued above the protection of our natural resources and our personal health. For these reasons, please deny Casella's desire to greatly increase the leachate released into the Dog and Winooski rivers.

Sincerely,

Debra Day, Vermont resident

Deb

From: Alex Brown <alexbrown802vt@gmail.com>
Sent: Thursday, October 21, 2021 2:04 PM
To: ANR - WSMD Wastewater
Subject: Permit #3-1406 New England Waste Services Inc.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Now that the Agency of Natural Resources has issued a draft permit to allow Casella to increase the amount of leachate it delivers from its Coventry landfill to the Montpelier water sanitation system, the last line of defense lies with the public. I hope the ANR will heed public concerns and take into consideration the potential danger of PFAS contamination of the public water supply that is certain to ensue.

There is no turning back once this contamination begins. Increasing the volume of PFAS in the water supply increases the danger from chemicals that do not break down in the environment and have been linked to certain cancers and other health concerns.

Because the E.P.A. is still in the early stages of testing for PFAS and determining safety levels, our community will not know if our water is safe. Without scientific guidance, the ANR is only hearing from trade groups and Casella, the waste management company that needs to put the leachate somewhere. I have great respect for Casella, but their economic interests should not be considered more important than public safety and protection of our natural resources.

I urge you to reject the increase in Casella's discharge of PFAS-contaminated leachate into the Montpelier water sanitation system.

Thank you for your consideration,

Alex Brown
432 Johnson Road
East Montpelier VT 05651
802/223-0430

From: Priscilla Fox <priscilla.foxvt@gmail.com>
Sent: Saturday, October 23, 2021 1:10 PM
To: ANR - WSMD Wastewater
Subject: Permit 3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern:

I am opposed to the granting of permit number 3-1406 to New England Waste Services for discharging more leachate into the Montpelier waste water treatment plant. This leachate contains dangerous chemicals known as PFAS which have serious human health effects. ANR should be monitoring and regulating the amount of PFAS statewide, to ensure that our drinking water is safe. This permit would be a step in the wrong direction

Thank you for considering these comments.

Sincerely,
Priscilla Fox

From: Roger Charbonneau <itsrlc@myfairpoint.net>
Sent: Sunday, October 24, 2021 9:38 AM
To: ANR - WSMD Wastewater
Subject: Ban leachate from Lake Memphrmagog

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Director of Vt.ANR:

As a Newport Town resident and lakefront property owner, I request the present ban on the disposal of leachate in the Newport waste water treatment plant be made permanent. The water of our lake needs to be kept safe and clean. Over 85,000 Canadian people and many Vermonters use that water for drinking.

Sincerely, Roger Charbonneau

From: Cindy Sanville <sanville.cindy@gmail.com>
Sent: Sunday, October 24, 2021 9:10 AM
To: ANR - WSMD Wastewater
Subject: No to dumping Leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I strongly apples any thought of treating leachate at the Newport facility or any facility for that matter and dumping into any body of water. Please stop them from bringing in out of state trash to process as well. Big money needs to be responsible and the agency of natural resources has got to act responsibly.

No to leachate! Period.

Cindy Sanville

Sent from my iPad

From: karen Zaur <karenzaur@gmail.com>
Sent: Monday, October 25, 2021 4:07 PM
To: ANR - WSMD Wastewater
Subject: permit #3-1406 New England Waste Services,

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear ANR,

As a resident of Montpelier, I am very concerned about the ANR draft permit to allow an increase in leachate from Vermont's landfill in Coventry to our waste water treatment plant in Montpelier.

Please do what you can to keep our water from contamination.

Thank you,
Karen Zaur
<karenzaur@gmail.com>

From: karen Zaur <karenzaur@gmail.com>
Sent: Monday, October 25, 2021 4:03 PM
To: ANR - WSMD Wastewater
Subject: permit #3-1406 New England Waste Services,

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear ANR,

As a resident of Montpelier, I am very concerned about the ANR draft permit to allow an increase in leachate from Vermont's landfill in Coventry to our waste water treatment plant in Montpelier.

Please do what you can to keep our water from contamination.

Thank you,
Karen Zaur
<karenzaur@gmail.com>

From: sean brown <scb8869@hotmail.com>
Sent: Monday, October 25, 2021 7:27 AM
To: ANR - WSMD Wastewater
Subject: Memphramagog water shed.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please keep our drinking water safe!

From: Alice Trageser <alictet@gmavt.net>
Sent: Tuesday, October 26, 2021 10:25 PM
To: ANR - WSMD Wastewater
Subject: Permit #3-1406 New England Waste Service

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am voicing my concerns about the release of thousands of gallons of harmful leachate from the Casella/Coventry landfill into Montpelier's Waste Resource Recovery Facility. I've learned that the Agency has readied a draft permit ready that will greatly increase the amount of leachate discharge (which is comprised of extremely harmful PFAs) to Montpelier's facility and ultimately into the Dog and Winooski Rivers.

Another solution must be found. The state government needs to be involved. We citizens depend on the Agency of Natural Resources to protect our natural resources and clean water is KEY to a healthy environment.

Alice Trageser
[Charlotte VT](#)

From: Alice Trageser <alictet@gmavt.net>
Sent: Tuesday, October 26, 2021 6:48 PM
To: ANR - WSMD Wastewater
Subject: Permit #3-1406 New England Waste Service

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am voicing my concerns about the release of thousands of gallons of harmful leachate from the Casella/Coventry landfill into Montpelier's Waste Resource Recovery Facility. I've learned that the Agency has a draft permit ready to greatly increase the amount of leachate discharge (which is comprised of extremely harmful PFAs) to Montpelier's facility and ultimately into the Dog and Winooski Rivers.

Another solution must be found. The state government needs to be involved. We citizens depend on the Agency of Natural Resources to protect our natural resources and clean water is KEY to a healthy environment.

Alice Trageser
Charlotte VT

From: Jim McCullough <jmccullough@leg.state.vt.us>
Sent: Wednesday, October 27, 2021 10:59 AM
To: ANR - WSMD Wastewater
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

10/27/2021

Morning Madam Secretary!

My comments are specific to pin WY06-0020 7. (PFAS) This permit section (use of the EPA modified 537) should sunset at the publication of their multi-lab standards, or VT's. own improved standards, whichever contain lowest allowable concentrations. The improved standards shall then become the new threshold.

Further comment...

Going forward, it is ANR's responsibility to setting this threshold, versus the company that manages the issue.

Thank you,

Best,

Jim

Jim McCullough

VT State Representative;

Williston

Conservationist

Legislator

From: Wall-Bull Family <wallbull3@gmail.com>
Sent: Wednesday, October 27, 2021 11:26 AM
To: ANR - WSMD Wastewater
Subject: Permit 3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Madame Secretary,

I'm writing to you to request that your Agency reexamine Permit 3-1406. The Vermont Agency of Natural Resources is charged with oversight and management of Vermont's natural environment on behalf of the people of Vermont. So why would the Vermont Agency of Natural Resources give that responsibility over to NEWSVT? Isn't that the same as putting the fox in charge of the henhouse? The Agency of Natural Resources should not allow the decision-making authority for choosing the technology, the siting of the pilot project, oversight of day-to-day management and maintaining safety requirements in the hands of the landfill owner-operator, particularly one with a history of environmental negligence. With so much at stake, this permit needs to be rewritten to put the State regulatory agency, and the legislature, in charge of every aspect of solid waste management, including (and especially) leachate pretreatment. The very definition of oversight is the action of overseeing something as in supervision, inspection, care, management. The actions of ANR to appoint NEWSVT as the guardians of our natural environment would be the other definition of oversight which is an unintentional failure to notice or do something as in mistake, error, failure. Please don't make this crucial error, avoidable mistake, and ultimate failure. Do what's best for the state of Vermont and rewrite this part of the permit.

Thank you,
Holly B. Bull

From: Polaczyk, Amy
Sent: Friday, October 29, 2021 7:30 AM
To: ANR - WSMD Wastewater
Subject: FW: Hearing in Montpelier re Permit 3-1406 for NEWS VT

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Sent: Thursday, October 28, 2021 7:44 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>; Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: Fwd: Hearing in Montpelier re Permit 3-1406 for NEWS VT

I'm only forwarding this to ensure that it becomes part of our record comment received.

Pete LaFlamme | Director
Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
[802-490-6190](tel:802-490-6190) (cell)
www.watershedmanagement.vermont.gov

From: Sylvia Knight <sknightinv73@gmail.com>
Sent: Thursday, October 28, 2021 7:28:33 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Moore, Julie <Julie.Moore@vermont.gov>
Cc: Robert Wright <rkwright73@gmail.com>; Carol Ode <ode.carol@gmail.com>; made151353 <madel51353@gmail.com>; Shaina Kasper <shaina@communityactionworks.org>; Annette Smith <vce@vermontel.net>
Subject: Hearing in Montpelier re Permit 3-1406 for NEWS VT

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Mr. LaFlamme,

I found tonight's hearing both frustrating and instructive.

First, I was unable to access the Team meeting on line even though my husband had installed Team software on my computer.

Second, So I called in to listen but was unable to interact with anyone at the meeting. Noone enabled me to register my presence via telephone.

Instructive:

The people of Vermont are rightly troubled by this permit and by the State's abdicating its governance of solid waste to a for-profit company and failing to protect the waters of Vermont . They shared important concepts with you and I learned from them. I urge you and your colleagues to listen to my intelligent, caring neighbors who care about water, their neighbors and future generations.

I plan to contribute written comments by Nov. 8.

Please reexamine how you do public hearings and how you consider public comments. I share the lack of confidence that our comments will be taken seriously and change the outcome of this process.

Sylvia Knight

Earth Community Advocate & Researcher

Burlington, VT 05408

sknightinv73@gmail.com

pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.

["We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."](#)

[Martin Luther King, Jr.](#)

From: madel51353@aol.com
Sent: Friday, October 29, 2021 9:32 PM
To: ANR - WSMD Wastewater
Subject: Comments on Draft Permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Agency of Natural Resources:

Please note that I oppose draft permit (#3-1406) for accepting, processing, and discharging landfill leachate from Casella landfills into Vermont's waterways.

1. First, we should not be accepting leachate from New Hampshire.
2. Because Casella has a history of accidental environmental contamination, the strictest and most objective oversight by ANR is required at every stage of operation. With this draft permit, you are letting the fox oversee the chicken coop. The ANR must be in total control and not Casella.
3. The consequences of inadequate oversight are catastrophic, posing great risk to environmental and public health. ANR should be protecting the public and our environment. You must use the precautionary principle at every stage of this project. PFAS, in particular, will bio-accumulate, making future clean up almost impossible and horribly expensive. Stop this pollution now.
4. The system of technology intended to filter contaminants from toxic landfill leachate must not be left to private, for-profit industry.
5. Nothing in the draft permit actually says much of anything about the pilot project to filter contaminants.
6. Too many dangerous toxins are left off the list of those to be monitored.

In short, Casella/NEWSVT should not be planning Vermont's solution to our solid waste problems. Water is sacred and we must protect it for future generations.

Sincerely,
Marguerite Adelman
100 West Canal Street, Unit 4
Winooski, VT 05404
802-540-9101
Member of Vermont PFAS/Military Poisons Coalition

From: Croteau, Marc <Marc.Croteau@environnement.gouv.qc.ca>
Sent: Friday, October 29, 2021 9:21 AM
To: ANR - WSMD Wastewater
Cc: Émond, Marie-Hélène; Moore, Julie; Sylvie Barcelo (sylvie.barcelo@mri.gouv.qc.ca)
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS
Attachments: Avis_DEU-DQMA_Coventry_211012ANG.pdf; SCW-1211214_Avis_DEU-DQMA_Coventry_2021-10-12.pdf; 1211214-LET-Traduction_courtoisie.pdf; 1211214_LTSM-Agency of Natural Resources_DRICA Comments.pdf

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**Environnement
et Lutte contre
les changements
climatiques**

Québec 

Bonjour,

Vous trouverez en annexe une correspondance de M. Marc Croteau, sous-ministre de l'Environnement et de la Lutte contre les changements climatiques, concernant le sujet mentionné en rubrique.

Merci!

Isabelle Groleau pour

Marc Croteau
Sous-ministre
Ministère de l'Environnement et de la Lutte contre les changements climatiques
Édifice Marie-Guyart
675, boul. René-Lévesque Est, 30^e étage
Québec (Québec) G1R 5V7
Tél. 418-521-3861 poste 4019

DATE: October 12, 2021

SUBJECT: **Draft permit No. 3-1406 of the Vermont Agency of Natural Resources in respect of New England Waste Services, Inc.**

1. PURPOSE OF THE APPLICATION

The Direction régionale de l'Estrie et de la Montérégie has asked the Direction des eaux usées (DEU) and the Direction de la qualité des milieux aquatiques (DQMA) to produce an expert opinion on draft permit No. 3-1406 of the Vermont Agency of Natural Resources concerning the leachate generated by New England Waste Services, Inc. (NEWSVT). The permit seeks, according to certain terms and conditions, to authorize the company to transport and discharge leachate from three of its landfill sites at the Montpelier, Vermont municipal wastewater treatment plant.

2. CONTEXT

NEWSVT's existing permit dates from 2012 and expired in 2016. It authorizes the company to discharge leachate from landfill sites in Coventry (in operation), Bethlehem (in operation), and Central Vermont (which ceased operation in 1993) in five Vermont municipal wastewater treatment plants situated in Burlington North, Essex Junction, Barre, Montpelier, and Newport.

Coventry has by far the biggest capacity of the company's landfill sites. The maximum leachate discharge at the site is roughly 60 000 US gallons per day (gpd) (227 m³/d). Forecasts pertaining to phase VI of the site's expansion indicate that the leachate discharge will increase to 100 000 gpd (363 m³/d). Phase VI was authorized in 2018 and will provide roughly 20 years of additional landfill capacity. The leachate discharges on the Central Vermont and Bethlehem sites are not mentioned in the documents consulted.

The leachate generated on the landfill sites is collected in reservoirs then transported by truck to the municipal wastewater treatment plants.

If permit No. 3-1406 is issued, it would come into force on December 1, 2021 and expire on September 30, 2026. The permit excludes discharges at the wastewater treatment plants in:

- Burlington North, because of insufficient capacity at the wastewater treatment plant;
- Essex Junction, which refuses the leachate unless it is pretreated to remove per- and polyfluoroalkyl substances (PFAS);
- Barre, because of insufficient capacity;

- Newport, until new scientific research, new technologies, and/or new data show or seek to show that the threat to water quality in Lake Memphremagog, a drinking-water supply source, will not be unduly unfavourable. The Newport wastewater treatment plant discharges into the Clyde River roughly 500 m upstream from Lake Memphremagog.

Draft permit No. 3-1406 only maintains discharges from the Montpelier wastewater treatment plant.

Effluent from the Montpelier wastewater treatment plant is discharged into the Winooski River situated in the Lake Champlain drainage basin, which straddles the Vermont-Québec border. The discharge occurs roughly 50 km as the crow flies from the lake. The permit now in force limits leachate discharges at the wastewater treatment plant to 23 000 gpd (87 m³/d). The flow can, however, be exceeded provided that the five-day biochemical oxygen demand (DBO₅) load of 1 200 lbs/d (544 kg/d) is not exceeded. Over the past five years, the maximum monthly daily discharge exceeded 23 000 gpd in 54 of the 60 months. On average, the discharged leachate flow stood at 18 979 gpd and reached a maximum of 65 388 gpd.

3. ANALYSIS OF DRAFT PERMIT NO. 3-1406

3.1 Authorized flow rate

Draft permit No. 3-1406 (section I. A. 1.) calls for an increase in the maximum authorized flow rate to 60 000 gpd (227 m³/d). The flow rate must be verified daily by quantifying the total volume sent to the wastewater treatment plant. The limitation of the flow rate is based on the affluent flow rate from the Montpelier wastewater treatment plant and the storage capacity of its reservoir (Vermont DEC, 2021). The wastewater treatment plant's design flow rate is 3.97 million gallons per day (Mgd) (Vermont DEC, 2021). The flow rates measured between 2018 and 2019 stood at 1.9 Mgd for the 50th percentile (median) and 3.18 Mgd for the 95th percentile (Brown and Caldwell, 2019). The permit does not authorize NEWSVT to discharge leachate during rainstorms, when such an event is imminent, or during snowmelt. Moreover, leachate discharge is not allowed when the wastewater treatment plant's affluent flow rate exceeds 12 Mgd (54 550 m³/d), its peak design flow rate.

Based on this data and the clauses, the increase in the authorized flow rate seems acceptable from the standpoint of managing the risk of hydraulic overload in the wastewater treatment plant.

However, it is worth noting that the authorized flow rate (60 000 gpd) is significantly lower than the flow rate of 100 000 gpd stipulated for phase VI at the Coventry landfill site. The draft permit therefore seems to be a short-term solution.

It does not mention follow-up, but it could, in particular, be linked to the results of the pilot study mentioned in section 3.3 of this opinion.

3.2 Discharge limits and conditions governing monitoring of leachate

3.2.1 Release limits presented in draft permit No. 3-1406 (section I. A. 1.)

The limit of 1200 lbs/d (544 kg/d) in respect of the DBO₅ load is being maintained for the discharge at the Montpelier wastewater treatment plant. Twice-weekly monitoring is demanded to verify compliance with this limit, which, according to what is mentioned in the companion document (Vermont DEC, 2021), is similar to the monitoring demanded of other businesses of the same size. Instantaneous sampling is specified for the verification. The pH of the leachate discharged must be verified daily using instantaneous sampling and it must fall between 5 and 9.5. With the rate limit, these are the only limits to be observed in respect of discharges at the Montpelier wastewater treatment plant.

In Québec, leachate discharge in a municipal wastewater treatment plant would be regulated by the municipal by-law respecting discharges into sewers and an agreement between the municipality and the site operator. Indeed, the application guide of the *Regulation respecting the landfilling and incineration of residual materials* (RLIRM) (MDDEFP, 2012) states that “discharges into a sewer system in which the wastewater is carried to a treatment plant established and operated in accordance with the requirements set in its certificate of authorization are not deemed discharges to the environment. They are not, therefore, subject to the application of the standards stipulated in section 53 that limit ammoniacal nitrogen, fecal coliforms, phenolic compounds, 5-day biochemical oxygen demand (BOD₅), suspended solids, zinc, and pH. In this instance, the municipal rules governing discharges into the wastewater system, or the treatment plant apply.” [OUR TRANSLATION]

3.2.2 Release limits of the City of Montpelier under the existing permit No. 3-1207

The limits that the Montpelier wastewater treatment plant must observe are indicated in permit No. 3-1207, which is valid until September 2022 (Vermont DEC, 2017). The city imposes standards pertaining to DBO₅, suspended solids, total phosphorous (TotP), settleable solids, E. coli, pH, and the flow rate. Forms of nitrogen (total nitrogen, total Kjeldahl nitrogen (TKN), and ammoniacal nitrogen) must be monitored but are not standardized. While the values of the prescribed limits may differ from Québec regulatory standards, the components are the same (DBO₅, suspended solids, TotP, and pH) or pursue the same aim (E. coli in respect of microbiological contamination, and nutrients as regards enrichment risks) as the limits typically prescribed for Québec municipalities. It can be risky to directly compare certain values of standards when the periods during which compliance must be verified differ. It can, however, be noted that

the monthly standards of mg/l for DBO₅ and the suspended solids stipulated in the permit are slightly higher than the standards of 25 mg/l (monthly averages) stipulated in the *Regulation respecting municipal wastewater treatment works* for the same two parameters.

As for phosphorous, a nutriment of interest for the quality of Lake Champlain, which the MELCC (2021) deems a priority lake, the load limit prescribed in the permit now in force corresponds, in light of the maximum annual flow rate of 3.97 Mgd, to an average annual concentration of 0.2 mg P/l. This value is lower than the minimal standard of 0.3 mg P/l prescribed by the *Position ministérielle sur la réduction du phosphore dans les rejets d'eaux usées d'origine domestique* (MELCC, 2020a) in the case of an existing discharge upstream from a priority lake such as Lake Champlain. It is also lower than the annual standard of 0.6 mg P/l that would be prescribed for a system equivalent to the one in Montpelier (activated sludge without post-filtration) according to the *Guide pour l'établissement des normes de rejet d'une installation de traitement des eaux usées d'origine domestique* of the MELCC (2020b). The City of Montpelier must comply with a stringent wasteload allocation (WLA) respecting phosphorous because of the total maximum daily load to be observed to protect Lake Champlain.

Based on these comparisons, the oversight presented in the current permit of the City of Montpelier (No. 3-1207) seems acceptable since it targets, without the values of the limits necessarily being identical, protection objectives concerning the receiving environment comparable to those targeted in Québec.

In Québec, a section in the *Regulation respecting municipal wastewater treatment works* covers acute toxicity and stipulates that “[t]he effluent from a treatment plant may not show acute toxicity for rainbow trout *Oncorhynchus mykiss* or daphnia *Daphnia magna*, or both.” The Regulation does not stipulate monitoring or limits in respect of chronic toxicity. Accordingly, if the Montpelier wastewater treatment plant were situated in Québec, it would have to conduct acute toxicity tests on a quarterly basis. The permit of the City of Montpelier (No. 3-1207) requires acute and chronic toxicity tests in respect of fathead minnows *Pimephales promelas* and the ceriodaphnia *Ceriodaphnia dubia* on an annual basis. It should be noted that the tests conducted with fathead minnows and the ceriodaphnia are just as valid as the acute toxicity tests conducted on fathead minnows or daphnia in Québec.

The permit does not stipulate a toxicity standard. However, according to the results of the toxicity tests, the permit can be reopened or amended to require additional tests or an evaluation of a reduction of toxicity.

Since the toxicity of municipal effluent can be linked to the presence of ammoniacal nitrogen (MELCC, 2020c), it is relevant to dwell on this question in the case of a wastewater treatment plant that receives significant quantities of

leachate, given the high concentrations of nitrogen that it can contain. In the case of the Coventry site, concentrations of TKN in leachate as high as 1 900 mg/l have been observed and the average concentration between 2016 and 2020 was 1 155 mg/l. The concentrations discharged could potentially engender acute toxicity in the effluent from the Montpelier wastewater treatment plant, all the more so as, according to the report by Brown and Caldwell (2019), the wastewater treatment plant's current aeration capacity appears to be insufficient to ensure complete nitrification. Nitrification is now possible in the Montpelier system, but it is not required given that there is no standard governing nitrogen. This information suggests a potential acute toxicity risk in discharges from the wastewater treatment plant but the impact on waters under Québec's jurisdiction, situated several dozen kilometres downstream from the discharge point, is uncertain. In light of the information available, the toxic effect of such nitrogen discharges on waters under Québec's jurisdiction is likely negligible.

On the other hand, considering nitrogen's contribution to anthropogenic eutrophication in estuarine and coastal areas (Hudon *et al.*, 2017), the transportation of all forms of nitrogen toward the St. Lawrence River's drainage basin is of concern to the MELCC. However, no measure has at present been implemented in Québec to limit municipal discharges of total nitrogen into the St. Lawrence River drainage basin.

The monitoring demanded of the Montpelier wastewater treatment plant might provide worthwhile information for the MELCC, which is documenting sources of nitrogen that contribute to flows transferred to the Estuary and Gulf of St. Lawrence.

3.2.3 Clauses of interest in draft permit No. 3-1406 and the existing permit of the City of Montpelier (No. 3-1207)

A clause in draft permit No. 3-1406 (section I. A. 3.) respecting leachate discharges stipulates that no product such as leachate should be discharged that can interfere with, pass untreated through, or otherwise be incompatible with the wastewater treatment plant or the elimination of its sludge. It is also mentioned that the discharge permit can be suspended or reopened to modify the release limits if the monitoring reveals that the discharge could exceed Vermont's water quality criteria in the receiving watercourse or have an undesirable impact on the wastewater treatment plant.

The City of Montpelier's current permit (No. 3-1207) also includes a clause that mentions that municipal effluent must not contain concentrations or combinations of contaminants, including oil, grease, scum, foam, or floating solids, which would exceed Vermont's water quality criteria.

Given that compliance with Vermont's water quality criteria protects the environment, the clauses give lawmakers power to intervene when quality criteria are exceeded in the receiving environment. This type of clause is not typically included in the authorizations that the MELCC issues.

3.2.4 Conditions governing the monitoring of leachate presented in draft permit No. No. 3-1406 (section I. A. 2.)

Monitoring in leachate of several contaminants other than standard contaminants is also required in the draft permit:

- monthly monitoring of 26 per- and polyfluoroalkyl substances (PFHxS, PFHpA, PFNA, PFOS, PFOA, and so on);
- quarterly monitoring of COD, suspended solids, total aluminum, iron, molybdenum, total chloride, total phosphorous, total nitrogen, TKN, and nitrites/nitrates;
- biannual monitoring of total metals, volatile organic substances, base/neutral and acid-extractable compounds, pesticides, and polychlorinated biphenyls (PCBs).

The DQMA deems to be satisfactory the minimum detectable limit to be attained of 2 ng/l prescribed for the analysis of PFHxS, PFHpA, PFNA, PFOS and PFOA. The 26 PFAS that the method of analysis prescribed in the permit covers are more or less the same as those covered by the method of analysis of the Centre d'expertise en analyse environnementale du Québec (21 PFAS).

The monitoring requirements are more stringent than those of the MELCC in respect of leachate discharges into sewers. Indeed, the RLIRM stipulates monthly monitoring of the parameters in section 53, excluding fecal coliforms, and annual monitoring of fecal coliforms and the parameters in sections 57 and 66. While some of the parameters are not included in the monitoring that the draft permit prescribes, basically the standard components in the RLIRM and the contaminants targeted by the effluent discharge objectives (EDO) in Québec landfill sites are covered directly or through integrator analyses in the monitoring that NEWSVT has been asked to carry out.

It should be noted that Québec landfill sites and wastewater treatment plants do not currently regularly measure PFAS. A sampling campaign covering 10 landfill sites was conducted in 2019 to assess the presence of PFAS in their raw and treated leachate. The initial municipal treatment plant effluent characterization project also calls for the analysis of PFAS in such effluent. In this context, the monthly monitoring of the PFAS stipulated in the permit is a point of interest for the MELCC.

In the absence of water quality criteria in respect of PFAS in Vermont and, consequently, the absence of wasteload allocations (WLA), the draft permit

requires monitoring of PFAS in the receiving environment so as to observe changes in the quality of the environment. The Vermont Environment Agency is elaborating a water quality criterion expressed as a concentration in fish flesh, representing the quantity of PFAS that an individual can consume weekly. The publication of the criterion is slated for January 1, 2024.

Pending the publication of the Vermont criterion, the DQMA is emphasizing that other jurisdictions such as Michigan and Environment Canada have elaborated surface water quality criteria aimed at protecting human health with respect to perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The DQMA has adopted these criteria, which Vermont could temporarily apply to establish wasteload allocations (WLA) and thus assess the level of PFAS-related risks for the receiving environment.

Based on this information, there is no reason to question the monitoring program prescribed in section I. A. 2. of draft permit No. 3-1406. Furthermore, the DEU and the DQMA would be interested in receiving the results of the analyses submitted by the company to compare them with the findings of Québec ELs.

3.3 Specific monitoring of PFAS and the PFAS treatment pilot project

3.3.1 Specific monitoring of PFAS (section I. A. 4.)

Municipal wastewater treatment plants that accept leachate from landfill sites display higher PFAS concentrations in effluents than plants that do not accept them (Weston and Sampson, 2019). In this respect, draft permit No. 3-1406 (section I. A. 4.) includes monitoring of PFAS at the Montpelier plant. PFHxS, PFHpA, PFNA, PFOS, and PFOA must be measured on a quarterly basis in the affluent, the effluent, and sludge from the plant (instantaneous sampling). Monitoring in a receiving watercourse is also stipulated upstream and downstream from the wastewater treatment plant discharge. A clause in the permit also allows for the permit to be reopened to add the analysis of fish tissue if the concentrations measured in the receiving watercourse are likely to contribute to the accumulation of PFAS in fish tissue and, consequently, to pose a human health hazard related to fish consumption. As noted earlier, the DQMA is recommending that available surface water quality criteria be used in the analysis of the concentrations of PFAS measured in the affluent, the effluent, and the receiving watercourse.

The oversight concerning PFAS goes further than what is now required in Québec. The MELCC is documenting the presence of PFAS in leachate in landfill sites, without requiring monitoring of the latter. The DQMA is also monitoring PFAS in whole fish in the context of specific watercourse monitoring projects in southern Québec.

3.3.2 PFAS treatment pilot project (section I. A. 5.)

In 2019, NEWSVT evaluated PFAS treatment technologies in respect of leachate at the Coventry site (Brown and Caldwell, 2019). Two solutions assessed concern treatment directly on the Coventry site. One solution calls for advanced treatment and surface discharge while the second solution concerns a zero liquid discharge system. Preliminary evaluation of off-site solutions has been conducted for the Montpelier wastewater treatment plant, but also for the Newport wastewater treatment plant, which discharges into a tributary of Lake Memphremagog. These solutions include pretreatment in the municipal wastewater treatment plants and the upgrading of the wastewater treatment plant and posttreatment of the PFAS. While the study is very preliminary, it appears to favour, according to the scores attributed, the off-site solution of upgrading the plants and the posttreatment of the PFAS.

The study by Brown and Caldwell (2019) is solely conceptual and it is neither possible for the time being to judge the acceptability of the different solutions nor to ascertain which solution will be emphasized for the treatment of PFAS.

In draft permit No. 3-1406 (section I. A. 5.), NEWSVT is asked to pursue its deliberations on the treatment of PFAS by conducting a pilot study and determining the design conditions for a full-scale application. The authorities wish to use the findings of the pilot study to establish technological standards that do not yet exist or to determine a standard treatment for PFAS in leachate in landfill sites. It is further indicated that other contaminants could be standardized if they interfere or are incompatible with the municipal wastewater treatment plant, in the case of an off-site solution, or if they pass through the wastewater treatment plant without treatment and cause Vermont water quality criteria to be exceeded.

The draft permit mentions that within four months of the date on which the permit comes into force, NEWSVT must submit a plan for the PFAS treatment pilot study and also indicate the other contaminants removed. The technologies tested in the context of the pilot study should be limited to those identified in the study by Brown and Caldwell (2019). It is also indicated that the plan will be deemed an application to amend the permit and, consequently, will be subject to the provisions pertaining to public notices, hearings, and comments that apply to modifications to permits.

The draft permit then mentions that within one year of the date on which the permit comes into force, NEWSVT should launch the pilot study.

Considering the pilot project's potential implications and its repercussions on Québec watercourses such as Lake Memphremagog, Lake Champlain, and the St. Lawrence River, it would clearly be in the MELCC's interest to comment on the pilot project plan when it is submitted. The DEU and the DQMA also believe that the MELCC should fully monitor the pilot project considering its innovative nature, which can serve in the future to regulate Québec landfill sites. The advanced treatment technologies contemplated differ from existing technologies in Québec landfill sites.

Draft permit No. 3-1406 (section I. A. 5. c.) indicates the monitoring to be conducted during the pilot study. However, the draft permit is confusing since it indicates that monitoring must focus on the affluent, the effluent, and solids at the Montpelier plant. This thus suggests that the solution to be tested must necessarily be an off-site solution involving the pre- or posttreatment of PFAS at the Montpelier wastewater treatment plant.

It would be relevant to ascertain whether only off-site solutions have been selected. Otherwise, the monitoring program presented in section I. A. 5. c. of draft permit No. 3-1406 should be modified such that it does not exclude the on-site solutions presented in the report by Brown and Caldwell (2019).

The monitoring requested does not include DBO_5 , suspended solids, pH, microbiological contamination such as *E. coli* or fecal coliforms, nitrogen, and phosphorous, which are the conventional parameters that the wastewater treatment plant manages. These parameters should be permanently monitored in the case of full on-site treatment of leachate and surface discharges. In the case of an on-site solution without liquid discharges, air quality analyses should probably be included. The Direction de la qualité de l'air et du climat could be consulted in this respect, if need be, following the submission of the pilot study plan.

The draft permit mentions that the pilot project progress reports must be submitted each quarter. It is indicated that the results of the analysis in the wastewater treatment plant that accepts leachate must be presented. Once again, this assertion is confusing and suggests that the treatment in the Montpelier wastewater treatment plant is the only conceivable management approach.

Clarification of this point must be requested.

Lastly, the draft permit mentions that within three years of the date on which draft permit No. 3-1406 comes into force, the applicant should conclude the pilot study and submit its final report. The report should include an evaluation of the feasibility of full-scale implementation and the attendant recommendations. It is impossible

to accurately ascertain when full-scale implementation will occur, but the calendar presented in the draft permit suggests that it would take place within a few years.

It is also important to mention that several of the technologies contemplated involve a concentration of contaminants and thus the generation of highly concentrated residues. The science and the technologies available to manage the residues and potential airborne emissions stemming from these treatment options are still under development (Vermont DEC, 2021; Brown and Caldwell, 2019).

The final report should provide recommendations on the final management approach respecting the concentrated residues.

Lastly, the draft permit does not discuss the management procedures governing the effluent from the pilot system.

It would be relevant to ascertain the management method pertaining to leachate treated by the pilot system. Would the discharge from the pilot system be sent to the Montpelier plant or could another management approach be authorized, such as direct surface discharge if an on-site solution is selected?

4. CONCLUSION ET RECOMMENDATIONS

The analysis of draft permit No. 3-1406 of the State of Vermont concerning NEWSVT's leachate discharges to the Montpelier municipal wastewater treatment plant has revealed certain points that warrant clarification. The points mainly concern the forthcoming pilot study on the treatment of PFAS (section I. A. 5. of the permit; see the text boxes above). It is recommended that the question be raised of whether the off-site treatment of PFAS in the Montpelier wastewater treatment plant is the only conceivable management approach or if on-site treatment in Coventry could be established during the pilot project.

It should be noted that the City of Montpelier's permit (No. 3-1207) was also consulted in the context of the analysis.

Lastly, the DEU and the DQMA believe that it would be in the MELCC's interest to consult the data collected both at the Montpelier wastewater treatment plant following the issuing of the permit (monitoring of leachate and effluent from the wastewater treatment plant) and during the pilot project. The MELCC should certainly comment on the pilot project plan, slated for submission four months after the date on which the permit comes into force. Indeed, the plan will be decisive from the standpoint of NEWSVT's future management of its leachate, which, depending on the solution adopted, might have an impact of Québec watercourses because of discharges into the Lake Memphremagog or Lake Champlain drainage basin.

The DEU and the DQMA also believe that the MELCC should closely monitor the pilot study given its innovative nature with respect to the treatment of persistent organic pollutants such as PFAS found in leachate. The knowledge acquired through the project could possibly serve to regulate discharges in Québec landfill sites.

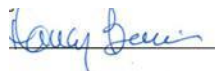
The PDF copy is signed electronically.

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Date: October 12, 2021



Marion Schnebelen
Directrice de la qualité des milieux aquatiques

Date : October 12, 2021

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DATE : Le 12 octobre 2021

OBJET : **Projet de permis no. 3-1406 du Vermont pour l'entreprise New England Waste Services, inc.**

1. OBJET DE LA DEMANDE

La direction régionale de l'Estrie et de la Montérégie a fait appel à la Direction des eaux usées (DEU) et à la Direction de la qualité des milieux aquatiques (DQMA) pour obtenir un avis d'experts sur le projet de permis no. 3-1406 du *Vermont Agency of Natural Resources* concernant les rejets d'eaux de lixiviation générés par l'entreprise New England Waste Services, inc. (NEWSVT). Le permis vise, selon certains termes et conditions, à autoriser l'entreprise à transporter et décharger du lixiviat provenant de trois de ses lieux d'enfouissement à la station d'épuration des eaux usées (STEP) municipale de la Ville de Montpelier au Vermont.

2. CONTEXTE

Le permis de NEWSVT actuellement en vigueur date de 2012 et expirait en 2016. Il autorise l'entreprise à rejeter les eaux de lixiviation des lieux d'enfouissement de Coventry (en opération), de Bethlehem (en opération) et de Central Vermont (plus en opération depuis 1993) dans cinq STEP municipales du Vermont, soit Burlington North, Essex Junction, Barre, Montpelier et Newport.

Parmi les lieux d'enfouissement de l'entreprise, Coventry est de loin celui ayant la plus grande capacité. Actuellement, le rejet maximal d'eau de lixiviation associé à ce lieu avoisine les 60 000 gallons US par jour (gpd) (227 m³/d). Les projections faisant référence à la phase VI d'agrandissement du site montrent que le débit d'eaux rejetées augmentera jusqu'à 100 000 gpd (363 m³/d). La phase VI a été autorisée en 2018 et elle permettra environ 20 ans de capacité d'enfouissement supplémentaire. Les débits d'eaux générés sur les lieux de Central Vermont et de Bethlehem ne sont pas mentionnés dans les documents consultés.

Les eaux de lixiviation générées sur les lieux d'enfouissement sont actuellement accumulées dans des réservoirs puis transportées par camion vers les stations municipales.

S'il est émis, le permis no. 3-1406 serait effectif à partir du 1^{er} décembre 2021 et expirerait le 30 septembre 2026. Ce permis exclut le rejet aux stations de :

- Burlington North, en raison d'une capacité insuffisante à la STEP;
- Essex Junction, qui refuse les eaux tant qu'aucun prétraitement n'est réalisé pour l'enlèvement de substances per- et polyfluoroalkylées (PFAS);

- Barre, en raison d'un manque de capacité;
- Newport, tant que de nouvelles recherches scientifiques, de nouvelles technologies et/ou de nouvelles données démontrent, ou cherchent à démontrer, que le risque pour la qualité de l'eau du lac Memphrémagog (source d'approvisionnement en eau potable) ne sera pas indûment défavorable. La station de Newport se rejette dans la rivière Clyde, à environ 500 m en amont du lac Memphrémagog.

Seul le rejet à la station de Montpelier est maintenu dans le projet de permis (no. 3-1406).

L'effluent de la station de Montpelier est rejeté dans la rivière Winooski qui se trouve dans le bassin versant du lac Champlain (lac transfrontalier dont une portion est au Québec). Le rejet se fait à environ 50 km à vol d'oiseau du lac. Le permis actuellement en vigueur limite à 23 000 gpd (87 m³/d) les rejets d'eaux de lixiviation à la STEP. Ce débit peut cependant être excédé tant que la limite de charge en demande biochimique en oxygène après cinq jours (DBO₅) de 1 200 lbs/d (544 kg/d) n'est pas dépassée. Au cours des cinq dernières années, pour 54 des 60 mois, le débit journalier maximal du mois excédait 23 000 gpd. En moyenne, le débit d'eaux de lixiviation rejeté était de 18 979 gpd et au maximum, il a atteint 65 388 gpd.

3. ANALYSE DU PROJET DE PERMIS NO. 3-1406

3.1 Débit autorisé

Le projet de permis no. 3-1406 (section I. A. 1.) prévoit une augmentation du débit maximal autorisé à 60 000 gpd (227 m³/d). Le débit doit être vérifié sur une base journalière en quantifiant le volume total acheminé à la STEP. La limitation du débit est basée sur le débit d'affluent de la STEP de Montpelier et sur la capacité de stockage du réservoir présent à la station (Vermont DEC, 2021). Le débit de conception de la STEP est de 3,97 millions de gallons par jour (MGD) (Vermont DEC, 2021) tandis que les débits mesurés entre 2018 et 2019 étaient de 1,9 MGD pour le 50^e percentile (médiane) et de 3,18 pour le 95^e percentile (Brown and Caldwell, 2019). Le permis n'autorise pas NEWSVT à rejeter du lixiviat lors d'un événement de pluie important (tempête), lorsqu'un tel événement est imminent ou lors de la fonte des neiges. Le rejet de lixiviat n'est également pas permis lorsque le débit d'affluent de la STEP est supérieur à son débit de pointe de conception, soit 12 MGD (54 550 m³/d).

Sur la base de ces données et de ces clauses, l'augmentation de débit autorisée semble acceptable du point de vue de la gestion des risques de surcharge hydraulique de la STEP.
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Il est toutefois d'intérêt de mentionner que le débit autorisé (60 000 gpd) est significativement inférieur au débit de 100 000 gpd prévu pour la phase VI du lieu d'enfouissement de Coventry. Le projet de permis semble donc être une solution à court-terme. La suite n'est pas mentionnée dans le projet de permis, mais elle pourrait notamment être liée aux résultats de l'étude pilote dont il est question à la section 3.3 du présent avis.

3.2 Limites de rejets et conditions de suivi des eaux de lixiviation

3.2.1 Limites de rejets présentées dans le projet de permis no. 3-1406 (section I. A. 1.)

Pour ce qui est de la charge en DBO₅, la limite de 1200 lbs/d (544 kg/d) est maintenue pour le rejet à la STEP de Montpelier. Le suivi demandé pour la vérification du respect de cette limite est de deux fois par semaine, ce qui est, selon ce qui est mentionné dans le document d'accompagnement (Vermont DEC, 2021), similaire au suivi demandé pour d'autres entreprises de même taille. Un échantillonnage instantané est spécifié pour la vérification. Le pH des eaux de lixiviation rejetées doit quant à lui être vérifié chaque jour à l'aide d'échantillons instantanés et il doit être entre 5 et 9,5. Avec la limite de débit, ce sont les seules limites à respecter pour le rejet à la station de Montpelier.

Au Québec, un rejet d'eaux de lixiviation dans une station municipale serait encadré par le règlement municipal sur les rejets à l'égout et une entente entre la municipalité et l'exploitant du lieu. En effet, le guide d'application du *Règlement sur l'enfouissement et l'incinération de matières résiduelles* (REIMR) (MDDEFP, 2012) mentionne que : « Les rejets effectués dans un système d'égout dont les eaux usées sont acheminées vers une station d'épuration établie et exploitée en conformité aux exigences fixées dans son certificat d'autorisation ne sont pas considérés comme des rejets dans l'environnement; ils ne sont donc pas soumis à l'application des normes de l'article 53 [limitant l'azote ammoniacal, les coliformes fécaux, les composés phénoliques, la DBO₅, les matières en suspension (MES), le zinc et le pH]. Dans ce cas, ce sont les règles de la municipalité pour le rejet dans le réseau d'égout ou à la station d'épuration qui s'appliquent. »

3.2.2 Limites de rejet de la Ville de Montpelier selon son permis actuel (no. 3-1207)

Les limites à respecter par la station de Montpelier sont indiquées dans le permis No. 3-1207 qui est valide jusqu'en septembre 2022 (Vermont DEC, 2017). La Ville a des normes à respecter pour la DBO₅, les MES, le phosphore total (Ptot), les solides décantables, e. coli, le pH et le débit. Les formes d'azote (azote total, azote total Kjeldahl (NTK) et azote ammoniacal) doivent être suivies mais ne sont pas normées. Bien que les valeurs des limites prescrites puissent différer des normes réglementaires québécoises, ces composants sont les mêmes (DBO₅, MES, Ptot et pH) ou visent la même finalité (e. coli pour la contamination microbiologique,

nutriments pour les risques d'enrichissement) que les limites typiquement prescrites aux municipalités du Québec. Il peut être hasardeux de comparer directement certaines valeurs de normes lorsque les périodes sur lesquelles la vérification de la conformité doit être effectuée diffèrent. Il est toutefois possible de mentionner que les normes mensuelles de 30 mg/l pour la DBO₅ et les MES prévues au permis sont légèrement supérieures aux normes de 25 mg/l (moyennes mensuelles) prescrites dans le *Règlement sur les ouvrages municipaux d'assainissement des eaux usées* (ROMAEU) pour ces deux mêmes paramètres.

Pour ce qui est du phosphore, un nutriment d'intérêt pour la qualité du lac Champlain qui est considéré comme un lac prioritaire par le MELCC (2021), la limite en charge prescrite dans le permis en vigueur correspond, en considérant le débit annuel maximal de 3,97 MGD, à une concentration moyenne annuelle de 0,2 mg P/l. Cette valeur est inférieure à la norme minimale de 0,3 mg P/l qui est prescrite par la *Position ministérielle sur la réduction du phosphore dans les rejets d'eaux usées d'origine domestique* (MELCC, 2020a) dans le cas d'un rejet existant en amont d'un lac prioritaire comme le lac Champlain. Elle est également inférieure à la norme annuelle de 0,6 mg P/l qui serait prescrite pour un système équivalent à celui présent à Montpellier (boues activées sans post-filtration) selon le *Guide pour l'établissement des normes de rejet d'une installation de traitement des eaux usées d'origine domestique* du MELCC (2020b). La Ville de Montpellier doit respecter un objectif de rejet (« Wasteload Allocation (WLA) ») sévère pour le phosphore en raison de la charge quotidienne maximale totale (« Total maximum Daily Load ») à respecter pour protéger le lac Champlain.

Sur la base de ces comparaisons, l'encadrement présenté dans le permis actuel de la Ville de Montpellier (no. 3-1207) semble acceptable puisqu'il vise, sans que les valeurs des limites soient nécessairement identiques, des objectifs de protection du milieu récepteur comparables à ceux visés au Québec.

Au Québec, la toxicité aiguë fait l'objet d'un article du ROMAEU qui stipule que : « L'effluent d'une station d'épuration ne peut présenter de la toxicité aiguë pour la truite arc-en-ciel *Oncorhynchus mykiss* ou la daphnie *Daphnia magna* ou les deux à la fois. » Le ROMAEU ne prévoit pas de suivi ni de limite pour la toxicité chronique. Ainsi, si la STEP de Montpellier était au Québec, elle devrait réaliser des essais de toxicité aiguë sur une base trimestrielle. Dans le permis de la Ville de Montpellier (no. 3-1207), des essais de toxicité aiguë et chroniques sont demandés pour le méné tête-de-boule *Pimephales promelas* et la ceriodaphnie *Ceriodaphnia dubia* sur une base annuelle. Il est à noter que les essais réalisés avec le méné tête-de-boule et la ceriodaphnie sont tout aussi valables que les essais de toxicité aiguë réalisés sur la truite arc-en-ciel ou la daphnie au Québec.

Le permis ne prévoit pas de norme en toxicité. Toutefois, selon les résultats des essais de toxicité, le permis peut être rouvert ou amendé pour exiger des essais supplémentaires ou une évaluation de réduction de la toxicité.

La toxicité des effluents municipaux pouvant être liée à la présence d'azote ammoniacal (MELCC, 2020c), il est pertinent de s'attarder à cette question dans le cas d'une STEP recevant des quantités importantes d'eaux de lixiviation, étant donné les fortes concentrations en azote que ces dernières peuvent contenir. Dans le cas du lieu de Coventry, des concentrations en NTK dans les eaux de lixiviation aussi élevées que 1 900 mg/l ont été observées et la concentration moyenne entre 2016 et 2020 était de 1 155 mg/l. Les concentrations rejetées pourraient potentiellement entraîner de la toxicité aiguë à l'effluent de la STEP de Montpellier, d'autant plus que selon le rapport de Brown and Caldwell (2019), la capacité d'aération actuelle de la STEP serait insuffisante pour assurer une nitrification complète. Actuellement, la nitrification est possible dans le système de Montpellier, mais elle n'est pas exigée étant donné qu'il n'y a pas de norme sur l'azote. Ces informations permettent d'appréhender un risque potentiel de toxicité aiguë au niveau du rejet de la STEP, mais l'effet sur les eaux de juridiction québécoise, qui se trouvent à plusieurs dizaines de kilomètres en aval du point de rejet, est incertain. À la lumière des informations disponibles, l'effet toxique de ce rejet d'azote sur les eaux de juridiction québécoise est vraisemblablement négligeable.

Par contre, compte tenu de la contribution de l'azote à l'eutrophisation anthropogénique des zones estuariennes et côtières (Hudon et al., 2017), le transport d'azote (sous toutes ses formes) vers le bassin versant du St-Laurent constitue une préoccupation pour le MELCC. Aucune mesure n'est cependant actuellement en place au Québec pour limiter les rejets municipaux d'azote total sur le bassin versant du St-Laurent.

Le suivi de l'azote demandé à la STEP de Montpellier pourrait fournir des informations intéressantes pour le MELCC qui documente actuellement les sources d'azote contribuant au flux transféré vers l'estuaire et le golfe du Saint-Laurent.

3.2.3 Clauses d'intérêt du projet de permis no. 3-1406 et du permis actuel de la Ville de Montpellier (no. 3-1207)

Une clause du projet de permis pour le rejet d'eaux de lixiviation no. 3-1406 (section I. A. 3.) stipule qu'il ne devrait y avoir aucun déversement de produit (comme des eaux de lixiviation) pouvant interférer avec, passer sans traitement, ou être autrement incompatible avec la STEP ou l'élimination de ses boues. Il est également mentionné que le permis de rejet peut être suspendu ou rouvert pour modification des limites de rejet si le suivi montre que le rejet pourrait entraîner des dépassements des critères de qualité des eaux du Vermont dans le cours d'eau récepteur ou causer des effets indésirables sur la station.

Le permis en vigueur de la Ville de Montpellier (no. 3-1207) inclut également une clause qui mentionne que l'effluent municipal ne doit pas présenter de concentrations ou de combinaisons de contaminants, y compris de l'huile, de la

graisse, de l'écume, de la mousse ou des solides flottants, qui entraîneraient un dépassement des critères de qualité de l'eau du Vermont.

Considérant que le respect des critères de qualité de l'eau du Vermont assure la protection de l'environnement, ces clauses donnent un pouvoir d'intervention au législateur en cas de dépassement de critère(s) de qualité dans le milieu récepteur. Ce type de clause n'est typiquement pas inclus dans les autorisations délivrées par le MELCC.

3.2.4 Conditions de suivi des eaux de lixiviation présentées dans le projet de permis no. 3-1406 (section I. A. 2.)

Le suivi dans les eaux de lixiviation de plusieurs contaminants autres que ceux normés est également demandé dans le projet de permis :

- Un suivi mensuel de 26 PFAS (PFHxS, PFHpA, PFNA, PFOS, PFOA, etc.);
- Un suivi trimestriel de la DCO, des MES, de l'aluminium total, du fer, du molybdène, des chlorures totaux, du phosphore total, de l'azote total, de NTK et des nitrites/nitrates;
- Un suivi biennuel des métaux totaux, des substances organiques volatiles, des composés extractibles acides et basiques/neutres, des pesticides et des biphényles polychlorés (BPC).

La limite de détection minimale à atteindre de 2 ng/l prescrite pour l'analyse des PFHxS, PFHpA, PFNA, PFOS et PFOA, est satisfaisante pour la DQMA. Les 26 PFAS couverts par la méthode d'analyse prescrite dans le permis sont sensiblement les mêmes que ceux couverts par la méthode d'analyse du Centre d'expertise en analyse environnementale du Québec (21 PFAS).

Ces exigences de suivi sont plus contraignantes que celles du MELCC pour un rejet à l'égout d'eaux de lixiviation. En effet, le REIMR prévoit un suivi mensuel des paramètres de l'article 53, excluant les coliformes fécaux et un suivi annuel des coliformes fécaux et des paramètres des articles 57 et 66. Bien que certains de ces paramètres ne soient pas inclus dans le suivi prescrit par le projet de permis, sommairement, les composants normés du REIMR ainsi que les contaminants ciblés par des objectifs environnementaux de rejet (OER) dans les lieux d'enfouissement québécois sont couverts (directement ou via des analyses intégratrices) dans le suivi demandé à NEWSVT.

Il est à noter que les PFAS ne sont actuellement pas mesurés par les lieux d'enfouissement et les STEP du Québec sur une base régulière. Une campagne d'échantillonnage visant 10 lieux d'enfouissement a été réalisée en 2019 pour évaluer la présence de PFAS dans leurs lixiviats bruts et traités. Le projet de caractérisation initiale des effluents des stations d'épuration municipales prévoit

également l'analyse des PFAS dans ces effluents. Dans ce contexte, le suivi mensuel des PFAS prévu au permis constitue un élément d'intérêt pour le MELCC.

En absence de critères de qualité de l'eau pour les PFAS au Vermont et, conséquemment, en l'absence d'objectifs de rejet (WLA), un suivi de ceux-ci dans le milieu récepteur est exigé par le projet de permis de façon à constater les modifications de la qualité du milieu. L'Agence de l'environnement du Vermont élabore actuellement un critère de qualité de l'eau exprimé en concentration dans la chair de poisson, représentant la quantité de PFAS pouvant être consommée hebdomadairement par un individu. La publication de ce critère est prévue pour le 1^{er} janvier 2024.

En attendant la publication du critère du Vermont, la DQMA souligne que des critères de qualité d'eau de surface visant la protection de la santé humaine pour l'acide perfluorooctanoïque (PFOA) et le sulfonate de perfluorooctane (PFOS) ont été élaborés par d'autres juridictions (État du Michigan et Environnement Canada). Ces critères ont été retenus par la DQMA, et pourraient être utilisés provisoirement par le Vermont pour établir des objectifs de rejet (WLA) et ainsi évaluer le niveau de risque associé aux PFAS pour le milieu récepteur.

Sur la base de ces informations, il n'y a pas lieu de questionner le programme de suivi prescrit à la section I. A. 2. du projet de permis no. 3-1406. De plus, la DEU et la DQMA seraient intéressés à recevoir les résultats d'analyses transmis par l'entreprise afin de les comparer aux résultats des LET québécois.

3.3 Suivi spécifique des PFAS et projet pilote de traitement des PFAS

3.3.1 Suivi spécifique des PFAS (section I. A. 4.)

Les STEP municipales recevant des eaux de lixiviation provenant de lieux d'enfouissement présentent des concentrations en PFAS plus élevées aux effluents que celles qui n'en reçoivent pas (Weston & Sampson, 2019). À cet égard, le projet de permis no. 3-1406 (section I. A. 4.) inclut un suivi des PFAS à la station de Montpelier. Sur une base trimestrielle, les PFHxS, PFHpA, PFNA, PFOS et PFOA doivent être mesurés dans l'affluent, l'effluent et les boues de la station (échantillons instantanés). Un suivi dans le cours d'eau récepteur est également prévu en amont et en aval du rejet de la STEP. Une clause du permis permet également de rouvrir le permis pour ajouter l'analyse de tissus de poissons si les concentrations mesurées dans le cours d'eau récepteur sont susceptibles de contribuer à l'accumulation de PFAS dans les tissus des poissons et, par conséquent, de constituer un risque pour la santé humaine en lien avec la consommation de poissons. Comme mentionné précédemment, la DQMA recommande que les critères de qualité de l'eau de surface disponibles soient utilisés dans l'analyse des concentrations mesurées de PFAS à l'affluent, l'effluent et le cours d'eau récepteur.

L'encadrement concernant les PFAS va plus loin que celui actuellement demandé au Québec. Le Ministère documente actuellement la présence de PFAS dans les eaux de lixiviation des lieux d'enfouissement, sans exiger un suivi de ces derniers. Les PFAS sont également suivi dans des poissons entiers par la DQMA, dans le cadre de projets particuliers de suivi des cours d'eau du Québec méridional.

3.3.2 Projet pilote de traitement des PFAS (section I. A. 5.)

En 2019, NEWSVT a évalué des technologies de traitement des PFAS pour les eaux de lixiviation du site de Coventry (Brown and Caldwell, 2019). Deux solutions évaluées concernent des traitements directement sur le site de Coventry. L'une d'elles prévoit un traitement avancé et un rejet en surface tandis que la deuxième concerne un système permettant d'éviter les rejets liquides (« zero liquid discharge »). Des solutions « hors site » ont aussi été évaluées préliminairement pour la STEP de Montpellier, mais également pour la STEP de Newport dont le rejet se fait dans un tributaire du lac Memphrémagog. Ces solutions incluent, d'une part, un prétraitement aux STEP municipales et d'autre part, une mise à niveau des STEP et un post-traitement des PFAS. Bien que très préliminaire, l'étude semble favoriser, selon les notes attribuées, la solution « hors site » de mise à niveau des stations et de post-traitement des PFAS.

L'étude de Brown and Caldwell (2019) étant uniquement conceptuelle, il n'est pour l'instant pas possible de juger de l'acceptabilité des différentes solutions, ni de savoir quelle solution sera privilégiée pour le traitement des PFAS.

Dans le projet de permis no. 3-1406 (section I. A. 5.), NEWSVT est invité à poursuivre ses travaux sur le traitement des PFAS en réalisant une étude pilote et en déterminant les conditions de conception pour une application pleine échelle. Les autorités veulent utiliser les résultats de l'étude pilote pour établir des normes technologiques qui sont actuellement inexistantes ou déterminer un traitement standard pour les PFAS d'eaux de lixiviation de lieux d'enfouissement. Il est aussi mentionné que d'autres contaminants pourraient être normés s'ils interfèrent ou sont incompatibles avec la STEP municipale (dans le cas d'une solution « hors site »), ou encore s'ils traversent la STEP sans traitement et causent des dépassements de critères de qualité des eaux du Vermont.

Le projet de permis mentionne que dans un délai de quatre mois suivant la date à laquelle le permis est effectif, NEWSVT doit présenter un plan pour l'étude pilote sur le traitement des PFAS en indiquant aussi les autres contaminants enlevés. Les technologies testées dans le cadre de l'étude pilote devraient se limiter à celles identifiées dans l'étude de Brown and Caldwell (2019). Il est aussi mentionné que le plan sera considéré comme une application pour amender le permis et, par

conséquent, sera sujet aux dispositions relatives aux avis publics, aux audiences et aux commentaires qui s'appliquent aux modifications de permis.

Le projet de permis mentionne ensuite que dans un délai d'un an suivant la date à laquelle le permis est effectif, NEWSVT devrait débiter l'étude pilote.

Compte tenu des implications potentielles du projet pilote et de ses répercussions sur les cours d'eau québécois (p. ex., le lac Memphrémagog, le lac Champlain, le fleuve St-Laurent), le Ministère aurait clairement intérêt à commenter le plan de projet pilote lorsque ce dernier sera déposé. La DEU et la DQMA sont également d'avis que le projet pilote devrait être suivi entièrement par le Ministère compte tenu de son aspect novateur qui pourra servir dans le futur pour l'encadrement des lieux d'enfouissement québécois. Les technologies de traitement avancé qui sont envisagées diffèrent des technologies actuellement en place sur les lieux d'enfouissement québécois.

Le suivi à réaliser au courant de l'étude pilote est indiqué dans le projet de permis no. 3-1406 (section I. A. 5. c.). Ce dernier porte toutefois à confusion puisqu'il indique que le suivi doit se faire à l'affluent, à l'effluent et dans les solides de Montpellier. Cela laisse donc croire que la solution à tester doit nécessairement être une solution « hors site » de pré- ou de post-traitement des PFAS à la STEP de Montpellier.

Il serait pertinent de savoir si seules les solutions « hors site » sont retenues. Dans le cas contraire, le programme de suivi présenté à la section I. A. 5. c. du projet de permis no. 3-1406 devrait être modifié pour ne pas exclure les solutions « sur site » qui sont présentées dans le rapport de Brown and Caldwell (2019).

Le suivi demandé n'inclut pas les paramètres conventionnels qui sont pris en charge par la STEP, soit la DBO₅, les MES, le pH, la contamination microbiologique (e. coli ou coliformes fécaux) l'azote et le phosphore. Ces paramètres devraient définitivement être suivis dans le cas d'un traitement complet des eaux de lixiviation « sur site » et d'un rejet en surface. Dans le cas de la solution « sur site » sans rejet liquide, des analyses de la qualité de l'air devraient probablement être incluses. La Direction de la qualité de l'air et du climat pourrait être consultée à ce sujet au besoin suite au dépôt du plan de l'étude pilote.

Le projet de permis mentionne que des rapports d'avancement du projet pilote doivent être présentés à chaque trimestre. Il est indiqué que les résultats d'analyse à la STEP recevant les eaux de lixiviation doivent être présentés. Encore une fois, cette affirmation porte à confusion et laisse croire que le traitement à la STEP de Montpellier est le seul mode de gestion envisageable.

Une clarification de ce point devrait être demandée.

Le projet de permis mentionne finalement que dans un délai de trois ans suivant la date à laquelle le permis no. 3-1406 est effectif, le demandeur devrait conclure l'étude pilote et remettre son rapport final. Ce dernier devrait inclure une évaluation de la faisabilité de l'implantation à pleine échelle et des recommandations quant à cette dernière. Il n'est pas possible de savoir précisément à quel moment l'implantation pleine échelle sera effectuée, mais le calendrier présenté dans le projet de permis permet de croire que l'implantation se ferait dans un horizon de quelques années.

Il est également important de mentionner que plusieurs des technologies envisagées impliquent une concentration des contaminants, et donc une génération de résidus très concentrés. La science et les technologies disponibles pour gérer les résidus et les émissions atmosphériques potentielles de ces options de traitement sont encore en développement (Vermont DEC, 2021; Brown and Caldwell, 2019).

Des recommandations sur le mode de gestion finale des résidus concentrés devraient être fournies dans le rapport final.

Finalement, les modalités de gestion de l'effluent du système pilote ne sont pas discutées dans le projet de permis.

Il serait pertinent de connaître le mode de gestion des eaux de lixiviation traitées par le système pilote. Est-ce que le rejet du pilote sera dirigé à la station de Montpelier ou un autre mode de gestion pourrait être autorisé (p. ex., un rejet direct en surface si une solution « sur site » est choisie)?

4. CONCLUSION ET RECOMMANDATIONS

L'analyse du projet de permis no. 3-1406 de l'état du Vermont, concernant les rejets d'eaux de lixiviation de NEWSVT vers la STEP municipale de Montpelier, a permis d'identifier certains points qui mériteraient des éclaircissements. Ces points concernent principalement la future étude pilote sur le traitement des PFAS (section I. A. 5. du permis; voir les encadrés ci-avant). Il est recommandé de demander si le traitement « hors site » des PFAS à la STEP de Montpelier est le seul mode de gestion envisageable ou si un traitement « sur site » (à Coventry) pourrait être mis en place lors du projet pilote.

Il est à noter que le permis de la Ville de Montpelier (no. 3-1207) a également été consulté dans le cadre de l'analyse.

Finalement, la DEU et la DQMA sont d'avis que le Ministère aurait intérêt à consulter les données récoltées, tant à la STEP de Montpelier suite à la délivrance du permis (suivi des eaux de lixiviation et de l'effluent de la STEP) que lors du projet pilote. Concernant ce projet pilote, le plan qui devrait être déposé

quatre mois suivant la date à laquelle le permis sera effectif devrait définitivement être commenté par le Ministère. En effet, ce dernier sera déterminant pour la gestion future des eaux de lixiviation de la NEWSVT, qui, dépendamment de la solution choisie, pourrait avoir des effets sur les cours d'eau québécois (rejet dans le bassin versant du lac Memphrémagog ou du lac Champlain).

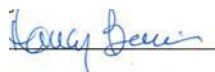
La DEU et la DQMA sont également d'avis que le Ministère devrait suivre de près l'étude pilote étant donné son aspect novateur en ce qui a trait au traitement des contaminants organiques persistants comme les PFAS contenus dans les eaux de lixiviation. Les connaissances qui seront acquises grâce à ce projet pourraient éventuellement servir pour l'encadrement des rejets des lieux d'enfouissement québécois.

Bernard Patry, ing., Ph. D.



Jérôme Bérubé, Biologiste, M. Sc.

Approuvé par:



Nancy Bernier
Directrice des eaux usées

Date : 2021-10-12



Marion Schnebelen
Directrice de la qualité des milieux aquatiques

Date : 2021-10-12

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COURTESY TRANSLATION

Dear Madam,
Dear Sir:

Please find enclosed, the opinion of the Ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC) of Québec with respect to Vermont draft permit 3-1406 for New England Waste Services Inc.

This opinion constitutes the official MELCC opinion under your permit issuing process. Thank you for the opportunity you afforded us to help maintain the quality of boundary waterways. Hoping to continue the existing cooperation between our two organizations, I remain,

Yours truly,

Original signed by:

Marc Croteau
Deputy Minister

Encl.

Cc: Julie Moore, Secretary of the Vermont Agency of Natural Resources
Sylvie Barcelo, Deputy Minister, Relations internationales et de la Francophonie

Québec, le 28 octobre 2021

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive
Davis 3, Vermont 05620-3522

Madame,
Monsieur,

Vous trouverez ci-joint l'avis du ministère de l'Environnement et de la Lutte contre les changements climatiques (MELCC) concernant le projet de permis numéro 3-1406 du Vermont pour l'entreprise New England Waste Services Inc.

Cet avis représente l'avis officiel du MELCC dans le cadre du processus d'émission de votre permis. Nous vous remercions de l'opportunité qui nous est donnée de contribuer au maintien de la qualité des cours d'eau limitrophes et souhaitons poursuivre la collaboration établie entre nos organisations.

Veuillez agréer, Madame, Monsieur, l'expression de nos sentiments les meilleurs.

Le sous-ministre,



Marc Croteau

p.j.

c. c. M^{me} Julie Moore, secrétaire de l'Agence des ressources naturelles
du Vermont
M^{me} Sylvie Barcelo, sous-ministre des Relations internationales et de la
Francophonie

From: Brenda J Bean <BrendaJBean@comcast.net>
Sent: Sunday, October 31, 2021 1:51 PM
To: ANR - WSMD Wastewater
Subject: Comments about permit #3-1406 New England Waste Services, Inc.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Agency of Natural Resources (ANR) – as a new resident of Berlin and former long-term resident of Montpelier, I am writing to express great concern about the expansion being planned for leachate (including PFAS) into the Dog and Winooski Rivers from Montpelier’s Water Resource Recovery Facility (WRRF). The expansion from 24,000 gallons to 60,000 gallons per day is very significant and at least deserves thoughtful, thorough pre- and post-testing and ongoing monitoring for harmful effects. Such testing and monitoring should be done by ANR and independent contractors, not Casella, which would likely have a conflict of interest about the results.

I realize Vermont is in a tough spot with only one functioning landfill and no obvious place to put the leachate. However, the answer should not be to dump pollution in rivers running through one town because other towns have refused. ANR should protect ALL the State’s rivers and lakes. Though this is an exceptionally difficult job as long as materials that constitute or create pollution continue to be made and/or bought and sold in Vermont, we should not solve the problem by falling back upon federal courts and actions (e.g., protection of interstate and international bodies of water).

Please do NOT move forward with this expansion of pollution and DO aggressively address the root causes of this problem. Thank you.

Brenda J Bean
370 Dodge Farm Road
Berlin, VT 05641

(802) 279-4935 (cell)
BrendaJBean@comcast.net

From: Elizabeth Nelson <lizinvermont@gmail.com>
Sent: Sunday, October 31, 2021 9:05 AM
To: ANR - WSMD Wastewater
Subject: comment on draft permit (#3-1406)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

The Agency of Natural Resources has released a draft permit (#3-1406) for accepting, processing, and discharging landfill leachate from Casella landfills into Vermont's waterways. The permit includes accepting toxic landfill leachate from New Hampshire!

Does the ANR realize that the clean-up and mitigation costs estimated in 2019 of just a small area of Bennington is 6.8 million to 10 million dollars? This action will irrevocably damage the northern half of Vermont and affect our formerly friendly relationship with Canada.

Some more scientific and long range solutions to waste must be found, and soon. Perhaps we can be leaders in this world wide problem.

But we can start with not importing waste from other states.

Elizabeth Nelson

West Glover VT 05875

<https://anrweb.vt.gov/PubDocs/DEC/PFOA/Final-Agreement-2019/8-20190408-State-v-SGPP-Appendix-C1.pdf>

Estimated Costs for Corrective Action Alternatives
Corrective Action Area II
Bennington, Vermont
Saint-Gobain Performance Plastic

From: Elizabeth Nelson <lizinvermont@gmail.com>
Sent: Sunday, October 31, 2021 9:09 AM
To: ANR - WSMD Wastewater
Subject: Fwd: comment on draft permit (#3-1406)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

----- Forwarded message -----

From: **Elizabeth Nelson** <lizinvermont@gmail.com>
Date: Sun, Oct 31, 2021 at 9:05 AM
Subject: comment on draft permit (#3-1406)
To: <anr.wsmdwastewatercomments@vermont.gov>

The Agency of Natural Resources has released a draft permit (#3-1406) for accepting, processing, and discharging landfill leachate from Casella landfills into Vermont's waterways. The permit includes accepting toxic landfill leachate from New Hampshire!

Does the ANR realize that the clean-up and mitigation costs estimated in 2019 of just a small area of Bennington is 6.8 million to 10 million dollars? This action will irrevocably damage the northern half of Vermont and affect our formerly friendly relationship with Canada.

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Elizabeth Nelson

West Glover VT 05875

<https://anrweb.vt.gov/PubDocs/DEC/PFOA/Final-Agreement-2019/8-20190408-State-v-SGPP-Appendix-C1.pdf>

Estimated Costs for Corrective Action Alternatives
Corrective Action Area II
Bennington, Vermont
Saint-Gobain Performance Plastic

From: Erica Sohl <81irving@gmail.com>
Sent: Tuesday, November 2, 2021 5:08 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

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Thank you.

Erica Sohl,
258 Swett Rd,
Danville, VT
81irving@gmail.com

From: Angela Barton <angebarton22@gmail.com>
Sent: Tuesday, November 2, 2021 3:24 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Angela Barton,
97 Eden St.,
Hyde Park, VT
angebarton22@gmail.com

From: Jerry Hickson <arctracer@yahoo.com>
Sent: Tuesday, November 2, 2021 4:04 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Jerry Hickson,
Hartland,
Main St, VT
arctracer@yahoo.com

From: Marcia Liotard <armtl@gmavt.net>
Sent: Tuesday, November 2, 2021 6:16 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Marcia Liotard,
3609 Ireland Rd,
Starksboro, VT
armtl@gmavt.net

From: Rebecca Bunnell <batootie69@yahoo.com>
Sent: Tuesday, November 2, 2021 4:06 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Rebecca Bunnell,
1610 Vt Rt 105,
Guildhall, VT
batootie69@yahoo.com

From: Andy Yoken <bettermaterialrecovery@gmail.com>
Sent: Tuesday, November 2, 2021 8:28 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's Waterways

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Thank you.

Andy Yoken,
60 Lake Street,
Burlington, VT
bettermaterialrecovery@gmail.com

From: David Brandau <brandau49@gmail.com>
Sent: Tuesday, November 2, 2021 6:08 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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David Brandau,
36 Johnson Hill Road,
S. Royalton, VT
brandau49@gmail.com

From: Cathi Brooks <cathibrooks@aol.com>
Sent: Tuesday, November 2, 2021 8:32 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Cathi Brooks,
Rt 114,
East Burke, VT
cathibrooks@aol.com

From: Charles Murphy <chic7@comcast.net>
Sent: Tuesday, November 2, 2021 4:50 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Charles Murphy,
PO BOX 1093,
Manchester, VT
chic7@comcast.net

From: Charles Monette <cmonette76@gmail.com>
Sent: Tuesday, November 2, 2021 3:40 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Charles Monette,
Po Box 861,
Brattleboro, VT
cmonette76@gmail.com

From: Dave Bliven <dcbliven@yahoo.com>
Sent: Tuesday, November 2, 2021 7:10 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Dave Bliven,
115 wayne hill rd,
East Corinth, VT
dcbliven@yahoo.com

From: Daniel Green <dhgreen@comcast.net>
Sent: Tuesday, November 2, 2021 3:08 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Daniel Green,
158 Partridge Run,
East Montpelier, VT
dhgreen@comcast.net

From: Donald Maynard <donmaynard6152@comcast.net>
Sent: Tuesday, November 2, 2021 4:40 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Donald Maynard,
703 Brand Farm Drive,
South Burlington, VT
donmaynard6152@comcast.net

From: Robb Kidd <evolvingpeace@gmail.com>
Sent: Tuesday, November 2, 2021 7:28 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Robb Kidd,
18 Ridge St,
Montpelier, VT
evolvingpeace@gmail.com

From: Kate Kenner <faunesiegel@gmail.com>
Sent: Tuesday, November 2, 2021 4:42 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Kate Kenner,
3539 Weatherhead Hollow Rd.,
Guilford, VT
faunesiegel@gmail.com

From: Lorna Fortune <haukebsup@gmail.com>
Sent: Tuesday, November 2, 2021 3:08 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Lorna Fortune,
1127 North Avenue,
Burlington, VT
haukebsup@gmail.com

From: Helene Deltufo <hdeltufo@comcast.net>
Sent: Tuesday, November 2, 2021 4:14 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

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Helene Deltufo,
95 Honeysuckle Ln Po Box 512 North Bennington, Vt 05257, North Bennington Vt 05257, VT hdeltufo@comcast.net

From: Hedya Klein <hedyak@yahoo.com>
Sent: Tuesday, November 2, 2021 3:50 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Hedya Klein,
128 Seymour Ext.,
Middlebury, VT
hedyak@yahoo.com

From: Teru Simon <highhollow@gmail.com>
Sent: Tuesday, November 2, 2021 8:02 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Teru Simon,
2601 Skiparee Rd,
North Pownal, VT
highhollow@gmail.com

From: Jonas Kantola <jkantola@mit.edu>
Sent: Tuesday, November 2, 2021 6:56 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Jonas Kantola,
188 Coon Club Rd,
West Windsor, VT
jkantola@mit.edu

From: Christopher Lopez <judaspaladin@aim.com>
Sent: Tuesday, November 2, 2021 8:38 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Christopher Lopez,
53 Cleveland Ave,
Rutland, VT
judaspaladin@aim.com

From: Kristine Winnicki <kwinnicki@hotmail.com>
Sent: Tuesday, November 2, 2021 8:36 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Kristine Winnicki,
PO Box 28,
Chester, VT
kwinnicki@hotmail.com

From: Justine Lakin <lakin@vermontel.net>
Sent: Tuesday, November 2, 2021 4:06 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Justine Lakin,
71 Walnut Hill Road,
Springfield, VT
lakin@vermontel.net

From: Linda Kohn <linda.kohn@utoronto.ca>
Sent: Tuesday, November 2, 2021 3:26 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Linda Kohn,
62 Fern Street,
Burlington, VT
linda.kohn@utoronto.ca

From: Luke Hoenigsberg <lukehoenigsberg@gmail.com>
Sent: Tuesday, November 2, 2021 4:16 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Luke Hoenigsberg,
173 Sutton Farm Dr,
Shelburne, VT
lukehoenigsberg@gmail.com

From: Marilyn Sowles <marilynsowles@gmail.com>
Sent: Tuesday, November 2, 2021 9:20 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways now

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Now is the time to do all you can to protect Vermont's waterways for both present and future generations. Please.

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Marilyn Sowles,
1528 Porters Point Road,
Colchester, VT
marilynsowles@gmail.com

From: Mary Harbaugh <mary@strongstreet.com>
Sent: Tuesday, November 2, 2021 4:14 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Mary Harbaugh,
100 Congress St,
Saint Albans, VT
mary@strongstreet.com

From: Nancy Philips <nancyphilips007@gmail.com>
Sent: Tuesday, November 2, 2021 6:12 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Nancy Philips,
PO box 334,
Norwich, VT
nancyphilips007@gmail.com

From: Peter & carolyn Borden <nedrob39@icloud.com>
Sent: Tuesday, November 2, 2021 3:58 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Peter & carolyn Borden,
224 Six Bux Way,
Fair Haven, VT
nedrob39@icloud.com

From: Nonnie Locke <nonandbets@gmail.com>
Sent: Tuesday, November 2, 2021 9:32 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Nonnie Locke,
1589 Sunset Lake Rd,
W Brattleboro, VT
nonandbets@gmail.com

From: Scott Little <nyuhornet007@hotmail.com>
Sent: Tuesday, November 2, 2021 3:56 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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This new permit is an important step towards protecting our environment and the health of our communities. And right now, you have an opportunity to strengthen this permit and prevent more chemical contamination in the region's waterways.

Thank you.

Scott Little,
10 Will Dean Rd Apt 4,
Springfield, VT
nyuhornet007@hotmail.com

From: F. Peter Carothers <pcarothers78@gmail.com>
Sent: Tuesday, November 2, 2021 3:20 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

The state's Coventry landfill, owned by Casella Waste Systems, generates roughly 9.5 million gallons of leachate each year. This garbage juice contains all sorts of toxic substances, including "forever chemicals" known as PFAS – suspected carcinogens linked to a variety of severe health problems.

Waste companies need to take responsibility for the damage they're causing to our waters, and as Vermont's Agency of Natural Resources, you can make that happen.

I'm asking you to do more to ensure the protection of Vermonters' health and environment. That means revising the draft permit to clarify standards around the pilot pre-treatment project and generally strengthen its water quality protections before adopting it. Here's what you need to know:

- Wastewater treatment plants are not equipped to remove all types of leachate contaminants from wastewater prior to that wastewater being discharged into surface waters.
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Thank you.

F. peter Carothers,
76 White Pine Lane,
Middlebury, VT
pcarothers78@gmail.com

From: Deb Shelby <shelbybolton13@gmail.com>
Sent: Tuesday, November 2, 2021 3:14 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Water is critical to all life, plants, animals, and humans. I urge you to do everything you can to ensure the water in Vermont is not further polluted with toxic chemicals!!!!

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

The state's Coventry landfill, owned by Casella Waste Systems, generates roughly 9.5 million gallons of leachate each year. This garbage juice contains all sorts of toxic substances, including "forever chemicals" known as PFAS – suspected carcinogens linked to a variety of severe health problems.

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Thank you.

Deb Shelby,
2169 Notch Rd,
Jericho, VT
shelbybolton13@gmail.com

From: Sarah Lincoln <slincoln556@gmail.com>
Sent: Tuesday, November 2, 2021 6:32 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Sarah Lincoln,
556 Quaker St,
North Ferrisburgh, VT
slincoln556@gmail.com

From: Tammy Walton <tammyjwalton@gmail.com>
Sent: Tuesday, November 2, 2021 10:24 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Tammy Walton,
420 Holy Cross Road,
Cocheater, VT
tammyjwalton@gmail.com

From: Clay Turnbull <turnbull@together.net>
Sent: Tuesday, November 2, 2021 4:38 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Clay Turnbull,
1799 Simpson Brook Road,
Townshend, VT
turnbull@together.net

From: Michele Perry <vtfarmmbp@comcast.net>
Sent: Tuesday, November 2, 2021 4:34 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Michele Perry,
261 High St,
Perkinsville, VT
vtfarmmbp@comcast.net

From: Debby Goldman <weboflife22@yahoo.com>
Sent: Tuesday, November 2, 2021 3:50 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Debby Goldman,
445 Ridge Rd.,
Shaftsbury, VT
weboflife22@yahoo.com

From: Charmaine Wesley-hartman <wesleyc@yosemite.edu>
Sent: Tuesday, November 2, 2021 3:32 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Charmaine Wesley-hartman,
65 Dian Cicle,
Chester, VT
wesleyc@yosemite.edu

From: Charlie Holland <c19f47h@gmail.com>
Sent: Wednesday, November 3, 2021 11:16 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Charlie Holland,
179 Roaring Brook Rd.,
Killington, VT
c19f47h@gmail.com

From: Dan Parker <danparkerantiques@yahoo.com>
Sent: Wednesday, November 3, 2021 2:26 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Dan Parker,
117 Main St,
Coventry, VT
danparkerantiques@yahoo.com

From: D Moore <dr.d.moore@juno.com>
Sent: Wednesday, November 3, 2021 12:22 AM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

D Moore,
PO BOX 275,
Rochester, VT
dr.d.moore@juno.com

From: Elizabeth Golden <elizabethgolden@shoreham.net>
Sent: Wednesday, November 3, 2021 2:08 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am very concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

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Thank you.

Elizabeth Golden,
45 Armory Lane #206,
Vergennes, VT
elizabethgolden@shoreham.net

From: Jeff Kiralis <kiralis@tutanota.com>
Sent: Wednesday, November 3, 2021 9:48 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Jeff Kiralis,
410 Potato Hill Rd,
Fairlee, VT
kiralis@tutanota.com

From: Mara Brooks <marambrooks@gmail.com>
Sent: Wednesday, November 3, 2021 8:34 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Mara Brooks,
,
East Montpelier, VT
marambrooks@gmail.com

From: Michael Ward <mikeward49@hotmail.com>
Sent: Wednesday, November 3, 2021 1:36 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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Thank you.

Michael Ward,
2129 Mt Hunger Rd,
Bethel, VT
mikeward49@hotmail.com

From: Richard Hiscock <rch@gmavt.net>
Sent: Wednesday, November 3, 2021 6:28 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

The state's Coventry landfill, owned by Casella Waste Systems, generates roughly 9.5 million gallons of leachate each year. This garbage juice contains all sorts of toxic substances, including "forever chemicals" known as PFAS – suspected carcinogens linked to a variety of severe health problems.

Waste companies need to take responsibility for the damage they're causing to our waters, and as Vermont's Agency of Natural Resources, you can make that happen.

I'm asking you to do more to ensure the protection of Vermonters' health and environment. That means revising the draft permit to clarify standards around the pilot pre-treatment project and generally strengthen its water quality protections before adopting it. Here's what you need to know:

- Wastewater treatment plants are not equipped to remove all types of leachate contaminants from wastewater prior to that wastewater being discharged into surface waters.
- These facilities cannot remove the long list of contaminants in leachate, including toxic "forever chemicals" known as PFAS, which have been found to be highly toxic to humans and the environment.
- As currently drafted, the permit gives Casella too much authority to set the goals and boundaries of the pilot study. The Agency of Natural Resources should have oversight of this process – identifying pilot study parameters and requiring Casella to select a pretreatment technology that will meet those parameters.
- The draft permit does not include any details regarding how the proposed technology to remove PFAS will be evaluated. The Agency must take a more active approach and develop clear standards and criteria for evaluating the proposed pilot program.

This new permit is an important step towards protecting our environment and the health of our communities. And right now, you have an opportunity to strengthen this permit and prevent more chemical contamination in the region's waterways.

Thank you.

Richard Hiscock,
34 Fecteau Cir Apt 26,
Barre, VT
rch@gmavt.net

From: Laurie Speicher <savetheearth53@hotmail.com>
Sent: Wednesday, November 3, 2021 8:12 AM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

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As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

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Thank you.

Laurie Speicher,
1319 N Danville Rd, 12,
Danville, VT
savetheearth53@hotmail.com

From: Ron Krupp <woodchuck37@hotmail.com>
Sent: Wednesday, November 3, 2021 6:36 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

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Thank you.

Ron Krupp,
8 Lyons Avenue,
SOUTH BURLINGTON, VT
woodchuck37@hotmail.com

From: Carole O'Connell <caroleboc@gmail.com>
Sent: Thursday, November 4, 2021 11:52 AM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

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Thank you.

Carole O'Connell,
246 Elm St, Apt 205,
Newport, VT
caroleboc@gmail.com

From: Darryl Bloom <darryl.bloom@gmail.com>
Sent: Thursday, November 4, 2021 9:08 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

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Waste companies need to take responsibility for the damage they're causing to our waters, and as Vermont's Agency of Natural Resources, you can make that happen.

PFAS should be treated as toxic the waste that they are. We need an information campaign to keep PFAS-containing materials out of landfills and recycle bins. I am sure many people put unrecyclable plastics in the recycle bins. The public should be encouraged to set aside PFAS plastics and deliver them to the toxic waste collection sites that happen every few months.

I'm asking you to do more to ensure the protection of Vermonters' health and environment. That means revising the draft permit to clarify standards around the pilot pre-treatment project and generally strengthen its water quality protections before adopting it. Here's what you need to know:

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Thank you.

Darryl Bloom,
25 Summer St,
Montpelier, VT
darryl.bloom@gmail.com

From: Ken Lesem <kenlesem@burlingtontelecom.net>
Sent: Thursday, November 4, 2021 3:20 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

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Thank you.

Ken Lesem,
90 James Ave,
Burlington, VT
kenlesem@burlingtontelecom.net

From: Darryl Bloom <darryl.bloom@gmail.com>
Sent: Saturday, November 6, 2021 6:52 PM
To: ANR - WSMD Wastewater
Subject: Require Coventry Landfill to remove PFAS from leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

The state's Coventry landfill, owned by Casella Waste Systems, generates roughly 9.5 million gallons of leachate each year. This garbage juice contains all sorts of toxic substances, including "forever chemicals" known as PFAS – suspected carcinogens linked to a variety of severe health problems.

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I'm asking you to do more to ensure the protection of Vermonters' health and environment. That means revising the draft permit to clarify standards around the pilot pre-treatment project and generally strengthen its water quality protections before adopting it. Here's what you need to know:

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Thank you.

Darryl Bloom,
25 Summer St,
Montpelier, VT
darryl.bloom@gmail.com

From: Polaczyk, Amy
Sent: Thursday, November 4, 2021 12:31 PM
To: ANR - WSMD Wastewater
Subject: FW: Draft Discharge Permit #3-1406 for NEWSVT

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Sent: Thursday, November 4, 2021 12:26 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>; Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: FW: Draft Discharge Permit #3-1406 for NEWSVT

For the comments received file....



Pete LaFlamme | Director
Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6190 (cell)
www.watershedmanagement.vermont.gov

From: Margie Schacht <margieschacht5@gmail.com>
Sent: Thursday, November 4, 2021 12:23 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Subject: Draft Discharge Permit #3-1406 for NEWSVT

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Mr LaFlamme -

I support the comments from the Jubilee Social Justice Committee opposing the above permit as written and urge the State to withdraw the permit. I am **extremely concerned** about a large increase in leachate containing persistent toxins (including PFAS) contaminating the Winooski River and Lake Champlain. It needs to be a high priority to find technology that removes the toxins from the leachate as soon as possible in order to protect our water quality for all generations.

Thank you,

Margie Schacht

From: Polaczyk, Amy
Sent: Thursday, November 4, 2021 12:31 PM
To: ANR - WSMD Wastewater
Subject: FW: Draft Discharge Permit #3-1406 for NEWSVT

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: Margie Schacht <margieschacht5@gmail.com>
Sent: Thursday, November 4, 2021 12:19 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Draft Discharge Permit #3-1406 for NEWSVT

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. Polaczyk -

I support the comments from the Jubilee Social Justice Committee opposing the above permit as written and urge the State to withdraw the permit. I am **very concerned** about a large increase in leachate containing persistent toxins (including PFAS) contaminating the Winooski River and Lake Champlain. It needs to be a high priority to find technology that removes the toxins from the leachate as soon as possible in order to protect our water quality for all generations.

Thank you,

Margie Schacht

From: John Barrows <johnbarrowsvt@gmail.com>
Sent: Tuesday, November 2, 2021 5:10 PM
To: ANR - WSMD Wastewater
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I will start off with a question:

“I ask Sec Moore to please fully and transparently describe in writing the negative current and long term environmental effects of pouring millions of gallons of toxic leachate into Lake Memphremagog”.

An email response would be greatly appreciated.

ANR will soon decide the environmental fate of Lake Memphremagog for centuries to come. I oppose this permit because it will allow Casella landfill to pour millions of gallons of toxic leachate into an already polluted South Bay, Lake Memphremagog. There is an assumption the proposed PFAS removal facility will solve the toxic pollution problem of discharging leachate when it clearly does not.

There is an assumption that this conceptual pilot pretreatment facility at Vermont’s only landfill, which in a few years could discharge into the Black River, only a half mile from the lake, will solve the pollution problem. This is very far from the truth. The future pretreatment facility, as proposed, will only remove a few classes of PFAS and will not come close to removing 90% of the toxic contaminants, metals, chemicals and poisons in the landfill leachate. The vast majority of these poisons will flow through this very limited pretreatment facility untreated.

If approved, the state of VT would be giving the Casella Coventry landfill permission to discharge toxic leachate into an already polluted Lake Memphremagog.

There is clear evidence of a very serious pollution problem given the evidence of cancerous Brown Bullhead in South Bay and Scott’s Cove. There is clear scientific evidence that cause or at least part of the cause of the cancer in the Brown Bullhead in Memphremagog is from toxic contaminants. When UV rays or a virus are cited as possibly causes of the cancer that are always in combination with contaminates. Every scenario of the cause of the cancer in Bullhead includes contaminates.

As you are aware cancer in fish is very rare in the United States.

The conceptual pretreatment facility described in Special condition #5 on pages 7 and 8 should not be part of this discharge permit application. The location of this proposed facility should be a separate permit application.

The state needs to determine pollution and water quality standards prior to approving this permit.

This extremely important decision to build pretreatment facility in the Coventry landfill will determine the environmental fate of Lake Memphremagog forever.

From: Peggy Lipscomb <mtlipsc@gmail.com>
Sent: Tuesday, November 2, 2021 12:42 PM
To: ANR - WSMD Wastewater
Cc: KSims@leg.state.vt.us
Subject: Landfill leachate permitting

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I understand that the Agency of Natural Resources has a draft permit for accepting, processing, and discharging landfill leachate from Casella landfills into Vermont's waterways.

I oppose this permit. I especially oppose accepting leachate from New Hampshire. In fact, I oppose Vermont accepting any refuse of ANY kind from ANY other state into our Coventry landfill or our waterways.

We need to concentrate on mitigating the effects of our one and only active landfill in Coventry and any non-active ones. We need to protect our soil and waterways from "forever" chemicals (as soon as we learn how), not add to the problem. Haven't we learned anything (about procrastination) from the climate crisis?

Sincerely,
Margaret Lipscomb
Greensboro

From: Giannetti, Nick
Sent: Tuesday, November 2, 2021 5:21 PM
To: ANR - WSMD Wastewater
Subject: FW: Lake Memphremagog

Forwarding this comment received for the record.



Nick Giannetti | Pretreatment Coordinator
Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
~~802-490-6186 cell~~

Nick.Giannetti@Vermont.gov

<http://dec.vermont.gov/watershed/wastewater>

From: Chris Carrington <nekvermonter@gmail.com>
Sent: Tuesday, November 2, 2021 9:55 AM
To: Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: Lake Memphremagog

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Nick,

Please do not allow untreated or treated leachate from the Coventry Landfill to be discharged into Lake Memphremagog.

Sincerely,

Christine Carrington, Newport resident

From: Polaczyk, Amy
Sent: Friday, November 5, 2021 11:52 AM
To: ANR - WSMD Wastewater
Subject: FW: Draft discharge permit #3-1406 for NEWVT

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: catherinecooke@burlingtontelecom.net <catherinecooke@burlingtontelecom.net>
Sent: Friday, November 5, 2021 11:11 AM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>; pete.laflamme@vermont.gov.
Cc: sknightinv73 <sknightinv73@gmail.com>
Subject: Draft discharge permit #3-1406 for NEWVT

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am writing to support the comments from the Social Justice Committee of the Cathedral Church of St. Paul opposing the permit as written and urge you to withdraw it for further research into this matter. I believe the general public wants to protect our water quality, not just for the present but for generations to come. With this in mind, it is necessary to endeavor to keep toxins out of the Winooski River and Lake Champlain and the leachate does contain harmful toxins. Diluting the toxins does not make them disappear. We need to work for other solutions to dispose of them.
Thank you for keeping this in mind. The Venerable Catherine Cooke

From: Polaczyk, Amy
Sent: Friday, November 5, 2021 4:53 PM
To: sknightinv73; LaFlamme, Pete
Cc: ANR - WSMD Wastewater
Subject: RE: Comments on Draft Permit #3-1406 for NEWS-VT discharge to Montpelier

Hello Sylvia,

Thank you for your comments.

Best regards,
Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: Sylvia Knight <sknightinv73@gmail.com>
Sent: Friday, November 5, 2021 4:19 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Comments on Draft Permit #3-1406 for NEWS-VT discharge to Montpelier

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Mr. LaFlamme,

Please find my comments on draft permit #3-1406 attached. Please acknowledge that you have received my comments.

Thank you also for the extension of the comment period for this permit to Nov. 24.

Sincerely,

Sylvia Knight

Earth Community Advocate & Researcher
Burlington, VT 05408
sknightinv73@gmail.com
pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.

["We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."](#)

[Martin Luther King, Jr.](#)

From: Polaczyk, Amy
Sent: Friday, November 5, 2021 10:16 AM
To: Whiteley, Katherine
Cc: ANR - WSMD Wastewater
Subject: Submitting Comments for permit 3-1406

Hello KC,

I recognized your name and was lucky enough to have your email address come up in my outlook search. Apologies that the contact phone number in the permit wasn't when it changed earlier in the pandemic. If you would like to submit your comments by replying all to this email, the comments will come to me and should also go to the general email box where we receive comments on wastewater permits. I'll also follow-up with a phone call if this doesn't reach you. The comment period has been extended for a few weeks so you'll have until November 24th to submit comments.

Best regards,
Amy



Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: VALERIE DILLON <valotter@yahoo.com>
Sent: Friday, November 5, 2021 8:26 AM
To: ANR - WSMD Wastewater
Subject: Comments. VT ANR draft permit #3-1406. DRAFT PRETREATMENT DISCHARGE PERMIT. SIGNIFICANT INDUSTRIAL USER. New England Waste Services, Inc.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

TO: Vermont Agency of Natural Resources.

FROM: Valerie Dillon. Newport, VT.

Subject: Comments (A) about VT ANR draft permit #3-1406 (2021)

DRAFT PRETREATMENT DISCHARGE PERMIT. SIGNIFICANT INDUSTRIAL USER. New England Waste Services, Inc.

When VT ANR realized the immediate threat of the Bennington contamination of PFAS/PFOA, the agency stepped up - did research, involved experienced experts and worked a plan based on science and common sense. **That same savvy is needed again!** The leachate “problem” is also an opportunity. It is more than a local issue for waste services. There needs to be cooperation and coordination beyond the State of Vermont. Is it realistic for one company to solve the problem? “Forever chemicals” concern the whole region. To be honest, it’s world wide.

Question: What is the VT ANR game plan going forward as it relates to leachate management?

Summing up the situation:

- A. We know/recognize that leachate may be a potent mix of chemicals. Many toxic and/or hazardous.
- B. There are standards and guidelines for acceptable discharge of landfill leachate to wastewater treatment facilities. Those standards & guidelines are rather dated. As a matter of fact, the EPA is currently in process of revising them. The public comment period just closed October 14, 2021 for **(EPA) Preliminary Effluent Guidelines Program Plan 15 (#1)**. Basically the EPA is studying the “*forever chemical*” situation as it relates to landfill associated discharges, wastewater control practices, and leachate treatment technologies.
- C. Vermont wastewater treatment facilities (WWTF) are not currently positioned to remove or manage “forever chemicals”. There is only some limited guidance to try and ensure a treatment facility is not compromised. In other words, the existing treatment systems can continue to function for their intended purpose.
- D. The draft permit #3-1406 provision for the “pilot pretreatment of leachate” limits the pilot based on the 2019 Conceptual Leachate Treatment Scoping Study (#2) that is already outdated. ***This is an evolving technological front with emerging contaminants.***

Footnotes:

1. EPA Preliminary Effluent Guidelines Program Plan 15 (September 2021) <https://www.epa.gov/eg/preliminary-effluent-guidelines-program-plan>

2. **Draft Permit #3-1406 5.a.**references study https://anrweb.vt.gov/PubDocs/DEC/SolidWaste/OL510/OL510%202019.10.15%20Conceptual_Leachate_Treatmnt_Scoping_Study.pdf “Technologies shall be limited to those identified in or provide treatment equivalent to the technologies presented in the “Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill”, dated October 11, 2019.”

From: Jim Collins <jcsbhaha@gmail.com>
Sent: Sunday, November 7, 2021 12:40 PM
To: ANR - WSMD Wastewater
Subject: Casella comments

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Of course no amount of commentary by legitimately outraged citizens will cause any change in the Agency of Natural Resources' embrace and approval of the expansion of operations of the Casella, or New England Waste Services, landfill in Coventry, inasmuch as the ANR is obviously in bed with that trash service, it is necessary that an accumulation of Vermonters point out the obvious, which is that the landfill on the edge of a river that flows into lake Memphremagog should never have been granted the right to expand its facility, much less to now be allowed to expand its leachate production due to that landfill expansion as well as to the importation of leachate from other sites!

The landfill should have been denied expansion and a long-range plan for its closure should have been started, while the state should have taken upon itself the responsibility of developing a plan for state-controlled trash sites and contaminant treatment at sites removed from natural water sources. And the state should be researching and developing effective toxic chemical removal or neutralization apart from any supposed research by for-profit businesses.

Much concern is given to the very dangerous PFAS chemicals, but there are scores of dangerous substances in trash leachate, some of which are removed at municipal treatment facilities, but all of which go directly into rivers and then lakes whenever there are storms that overwhelm the drainage handling of such facilities, and such storms are becoming increasingly common.

As a native Vermonter recently returned to the state, I am continually confounded by the fact that the state enjoys a good reputation for its environmental laws and actions, when in fact it has proven itself weak and even ineffective in these areas. In the late 1970's I took part in an apparently excellent water quality monitoring survey in a summer on Lake Champlain, going out to several sites and taking water samples at different depths, along with a number of other volunteers. Eventually the reports were consolidated and the state agency running the survey reported that yes, the evidence was conclusive, that the lake was clearly becoming eutrophic due to phosphate pollution, primarily from agricultural runoff as well as from septic systems of residences on the shore and from effluents from village and city waste treatment facilities. But the state took no obvious concrete action to control the pollution from any of the sources, and now Champlain is becoming increasingly eutrophic and otherwise contaminated by chemicals from such sources. And the state still continues to be very weak in actions that would protect the state's waters.

Of course there is much also to be said about the fact that the bulk of the trash brought to the Casella site in Coventry comes from Chittenden County as well as from other VT population centers and from surrounding states, precious little of it coming from the Northeast Kingdom, where the site is located, resulting in a large amount of highway exhaust pollution from the constant flow of trash and leachate haulers to and from the Coventry plant. This is similar to the larger world situation in which wealthy countries send off their trash and recycling to third world nations.

Jim Collins
998 Lafont Road
Albany, VT 05875

From: VALERIE DILLON <valotter@yahoo.com>
Sent: Sunday, November 7, 2021 8:50 AM
To: ANR - WSMD Wastewater
Subject: Comments (B) about VT ANR draft permit #3-1406 DRAFT PRETREATMENT DISCHARGE PERMIT. SIGNIFICANT INDUSTRIAL USER. New England Waste Services, Inc.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

TO: Vermont Agency of Natural Resources.

FROM: Valerie Dillon Newport, VT.

Subject: Comments (B) about VT ANR draft permit #3-1406 DRAFT PRETREATMENT DISCHARGE PERMIT. SIGNIFICANT INDUSTRIAL USER. New England Waste Services, Inc.

Leachate management will be an ongoing process for the various solid waste facilities. Of particular interest is the longevity of the Coventry VT sanitary landfill. The community is no longer supportive of continuing the waste collection and is pushing to have the site closed & capped. There is a moratorium to prevent any leachate, no matter how it is treated, from entering the waters of Lake Memphremagog. Please remember, this waterbody serves as a drinking water source!!!

1. There should be a separate permit process for the proposed *“pilot program to pre-treat leachate”* to eliminate the hazardous components that are not within the current realm of wastewater treatment facilities. It is a good start in better managing the process. The science is in the early phase of determining what other chemicals are in need of removal. There are likely to be new lessons learned and those may require additional treatment. Please consider that in the design of the facility. It is interesting that this permit limits the opportunities. **This is an evolving technological front.**

- **Draft Permit page 8** *Technologies shall be limited to those identified in or provide treatment equivalent to the technologies presented in the “Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill”, dated October 11, 2019.*

2. For the current situation, what were considered the “best practices” must change. That includes eliminating the source as well as managing the waste end products so they do not contaminate the environment and lead to health hazards. The EPA is only just beginning to update standards and guidelines published in 2000. Though common sense has recognized many concerns!!

3. Please incorporate in the planning, the impacts of climate change. There are serious implications for hydrological changes in the regions of landfills and waste management.

4. Special note. All unlined components of VT landfill zones, active or closed, should be mitigated! Materials removed from the site and area reclaimed. Particularly a priority are wetlands that were used as dump sites.

From: Roy, Alexandra <Alexandra.Roy@mce.gouv.qc.ca>
Sent: Monday, November 8, 2021 4:23 PM
To: ANR - WSMD Wastewater
Cc: Giannetti, Nick; Polaczyk, Amy
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS
Attachments: 2021-11-08 Pretreatment Draft Permit Memorandum VF.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,
Please find attached comments re. draft pre-treatment discharge permit 3-1406.
Regards,



Alexandra Roy

Attachée politique – Internet haute vitesse

Cabinet du premier ministre

770, rue Sherbrooke Ouest

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Alexandra.roy@mce.gouv.qc.ca

MISE EN GARDE CONCERNANT LES COMMUNICATIONS D'INFLUENCE – En conformité à la Loi sur la transparence et l'éthique en matière de lobbyisme, nous vous demandons, si cela n'est pas déjà fait et que vous êtes visé au sens de cette loi, de vous inscrire rapidement au registre des lobbyistes. Pour plus d'information sur la Loi : 1-866-281-4615 ou commissairelobby.qc.ca.

Ce courriel est à usage restreint. S'il ne vous est pas destiné, veuillez svp le détruire et en informer l'expéditeur.

TABLE DE CONCERTATION DES ÉLUS DU LAC MEMPHRÉMAGOG

MEMORANDUM PRESENTED

To

VERMONT AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION

CONCERNING THE

DRAFT PRETREATMENT DISCHARGE PERMIT

FOR

NEW ENGLAND WASTE SERVICES, INC.

NOVEMBER 8TH, 2021

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1. Table de concertation des élus of lake Memphremagog

The *Table de concertation des élus du lac Memphremagog* (hereafter the Table) is a collaborative space born in early 2020. It is composed of Canadian elected representatives from municipal, provincial and federal sectors and it aims to share knowledge between different levels of government, establishing the roles and responsibilities of each entity and harmonizing our efforts, course of action and messages around the New England Waste Services landfill in Coventry, Vermont.

The members of the table include:

- Federal
 - Marie Claude Bibeau, member of Parliament for Compton—Stanstead, Minister of Agriculture and Agri-Food
 - Élisabeth Brière, member of Parliament for Sherbrooke
 - Pascale St-Onge, member of Parliament for Brome-Missisquoi, Minister of Sport and Minister responsible for the Economic Development Agency of Canada for the Regions of Quebec
- Provincial
 - Gilles Bélanger, member of the national assembly for Orford
 - Christine Labrie, member of the national assembly for Sherbrooke
- Municipal¹
 - Jacques Demers, warden of the MRC de Memphremagog and Mayor of Ste-Catherine-de-Hatley
 - Lisette Maillé, president of the environmental committee of the MRC de Memphremagog and mayor of Austin
 - Vicky-May Hamm, mayor of the City of Magog
 - Steve Lussier, mayor of the City of Sherbrooke
 - Karine Godbout, president of the environmental committee of the City of Sherbrooke

Gilles Bélanger, the main spokesperson for the Table, currently assumes leadership of the table.

On March 19th, 2021, a joint statement was adopted by the Table to acknowledge that the protection of Lake Memphremagog is a priority shared by all elected officials at all levels of government in Canada. It was also stated that in the absence of scientific certainty concerning the health and environmental impacts of leachate treatment in the Memphremagog watershed, the precautionary principle², such as it was defined in the Rio convention of 1992, should be applied. This position was reaffirmed in a motion that was adopted at the National Assembly of Quebec on June 3rd, 2021.

¹ As of November 4th. Municipal elections in Québec will be held on the 7th of November, 2021.

² Precautionary principle: Where there are threats of serious or irreversible damage, lack of full scientific certainty shall be not used as a reason for postponing cost-effective measures to prevent environmental degradation.

While PFAS have been subject to great media and citizen interest in the last few years, the Table is also concerned with a wider range of pollutants of emerging concern found in trash. We understand this is a societal problem and landfills are stuck with the management of these unwanted by-products, that ultimately might pass on waterways and have an impact on the water supply. This preoccupation cannot be overemphasized, and it is precisely in that context that the application of the precautionary principle is best indicated.

2. Interests in draft pretreatment permit

The members of the Table have been following closely the Coventry land site developments over more than 20 years. More recently, most of the members were involved with the consultations around the phase VI expansion and have participated in the act 250 consultations.

For our group, it was critical to provide comments and a few recommendations on the draft pretreatment permit since it raises several issues that were key to our involvement around the phase VI consultations and can be considered a logical continuation of our involvement. These are stated under conditions 18 of the *Land Use Permit* for the Coventry landfill³ such as:

- prohibiting the disposal of landfill leachate from the facility in Coventry at the Newport wastewater treatment facility (WWTF) or anywhere in the Memphremagog watershed;
- compelling NEWS-VT to conduct a scoping study of treatment options for leachate management.

These two issues are specifically mentioned both in the draft fact sheet or the draft pretreatment permit. Therefore, we believe it is important to bring our input both to preserve the progress achieved with respect to leachate treatment in the Memphremagog watershed and also by bringing inputs regarding the implementation of the pilot leachate treatment project which is supposed to be based on one of the options described in the 2019 Brown & Caldwell scoping study.

We would also like to add that we are pleased that the draft pretreatment permit intends to consider the *Leachate Treatment Pilot Study Plan* described in section 5a of the draft pretreatment permit as a procedure to amend the permit therefore being subject to all public notice, hearing, and comments which gives us an opportunity to comment on the future plan.

³ Land Use Permit #7R0841-13, New England Waste Services of Vermont, Inc.

3. Comments, concerns and recommendations

3.1. Lake Champlain

Our deep interest in the permit also stems from the fact that the WWTF in Montpelier discharges in the Winooski River which is a part of the Lake Champlain watershed. Parts of the Lake Champlain are in Quebec and its outlet is the Richelieu River, which ultimately flows into the St-Lawrence River. This watershed connection illustrates how we are all global citizens and share the responsibility for the protection of our environment. It also reaffirms that we welcome the fact that the draft pretreatment permit includes many additional measures that are being taken to monitor leachate treatment efficiency in WWTF and that maintaining the status quo is not the intent of the *Department of Environmental Conservation* since the pre-treatment permit will lead to the implementation of a pilot treatment technology for leachate, thus increasing the chance of improving the overall quality of the environment.

Our interest in promoting leachate treatment away from the Memphremagog watershed is based on the lack of social acceptability of the project in Québec which arises from a variety of reasons. One of which implies that it seems appropriate to us that the negative externalities associated with leachate coming from waste generated in the United States be mostly assumed by people from the United States, rather than having the leachate treated and discharged less than 7 miles from the Canadian border in a lake which used as a drinking water source for more than 175 000 Canadians.

3.2. Proposed maximum leachate flow

Based on the Fact Sheet for Permit background information provided by VDEC⁴, NEWSVT leachate flows are anticipated to increase from 60,000 gallons per day to 100,000 gallons per day (gpd) following completion of Phase VI expansion, authorized in 2018.

Concurrently, the draft permit proposes a maximum day discharge limit of 60,000 gpd to the City of Montpelier Wastewater Treatment Facility (WWTF), as long as the discharge meets the BOD₅ limitation of 1,200 lbs/day, maximum day.

Considering the elimination of four past or current leachate outfalls described in Section V of the draft permit (including S/N 006 (City of Newport WWTF)), only the City of Montpelier (COM) WWTF would hence have the authorization to receive NEWSVT leachate upon proposed permit approval. A few questions inevitably arise regarding leachate mass balance data.

- A. In the past, daily leachate volumes accepted at the COM-WWTF could exceed the maximum day permitted discharge of 23,000 gpd so long as the discharge met the BOD₅ limitation of 1,200 lbs/day. If, as in the past, the decisive criterion remains BOD₅ compliance instead of sheer leachate volume limits, is it conceivable that up to 100,000 gpd of pretreated leachate could eventually be discharged to the COM, as long as BOD₅ limits could still be met?

⁴ Vermont Department of Environmental Conservation, Fact Sheet for Permit, Sept. 2021, p.2

- B. If the answer to question A is no, does it imply that upon completion of Phase VI expansion at NEWSVT, in view of the new maximum day discharge limits at the COM-WWTF (60,000 gpd), at least 40% of NEWSVT leachate produced daily could not be hauled to Montpelier and would have to be disposed of through other regulated alternatives?
- C. If the answer to B is yes, what would be those alternatives? How do we ensure Newport WWTF is not one of those?

3.3. Effluent Monitoring Requirements

3.3.1. Choice of methods and list of PFAS to be monitored.

Although EPA modified 537 Version 1.1 has been used in the past to monitor regulated drinking water PFAS in particular, (EPA) has announced in September 2021 the availability of the EPA 1633 Draft PFAS method which standardizes procedures for the measurement of PFAS in more complex matrices such as wastewater and landfill leachate.

EPA 1633 provides a standardized and validated approach for PFAS monitoring and can now be used to provide high-quality data consistent with PFAS monitoring best practices. Method 1633 is for use in the Clean Water Act (CWA) for the determination of PFAS by liquid chromatography/mass spectrometry (LC-MS/MS). Isotopically labelled standards are used for the calibration and quantification of PFAS analytes.

Recommendation 1:

Considering the increasing public concern regarding PFAS exposure and in order to better protect stakeholders on both sides of the border to improve our understanding of PFAS and towards new PFAS related compounds, we recommend that monitoring requirements for the Permittee and at the City of Montpelier WWTF be modified as follows:

- A. PFAS in leachate, WWTF raw influent, and WWTP final effluent shall be analyzed utilizing EPA Method 1633;
- B. The list of PFAS to be monitored shall consist of the 40 PFAS compounds contained in Section 20, Table 1 of draft method 1633 which includes not only the 26 PFAS described in Attachment A of the currently proposed permit but other PFAS of increasing concern such as GenX, Perfluorooctane Sulfonamides (FOSEs, FOSAs) and FTCAs.
- C. The analyses shall be conducted by a laboratory that holds ISO/IEC 17025 certification (Testing and Calibration Laboratories). Additionally, where possible, the laboratory should also hold current accreditation for this specific method and/or substances.

3.3.2. Sampling methods for each parameter and / or group of parameters:

Recommendation 2:

Snapshot (“grab”) sampling techniques are not optimal for influent and effluent samples collected at WWTFs.

We recommend that due to the inherent variability in the flow rate and composition of the wastewater at the WWTFs, all samples collected at the City of Montpellier WWTF be collected using composite sampling techniques based on a flow variable, regardless of the parameter. Sample types on page 6 and page 9 of the draft permit shall therefore be modified from “grab” to “flow proportional composite” for all sample types (it is already the case for Total Metals and toxicity testing on page 9).

3.3.3. Sampling frequency and sampling timing

Recommendation 3:

We recommend that PFAS sampling frequency at the City of Montpellier WWTF be increased from quarterly (p. 6) to monthly to match Permittee sampling frequency monitoring requirements (p. 3)

Recommendation 4:

On page 4 and page 10 of the Draft Permit, two sampling periods are proposed for selected substances (January 1 to June 30 and July 1 to December 31st). It would seem more appropriate to use if different substances were analyzed during specific time periods. Organic compounds can be influenced by seasonal effects (eg, snowmelt or rain) and periods of intense use (eg, spraying pesticides from late spring to summer).

We recommend that the sampling frequency for VOCs, Acid and Base/Neutral Extractables Compounds, Pesticides and PCBs in landfill leachate be increased from 2x-Annually (p. 3) to quarterly.

Additionally, sample collection at the wastewater treatment plant should be done in dry weather, as the rain dilutes the contaminants of interest. Moreover, sampling in spring should try to be as minimally influenced as possible by snowmelt.

3.3.4. Target minimum detection limits (MDL)

Recommendation 5:

Detection limits of the method proposed by the proponent are presented in mg/L for metals and in µg/L for organic compounds. Current analytical technologies can easily obtain concentrations in µg/L for metals and in ng/L for organic compounds.

We recommend that the method used for metals and organic compounds analysis (pages 3 and 9) shall meet target minimum detection limits (MDL) in µg/L and ng/L respectively.

3.3.5. Protection of Aquatic Life and Wildlife

Environment and Climate Change Canada (ECCC) has published Federal Environmental Quality Guidelines for the Protection of Aquatic Life and Wildlife ([Federal environmental quality guidelines summary table](#)). The [Canadian Council of Ministers of the Environment](#) (CCME), the state of Vermont, and the US federal government have all published recommendations that could serve as appropriate benchmarks.

Additionally, it is important to report the concentrations detected and not only the number of exceedances of the daily thresholds defined in the recommendations. Organisms are chronically exposed to a mixture of substances that, cumulatively, can have a significant effect on ecosystem health.

Overall Whole Effluent Toxicity Testing (WET): 48 hours and 7 days tests are too short to detect chronic effects. Instead, we recommend chronic toxicity testing of effluent for a duration of 28 days on *Oncorhynchus mykiss* (rainbow trout) and 21 days on *Daphnia magna*.

3.3.6. Sampling locations

No details are provided on the type of fish that would be collected and it is not clear whether fish monitoring primarily targets human consumption or wildlife protection concerns. As some of the substances may bioaccumulate and bioamplify in the food chain (i.e., concentrations would be higher in higher tier predators) and some species are preferred over others for human consumption, species that meet these two criteria would be the most appropriate.

3.3.7. Additional compounds of particular concern

Freshwater only makes up less than 1% of the world's water. With the global population projected to reach almost 10 billion by 2050, there is an urgent concern on freshwater demand and availability. It is becoming widely known that currently, that one of the threats to global freshwater reserve and, ecological and public health is the rising of emerging contaminants in the environment.

For instance, the toxicology, occurrence, and environmental fate of current alternatives to long-chain perfluoroalkyl acids, ether-PFAS for instance, remain incompletely characterized and limited. Among these, F-53B is suggested to have similar acute toxicity as that of PFOS⁵. F-53B component 6:2 chlorinated poly-fluoroalkyl ether sulfonate (6:2 Cl-PFESA) has also attracted attention since 2013 when the 1st report on its persistence, toxicity, and environmental occurrence was published⁶.

Recommendation 6:

⁵ S. Wang, J. Huang, Y. Yang, Y. Hui, Y. Ge, T. Larssen, G. Yu, S. Deng, B. Wang, C. Harman, First report of a Chinese PFOS alternative overlooked for 30 years: its toxicity, persistence, and presence in the environment, Environ. Sci. Technol. 47 (2013) 10163–10170.

⁶ Ibid, ref. 2

That F-53B (CI-PFAES) and related compounds (Class 6)⁷ for which standard analytical methods exist at the time of sampling, be added to the list of PFAS to be monitored.

Furthermore, a recent investigation⁸ of five USA landfill leachates as a source of trace organic pollutants have shown that contaminants such as DEET (insect repellent) were found in the highest concentrations (60,000 ng/L), along with brominated flame retardants (up to 39,000 ng/L) and anticonvulsant drug Carbamazepine (165 ng/L).

Recommendation 7:

That DEET, flame retardants (such as polybrominated diphenyl ethers (PBDEs)) and Carbamazepine be added to the list of trace organic pollutants to be monitored. Standardized commercially available methods exist for these substances.

3.4. Leachate Treatment Pilot Study – Technology selection process

Although there is no doubt that the report “Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill”, dated October 11, 2019 report provided a thorough evaluation of commercially available PFAS treatment technologies, other new and promising technologies have since emerged, as described in the C&EC Review of Conceptual Leachate Treatment Scoping Study Report⁹. For example, an option to treat the PFAS constituents by the HTX electrocoagulation-based system¹⁰ has since become available.

Moreover, a 2021 review on pharmaceuticals removal from waters by membrane filtration combined with ultrasound systems¹¹ shows an increased degradation efficiency of numerous pharmaceutical compounds in wastewaters.

Although it is understood that PFAS removal efficiency is of quintessential importance in the current draft permit context, health and environmental concerns with landfill leachate containing pollutants are by no means limited to PFAS. It would seem best advised to us not to focus solely on PFAS removal to decide which technology or combination of technologies should be implemented by the Permittee.

Consequently, we strongly believe that technologies referred to in Section 5a of Draft Permit shall not be limited to those identified in the October 11, 2019 report and should provide treatment

⁷ Analysis of F-53B, Gen-X, ADONA, and emerging Fluoroalkylether substances in environmental and biomonitoring samples: A review, G. Munoz et al, Trends in Environmental Analytical Chemistry 23 (2019) e00066

⁸ Investigating landfill leachate as a source of trace organic pollutant, B O. Clarke et al, Chemosphere 127 (2015), 269-275

⁹ Review of Conceptual Leachate Treatment Scoping Study, Civil & Environmental Consultants, Inc., CEC Proj 300-854, June 2020

¹⁰ HTX Solutions Produces Groundbreaking Results and Solves Major Challenges in PFCs Treatment and Landfill Leachate By Taking Contaminants to Non-Detectable Levels, HTX Solutions, Jan 2019

¹¹ A review on pharmaceuticals removal from waters by single and combined biological, membrane filtration and ultrasound systems, P. Alfonso-Muniozguren et al, Ultrasonics Sonochemistry, <https://doi.org/10.1016/j.ultsonch.2021.105656>

capacities and pollutant removal efficiency equivalent or superior to those identified in the abovementioned report.

3.5. Leachate Treatment Pilot Study – Other areas of concern

While Section 5 of Draft Pretreatment Discharge Permit refers to the treatment of Emerging Contaminants that primarily focusses on PFAS, we welcome provisions by the *Department of Environmental Conservation* to potentially include other emerging pollutants. We have suggested a few in Section 3.3.7 above. However, it should be noted that the Technologies referred to in Section 5a (Leachate Pilot Study) have primarily been evaluated to treat PFAS.

Therefore, we would like the discussion mentioned in section 5.a.ii (page 8) of the draft pretreatment permit to include how forward-looking towards other contaminants of emerging concerns the *Leachate Treatment Pilot Study Plan* can be and its anticipated capacity of removing them.

In addition, it is well known that pilot plants are pre-commercial systems that employ new technologies designed to be used at a fraction of full-scale capacity, mainly to learn about those new technologies. In practice, the Leachate Treatment Pilot Study should enable the Permittee and the *Department of Environmental Conservation* to gather technical information about the potential, advantages and limitations of chosen treatment technologies. However, pilot plant scale-up steps to full-scale capacity will undoubtedly lead to numerous challenges (eg. non-linear scale-up reactions, choice of equipment, materials, etc) and the NEWSVT, NCES and CV landfill will be generating a certain volume of raw landfill leachate. What fraction of full-scale treatment plant requirements will be deemed acceptable by the *Department of Environmental Conservation*?

3.6. Leachate treatment and disposal ban in Memphremagog watershed

Although we welcome the decision to withdraw the Newport WWTF permit, we remain concerned about this eventuality. As discussed below, we question the leachate mass balance and fear that the permit presently under consultation could be amended. It is a serious concern to us that the draft pretreatment permit leaves the possibility of reallocating leachate discharges at the Newport WWTF before the end of the proposed final report of the pilot study as detailed in section 5 e. of the draft pretreatment permit.

We are also concerned that the leachate treatment pilot study plan described in section 5a would be considered as an opportunity to amend the permit and could reallow treatment at the Newport WWTF based on the fact that it would **seek** to demonstrate that the risk to the Lake Memphremagog water quality (drinking water supply) will not be “unduly adverse”.

We agree with the aim of the pilot studies and progress reports detailed in the draft pretreatment permit as a way to gather further information about the treatment of contaminants of emerging concern. These will allow all parties to have a better understanding of the risks associated with PFAS and other contaminants. However, we are looking for a convincing demonstration of leachate contaminant removal capacity.

As long as this demonstration is not completed, we remain in favour of the ban on leachate treatment and ask what legal tool can guarantee that leachate treatment will not be undertaken in the Memphremagog watershed unless these conditions are met. Only *seeking* to demonstrate that the risk to lake Memphremagog water quality will not be unduly adverse is not sufficient for us. We would need proof, which will include long-term effects, bioaccumulation and new contaminants, to be made before treatment acceptability in the watershed could be considered.

4. Conclusion

For many years now, the Coventry landfill located right at the head of the lake has been a source of concern for politicians and citizens that gather to ensure the protection of this natural treasure, a source of drinking water for 175,000 Canadians.

We recognize that ANR aims to be a good steward of environmental resources by being proactive towards contaminants of emerging concerns. Using the pretreatment permit as a tool to collect more information, ask for new environmental conditions and request the establishment of a pilot project for the treatment of PFAS. We agree with the essence of the Draft Permit and we are thankful to have this opportunity to comment on the draft pretreatment permit. In the past, ANR considered our comments to influence the outcome of projects. We gladly feel heard and we will continue to work in collaboration with Vermont.

From: Polaczyk, Amy
Sent: Monday, November 8, 2021 9:27 PM
To: ANR - WSMD Wastewater
Cc: LaFlamme, Pete; Giannetti, Nick
Subject: FW: Application & Public Notice 3-1406 NEWSVT

FYI

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: Ed Stanak <stanakvt@gmail.com>
Sent: Monday, November 8, 2021 8:55 AM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Application & Public Notice 3-1406 NEWSVT

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning -

I sent via US mail on November 4th a written version of the comments I had provided at the Department's public meeting on October 28th.

I'm "old school" and still see some value in "hard copies" of documents but had still planned to file the same comments electronically today in order to comply with the deadline in the September notice for the draft NEWSVT pretreatment discharge permit.

And then on November 5th I learned that the Department had extended the deadline until November 24th.

I have a request for the consideration of the Department in light of the extended deadline.

It is my understanding that the Department plans to post all comments received on one or more of the Department's publicly accessible platforms.

I had assumed that all such comments would be posted simultaneously after receipt by 4:30pm today.

I request that the Department embargo all comments received by today until the November 24th deadline and then post all comments after November 24th.

As I noted on October 28th, I come from an administrative law background grounded in work as an Act 250 district coordinator. A fundamental aspect of that administrative practice is adherence to due process.

I acknowledge that the Department's permitting process is different from the Act 250 process in that the latter is premised on "contested case" procedures.

For example, at the completion of an Act 250 application review for contested cases, parties are often provided an opportunity to file proposed findings of fact and conclusions of law. The sequence is usually a filing date for initial findings and conclusions followed by a date for the filing of rebuttals and, sometimes, an opportunity to provide succinct responses to rebuttals.

With that as background for my perspective, and recognizing that the Department's review of the NEWSVT application is not strictly a "contested case" proceeding, here is my concern: that any comments posted by the Department between now and November 23rd can be viewed by others who can then frame their comments as, in effect, rebuttals to the content of the earlier filed comments. Those of us who timely filed comments would not, in turn, be able to file responses to the comments filed under the extended deadline.

I suppose it boils down to a consideration of fair play as perceived by the public.

Thank you for your consideration of these concerns. Perhaps they are an over reaction in that maybe the Department had already decided not to post any comments received until after the November 24th deadline.

I will file an electronic version of my comments on or before November 24th.

Ed Stanak
802-479-1931

From: Polaczyk, Amy
Sent: Monday, November 8, 2021 10:49 AM
To: ANR - WSMD Wastewater
Subject: FW: Comment on Permit #3-1406 wastewater Pretreatment Discharge PIN:WY06-0020) New England Waste Services (NEWS)
Attachments: Permit #3-1406,WastewaterComment_2021.11.02.pdf

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
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From: Al Belluche <albelluche@gmail.com>
Sent: Monday, November 8, 2021 10:43 AM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Comment on Permit #3-1406 wastewater Pretreatment Discharge PIN:WY06-0020) New England Waste Services (NEWS)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Mr. LaFlamme and Ms. Polaczyk,
Thank you for your work on behalf of residents of Vermont that you and the team do at the Agency of Natural Resources.

I am attaching a letter from the Social Justice Committee of the Cathedral Church of St. Paul in Burlington, Vermont. While the attached letter has more details, We are urging ANR to:

- 1) determine all toxins in the leachate and develop standards,
- 2) require technology to separate PFAS and other toxins from leachate, to reach zero-discharge methods,
- 3) use alternative energy for leachate distillation methods,
- 4) exclude waste and toxic leachate from Bethlehem NH,
- 5) work toward closure and restoration of the Coventry site.

We realize that this is a complex issue. We support the expenditure of funds to prevent contamination of waters for generations to come.

Thank you very much.

Al Belluche (he/him)
Burlington, Vermont
albelluche@gmail.com
Cell 802-881-9215

THE Cathedral 
Church OF St. Paul
LOVING | EXPLORING | SERVING
Jubilee Social Justice Committee

Julie Moore, Secretary
Agency of Natural Resources
Montpelier, VT 05620 (by email)

November 4, 2021

RE: Permit #3-1406; Wastewater Pretreatment Discharge (PIN:WY06-0020) New England Waste Services (NEWS).

Dear Ms. Moore:

It is with deep concern that we as Vermont citizens comment on this Permit Application to discharge toxic leachate from Casella's NEWS facilities in Bethlehem NH, Coventry VT and East Montpelier into the Montpelier wastewater treatment facility (WWTF), into the Winooski River and Lake Champlain Basin.

As people of faith, we center our lives in a loving God who desires justice and care for all Creation, and calls us into covenant to care for it and for the whole human family, and to work for justice in the pursuit of the common good.

We acknowledge the sad record of White settlers taking land, culture and life from First Peoples and despoiling land and waters. Native People urge us to change our polluting ways, live in cooperation with the Earth and repair relationships with people and the Creation.

We must turn away from the outdated and destructive paradigm in which we expect waters to dilute man-made toxins regardless of the serious consequences.

We oppose Permit #3-1406 and urge you to withdraw it on several grounds:

- > it surrenders authority belonging to the State to a for-profit corporation for control and management of toxic waste including PFAS;
- > it continues the policy of dilution, a dangerous policy of discharging persistent toxins to waters of the State, threatening life and health of all in a wide area;
- > it allows and encourages import of toxic waste from urban and industrial areas of New England to Vermont, endangering people in the Lake Memphramagog and Lake Champlain watersheds, including Canadians;
- > it allows increased releases of toxic, persistent, bioaccumulating PFAS into waters of the State, including Lake Champlain, before appropriate technology is adopted to remove them from leachate;
- > it reinforces an outmoded, unjust and increasingly dangerous mode of waste management.

We urge ANR to 1) determine all toxins in the leachate and develop standards, 2) require technology to separate PFAS and other toxins from leachate, to reach zero-discharge methods, 3) use alternative energy for leachate distillation methods, 4) exclude waste and toxic leachate from Bethlehem NH, 5) work toward closure and restoration of the Coventry site. We support the expenditure of funds to prevent contamination of waters for generations to come.

Thank you for considering our comments. Please listen to the wisdom of the people of Vermont regarding this permit.

Sincerely,

Miriam Burns

Miriam Burns
Co-Chair, Jubilee Justice Committee of The Cathedral Church of St. Paul

From: Polaczyk, Amy
Sent: Monday, November 8, 2021 8:26 AM
To: ANR - WSMD Wastewater
Subject: FW: Comments of Discharge Permit Public Notice Number 3-1406
Attachments: ANR letter.pdf

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: Redmond, Bryan <Bryan.Redmond@vermont.gov>
Sent: Monday, November 8, 2021 7:15 AM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Cc: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Subject: FW: Comments of Discharge Permit Public Notice Number 3-1406

Hi Amy, I hope you enjoyed the weekend. See below and attached regarding Montpelier's discharge permit.

From: Dan Boomhower <dboom@sover.net>
Sent: Friday, November 5, 2021 7:03 PM
To: Redmond, Bryan <Bryan.Redmond@vermont.gov>
Subject: Comments of Discharge Permit Public Notice Number 3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Bryan,
We are trying to respond regarding the Montpelier Waste Water Permit with Cassella. Please forward this on to whom it may concern.
Thank You.
Dan Boomhower

To: Vermont Agency of Natural Resources

From: Dan Boomhower, Roberta Tracy

November 5, 2021

Re: Draft Pretreatment Discharge Permit, Public Notice Number 3-1406

We are very concerned that this discharge permit will result in more PFAS being released into the Montpelier Waste Water Treatment Facility [WWTF] which in turn will pollute the Winooski River. The Waste Water Treatment Facility in Essex Vermont has refused leachate because it dumps into the Winooski River. The Winooski River empties into Lake Champlain, the source of drinking water for thousands of people. If Newport can no longer accept leachate because PFAS are showing up in the drinking water of Canadians 30 miles away, why would an increase in leachate from the Montpelier WWTF be any different?

PFAS and other forever chemicals are not extractable from a water supply or river. It makes more sense to put infrastructure in place to take the forever chemicals out of the leachate before it goes through ANY Waste Water Treatment Facility. I encourage ANR to develop a facility that is state run to extract and incarcerate the forever chemicals so that several WWTF's can then treat the leachate. Whether this facility uses a combination of federal, state and private funds, whether it is state or

privately run is a secondary consideration. What is important is there be continual monitoring of the facility by the state of Vermont.

If there is going to be a pilot study for any WWTF to continue to take on leachate in its current form, money needs to be put in escrow to pay for any property, environmental and human health damages that may occur during the study.

On page 7 of PERMIT No.3-1406, a Leachate Treatment Scoping Study is referenced. "The permittee shall advance this work by conducting a pilot study of leachate treatment or pretreatment technology to determine the design conditions of a system for full-scale implementation." Why even consider treatment technology that could imperil our natural resources when the best effort should be on pretreatment? PFAS are forever chemicals and need to be taken out BEFORE the leachate is in anyway released into a WWTF. The Montpelier WWTF is expensive enough for us to maintain. To think that we would have to pay more taxes to upgrade it to become a safer, larger leachate facility is a huge burden. It also holds that if it polluted downstream, we could become liable.

The permit goes on to say the secretary "MAY establish effluent limitations and or require treatment for other pollutants." The language of the permit is purposely very circuitous and indirect. We know that PFAS cause cancer and are forever chemicals. If the study and therefore the permit are going to be issued, the language and consequences must be direct. The secretary must take direct responsibility and be willing to stop the destruction of our natural resources and pay for it. Remediation with a forever chemical is not possible.

The state needs to provide more monitoring of the current impact of the 24,000 gallons of leachate being dumped into the Montpelier WWTF and the 4,000 manmade chemicals that are called PFAS before granting any increase with or without a study component.

This permit and subsequent study mention "no later than four months following the effective date of the permit the Permittee shall submit a Leachate Treatment Pilot Study Plan." [I A. Leachate Treatment Pilot Study] With Montpelier, Essex and other WWTF's having dumped leachate into their systems for a long time, this study regarding the impact of leachate and how to treat them is simply a way to push actual development of a treatment facility further down the calendar. It is just another kick of the can.

In Montpelier, Casella has been dumping 24,000 gallons per day into our waste water system for some time. The plan needs to be submitted BEFORE the permit is granted to increase the amount of leachate to 60,000 gallons. The timeline of the permit gives the Permittee a year to install treatment or pretreatment technology. Please limit the amount of time, insist on pretreatment and find a way to encapsulate the PFAS forever in a safe way. Vermont cannot be the first state to have this problem.

With hundred year floods becoming the norm and other aspects of global climate change affecting us, it is certain that our WWTF will be stressed in ways we can barely imagine. In section [2, Noncompliance Notification]; there is plenty of language about notifying the secretary and reference to 10 V.S.A. Chapter 159, but with the impact of flooding and "discharges that could cause interference, upset or damage.." is Chapter 159 strong enough? We are talking about substances that will forever pollute our environment. I suggest that the state hold money in escrow from the company doing the dumping of leachates for possible remediation and that there is a trust fund to deal with the destruction of our most important water resources. Think about where would Vermont get its water.... perhaps Flint Michigan?

This permit is about catching the horse after it is miles away or trying to fix a problem once it has polluted miles of river, lake and water supplies. Please focus on pretreatment, get the PFAS out of the system before they even get near it. Please make the permit have severe consequences and keep us safe. There are plenty of places in the world that are no longer habitable because the permits were too lax.

Thank You.

Dan Boomhower, Roberta Tracy

8 Kent Street, Montpelier, Vt.

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November 5, 2021
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Thank You.

Dan Boomhower, Roberta Tracy
8 Kent Street, Montpelier, Vt.

From: Polaczyk, Amy
Sent: Monday, November 8, 2021 8:24 PM
To: ANR - WSMD Wastewater
Subject: FW: Leachate

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: William Blanton <william@realpowerllc.com>
Sent: Monday, November 8, 2021 5:02 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ms. Polaczyk,

I just read the article the VT Digger has published on the leachate issue with the Coventry landfill. I am seeing more and more of these articles as wastewater treatment plants are beginning to turn away leachate because of PFAS. Real Power Solutions was developed out of our sister company, G2 Energy, as a way to use the waste heat from our landfill gas to energy power generators. We use the leachate to cool the generators, and in turn, evaporate the leachate. During the development of our new patented design, we discovered we can concentrate and remove PFAS from the leachate stream. We now have the capability to sequester the leachate to the landfill and keep it out of the water stream.

I think this would be of interest to you and your staff along with the landfill managers. Would it be possible to set up a zoom meeting and I can introduce the RPS team our capabilities?

Thank you,

William C. Blanton
Real Power Solutions, LLC
875 W McGregor Ct, Suite 150
Boise, ID 83705
(208) 991-5990 Office
(530) 383-1835 Cell
william@realpowerllc.com
<https://realpowersolutions.com>



**REAL POWER
SOLUTIONS, LLC**

From: DUMP LLC <documents4dump@gmail.com>
Sent: Monday, November 8, 2021 7:03 AM
To: ANR - WSMD Wastewater
Subject: Testing email address

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

This is a test. Please disregard.

From: Effie Brown <effiebrown77@yahoo.com>
Sent: Monday, November 8, 2021 2:20 PM
To: ANR - WSMD Wastewater
Subject: Public written comment on Draft Permit # 3-1406
Attachments: Written Comments to Secretary Moore.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Public Comment to Draft Permit No. 3-1406

November 2nd, 2021

Governor Scott,
Secretary Moore, and Staff,

Draft Permit No. 3-1406 contains two very different proposals. The issue of a “pilot project” proposed by ANR/ Casella, NEWSVT, has NO place in the 2016 renewal application for the Pretreatment Discharge Permit needed for Montpelier’s WWTF to continue to accept leachate. The “pilot project” to scrub toxic chemicals from leachate, is a whole new endeavor and as yet, not successfully done in any other part of the United States. Shame is on you for giving support, looking away, lack of oversight and approving the permit for the expansion of this landfill, and now attempting to slide this” pilot project” into a renewal permit for a WWTF in Montpelier.

Consideration for our families and our neighbors to the north as well, needs to be top priority. Any plan of this magnitude needs a separate permit and to include evidence based research, proven effective to scrub leachate of toxins. It is not only the class of 9,000+ PFAs chemicals, but also any CEC’s(chemicals of emerging concern) now NOT identified, but also those identified toxic chemicals, toxic to humans, wildlife, plants, poisoning our water, soil and our air. You have these jobs because you have scientific backgrounds and you all know better than to poison our Watershed, Wetlands, Rivers and Lakes. We will not allow this pilot project to be placed on a drinking water source for our neighbors or ourselves. We have seen firsthand how ANR accepts modifications and amendments to permits! Stop this project now! The risk is way too high for this to be acceptable in the Memphremagog Watershed by a company beholden to its shareholders. NO LEACHATE EVER, ANYWHERE IN THE MEMPHREMAGOG WATERSHED.

The ANR sanctioned the last expansion permit for the added 50+ acres of the landfill, further contaminating our environment and endangering lives as well as the many acres of wetlands, and the South Bay Wildlife Management Area, surrounding the already Mega-Dump that will be here for as long as my Children and Grandchildren who live here exist. This Governor and his Appointees have built a Superfund Site. I remember reading an article, Secretary Moore, that you wrote and how valuable our wetlands are, except I suppose these wetlands in the Memphremagog watershed. My question is this: Do you value the lives of the people in the Memphremagog Watershed and our Canadian neighbors, or do you value the funds more, that John Casella, scatters around in order to “buy” the way forward for his shareholders? Please, with some honesty, integrity and transparency, find the right answer. Pete Laflamme said all questions would be answered.

We have taken more than our share of garbage, plus 10 years of leachate in this Lake! Enough is enough!

I am born and raised here in the town of Derby on a dairy farm and owned a dairy farm (now part of

Eagle Point Wildlife Management Area) have lived on both sides of Lake Memphremagog, have owned six properties either on or within sight of this Lake. I have spent hours swimming, fishing and boating in the Lake. My children have chosen to live here as have my grandchildren. Average income here may be in the \$30,000 – 35,000 range if it's that high, half what it is in Chittenden or Washington County. Our tourist industry is a huge part of our economy. We cannot afford to further contaminate our natural resources and survive. No amount of money trumps the value of our Lake Memphremagog and Clean Water for all.

Elfrieda M. Brown



Virus-free. www.avg.com

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November 2nd, 2021

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Elfrieda M. Brown

From: KC Whiteley <kcwhiteley@yahoo.com>
Sent: Monday, November 8, 2021 11:03 AM
To: ANR - WSMD Wastewater
Subject: Fw: Submitting Comments for permit 3-1406
Attachments: Comments on ANR Draft Permit.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

----- Forwarded Message -----

From: KC Whiteley <kcwhiteley@yahoo.com>
To: Polaczyk, Amy <amy.polaczyk@vermont.gov>
Cc: ANR - WSMD Wastewater <anr.wsmdwastewater@vermont.gov>
Sent: Monday, November 8, 2021, 11:02:22 AM EST
Subject: Submitting Comments for permit 3-1406

Dear Amy,

Thank you for helping with this challenge to submit comments for ANR's Draft Pretreatment Discharge Permit.

My comments are attached.

Sincerely,
Katharine Whiteley
Montpelier, VT

On Friday, November 5, 2021, 10:16:06 AM EDT, Polaczyk, Amy <amy.polaczyk@vermont.gov> wrote:

Hello KC,

I recognized your name and was lucky enough to have your email address come up in my outlook search. Apologies that the contact phone number in the permit wasn't when it changed earlier in the pandemic. If you would like to submit your comments by replying all to this email, the comments will come to me and should also go to the general email box where we receive comments on wastewater permits. I'll also follow-up with a phone call if this doesn't reach you. The comment period has been extended for a few weeks so you'll have until November 24th to submit comments.

Best regards,

Amy



Amy L. Polaczyk, PhD | Program Manager (she/her)

Vermont Department of Environmental Conservation

Watershed Management Division, Wastewater Management Program

Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522

802-490-6185 (cell)

<https://dec.vermont.gov/watershed/wastewater>

PRETREATMENT DISCHARGE PERMIT

PERMIT NO: 3-1406

PIN: WY06-0020

Public Comment from:

Katharine Whiteley
25 St. Paul Street
Montpelier, VT 05602

1) ANR has not developed water quality standards for PFAS. Issuing a permit that increases the number of gallons of leachate discharged into the Winooski, despite requirements for testing, does not help us learn anything about the impact of PFAS if there are no water quality standards.

2) ANR has not developed regulations or performance standards specific to leachate pretreatment technology that would govern the pilot project. Leachate pretreatment technology is in its early stages, many of the designs currently being studied are “speculative” and data to verify the most effective and safe technologies are not yet available.

3) The Permit cedes State/ANR authority and responsibility to Casella/NEWSVT to select the technology, the pilot project siting, monitor the safety of day-to-day operations, ensure the safe handling and removal of by products and safeguard the public health and environment.

There are no regulations from ANR to govern and oversee this process, thus handing over the State’s responsibility to the permittee.

4) There needs to be a Vermont State plan for the disposal of our solid waste. Instead, the Permit leaves responsibility for managing Vermont’s (and I should add, other states, like NH) solid waste to a for-profit company that makes millions of dollars on managing that waste with no legitimate authority. The permittee therefore becomes responsible for Vermont’s public and environmental health.

The state/ANR needs to take responsibility for solid waste just as it does for other utilities that serve the public.

5) Why is Vermont/Casella profiting from taking out of state waste?

6) Under no circumstances should the experimental pretreatment pilot project be located at the current landfill in the Memphremagog watershed or in any watershed. An alternative, geologically appropriate site should be identified.

7) The Pilot Project for Pretreatment should be treated as a **separate permit** than what is specific to Montpelier. These are unrelated and should have **separate approval processes**.

8) What are the legal implications for Vermont's responsibility to our Canadian neighbors where PFAS (coming from the U.S.) have been detected in their drinking water supply?

9) The Conservation Law Foundation staff attorney determined that **too much decision making authority is given to Casella** in the Draft Permit. ANR should set the goals, regulations and standards and the permittee (Casella/NEWSVT) should meet them. As a commenter at the Newport Public Hearing said, "this is the tail wagging the dog."

10) It is ANR's responsibility: **To preserve, enhance, restore and conserve Vermont's natural resources, and protect human health as it relates to the larger environment.** Through its programs, the DEC manages water and air quality, regulates solid and hazardous wastes, and administers a number of pollution and waste reduction programs." This is not Casella's responsibility. **The state should be in control of this process, not Casella.**

11) The Permit contains a list of pollutants that are 40 years old. 101 of the 190 chemical compounds found in leachate are not in this permit. ANR needs to do the research and **establish our own standards** just as we did when PFAS were found in the Bennington drinking water. Asking the company generating the leachate to determine the standards and rules is simply wrong.

12) The **permit time is unrealistically short and not achievable.** It states in Special Conditions 5 b. *"By no later than one year following the effective date of this permit, the Permittee shall have the leachate treatment and/or pretreatment technology installed and begin the pilot study in accordance with the approved Plan."* One year to research and select the technology (none of which are proven), select the siting, building, develop the systems for monitoring and testing? Doubtful if not impossible and if it were, would it be in the public interest to rush all these components?

These are a few of many points that can and should be made to hold the many shortcomings of this Draft Permit process up to the light of public and governmental scrutiny.

This permit should not be approved as currently written.

From: KC Whiteley <kcwhiteley@yahoo.com>
Sent: Monday, November 8, 2021 11:02 AM
To: Polaczyk, Amy
Cc: ANR - WSMD Wastewater
Subject: Submitting Comments for permit 3-1406
Attachments: Comments on ANR Draft Permit.docx

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Amy



Amy L. Polaczyk, PhD | Program Manager (she/her)

Vermont Department of Environmental Conservation

Watershed Management Division, Wastewater Management Program

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<https://dec.vermont.gov/watershed/wastewater>

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Montpelier, VT 05602

1) ANR has not developed water quality standards for PFAS. Issuing a permit that increases the number of gallons of leachate discharged into the Winooski, despite requirements for testing, does not help us learn anything about the impact of PFAS if there are no water quality standards.

2) ANR has not developed regulations or performance standards specific to leachate pretreatment technology that would govern the pilot project. Leachate pretreatment technology is in its early stages, many of the designs currently being studied are “speculative” and data to verify the most effective and safe technologies are not yet available.

3) The Permit cedes State/ANR authority and responsibility to Casella/NEWSVT to select the technology, the pilot project siting, monitor the safety of day-to-day operations, ensure the safe handling and removal of by products and safeguard the public health and environment.

There are no regulations from ANR to govern and oversee this process, thus handing over the State’s responsibility to the permittee.

4) There needs to be a Vermont State plan for the disposal of our solid waste. Instead, the Permit leaves responsibility for managing Vermont’s (and I should add, other states, like NH) solid waste to a for-profit company that makes millions of dollars on managing that waste with no legitimate authority. The permittee therefore becomes responsible for Vermont’s public and environmental health.

The state/ANR needs to take responsibility for solid waste just as it does for other utilities that serve the public.

5) Why is Vermont/Casella profiting from taking out of state waste?

6) Under no circumstances should the experimental pretreatment pilot project be located at the current landfill in the Memphremagog watershed or in any watershed. An alternative, geologically appropriate site should be identified.

7) The Pilot Project for Pretreatment should be treated as a **separate permit** than what is specific to Montpelier. These are unrelated and should have **separate approval processes**.

8) What are the legal implications for Vermont's responsibility to our Canadian neighbors where PFAS (coming from the U.S.) have been detected in their drinking water supply?

9) The Conservation Law Foundation staff attorney determined that **too much decision making authority is given to Casella** in the Draft Permit. ANR should set the goals, regulations and standards and the permittee (Casella/NEWSVT) should meet them. As a commenter at the Newport Public Hearing said, "this is the tail wagging the dog."

10) It is ANR's responsibility: **To preserve, enhance, restore and conserve Vermont's natural resources, and protect human health as it relates to the larger environment.** Through its programs, the DEC manages water and air quality, regulates solid and hazardous wastes, and administers a number of pollution and waste reduction programs." This is not Casella's responsibility. **The state should be in control of this process, not Casella.**

11) The Permit contains a list of pollutants that are 40 years old. 101 of the 190 chemical compounds found in leachate are not in this permit. ANR needs to do the research and **establish our own standards** just as we did when PFAS were found in the Bennington drinking water. Asking the company generating the leachate to determine the standards and rules is simply wrong.

12) The **permit time is unrealistically short and not achievable.** It states in Special Conditions 5 b. *"By no later than one year following the effective date of this permit, the Permittee shall have the leachate treatment and/or pretreatment technology installed and begin the pilot study in accordance with the approved Plan."* One year to research and select the technology (none of which are proven), select the siting, building, develop the systems for monitoring and testing? Doubtful if not impossible and if it were, would it be in the public interest to rush all these components?

These are a few of many points that can and should be made to hold the many shortcomings of this Draft Permit process up to the light of public and governmental scrutiny.

This permit should not be approved as currently written.

From: Don McDowell <mcdgarp@gmail.com>
Sent: Monday, November 8, 2021 8:45 AM
To: ANR - WSMD Wastewater
Subject: Permit #3-1406
Attachments: LetterANR-Pretreatment Permit.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

Please find attached a letter expressing thoughts regarding permit #3-1406.

Thank-you

Don McDowell

November 7, 2021
Morristown, VT 05661

To whom it may concern,

Re: Draft Permit #3-1406 New England Waste Services, Inc.

In September of 2016 my wife and I purchased a very small property on the shore of Lake Memphremagog in the Town of Newport. The property still draws water from the lake for bathing and washing as is and has been tradition in Vermont forever. After many decades (50+ years) of visiting, recreating upon and thoroughly enjoying the lake it seemed time to become more permanent residents of the lake. At the time we were aware of a possible extension of the Casella owned landfill in Coventry, Vermont. However, it seemed, naively of course, there was no way the Agency of Natural Resources (ANR), Department of Environmental Conservation (DEC) or any other State Agency/Department would actually support an extension to using the landfill after so many years of burying Vermont's solid waste adjacent to Lake Memphremagog.

Sadly, I (we) couldn't have been any more wrong. The public outcry from Orleans County was not heard in Montpelier and the permit was granted. Now ANR is considering another permit, for a pre-treatment facility (its location unknown) to treat leachate originating in Coventry, to treat leachate from elsewhere in Vermont and to treat leachate from other states (!), the latter truly unbelievable. A sensible, environmentally aware and scientifically literate person would suggest there is no way the ANR, DEC or any other State Agency/Department would grant such a permit especially within the Lake Memphremagog watershed. I was naïve and wrong once, but not twice. I cannot just leave it to the employees of ANR and DEC to do the right thing when it has not happened in the past.

It seems only reasonable to invoke the Precautionary Principle. Afterall, it is simply common sense. We all learned this environmental principle early in our training as stewards of the land and water truly interested in protecting the environment (which I do believe is the mission of ANR and DEC?). There are problems now with the Casella owned landfill in Coventry. Going forward the problems are only going to get worse for Lake Memphremagog. Leaks will occur in the membrane enclosing the landfill for sure, leachate will end up entering the lake untreated for sure and now the thought of a pre-treatment facility in Coventry, and/or the remains of a pre-treatment facility coming back to Coventry is really quite unthinkable if protecting the lake is what ANR and DEC officials have in mind. The toxic chemicals being accumulated and concentrated in Coventry are not going away. And surely they will not remain enclosed in the landfill forever. They will instead, enter the Lake Memphremagog watershed and remain there for a long time to come.

Clearly it is time to stop the transport and burial of Vermont's solid waste in Coventry. Clearly it is time to have a permanent moratorium on leachate ever entering the Lake

Memphremagog watershed again. Clearly it is time for another area of the state to take the burden of this pre-treatment facility. In fact, clearly, it is time to close the Coventry landfill and establish regional facilities around the state. Only then will the citizens of Vermont take solid waste and the issues surrounding it seriously. Right now, solid waste is out of sight and out of mind for Vermonters. The very extreme majority of Vermonters have no idea where their solid waste goes, let alone understand that it is buried on the shores of one of the most beautiful bodies of water in the state which also serves as the drinking water for 170,000 citizens of a neighboring country. My cynical side wonders if this wasn't the plan from the beginning. Send all our solid waste as far from where Vermonters live as possible, right next to another country where the waters flow north. Hopefully, this wasn't the thinking of those who created the situation we are discussing today.

There are so many unanswered questions in this permit application. Where will the pre-treatment pilot facility be? Where will the waste from the pre-treatment facility go? What chemicals will not be removed? Where will they go? How will they be treated? The time has come to stop taking advantage of the Lake Memphremagog watershed. She has already paid enough. Her burden will take generations to clean up even if we stop depositing solid waste in Coventry now. Generations to come will need to clean up the environmental mess we have created in Coventry on the shores of the lake. How much worse do we really want to make it?

Sincerely,

Don McDowell
mcdgarp@gmail.com
802.371.8748

From: S.Christopher Jacobs <seajuay6116@gmail.com>
Sent: Monday, November 8, 2021 4:50 PM
To: ANR - WSMD Wastewater; Henry Coe

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please accept my comments on the Wastewater Permit. I have many comments I would like to submit concerning this intended permit.

First and foremost it is clear that ANR is, in fact, requesting two permits, and as such there should be separate hearings and separate decisions for separate issues.

The permit for Pretreatment Discharge is fairly straight forward.

Although you have clumped dealing with the leachate part of the same permit, it is far from it. The siting of a leachate test facility, testing of any/all leachate removal systems, and the proposal to build a full-fledged facility at sites unknown is very disingenuous of ANR. Additionally the time frame is totally unrealistic. Determining the best system can only be done in four months, if it has already been done, it should probably take a year to be valid. Then to build a facility in the 8 months you propose is unrealistic, particularly with so many goods held up at unloading facilities

Such a plant and testing can not and must not be done in the Memphremagog watershed. Memphremagog is and continues to be a drinking reservoir for 175,000 Caanadians. It is unconscionable that we would think of further poisoning it. And just as no one knew PFAS and PFOS were going to be chemicals of concern, no one really knows now how the discharge of this removed chemical and hundreds of other undiscovered un-filtered chemicals into Memphremagog will evolve.

It is also totally indefensible that Casella intends to import leachate from New Hampshire. This is a toxic stew that endangers the health of all Vermonters. It is enough to deal with what Vermont generates without adding more.

If Casella's landfill wasn't right on the edge of Memphremagog, and it wasn't Canada's drinking water source, I could conceivably stomach a treatment plant in Coventry [but never treating out-of-state leachate]. BUT THE LANDFILL **IS**, RIGHT ON THE EDGE OF MEMPHRETAGOG. Any spillage or leaks [and there will be many] will no doubt go directly into Memphremagog. I also think the quantity of leachate is going to be huge, how long will 'filters" [reverse osmosis ?] last between cleaning or replacing, how long will it take to change them ...etc.

Thank you for addressing my concerns.

S Christopher Jacobs
Albany, [Vermont]

From: VALERIE DILLON <valotter@yahoo.com>
Sent: Monday, November 8, 2021 8:22 AM
To: ANR - WSMD Wastewater
Subject: Comments (C) about VT ANR draft permit #3-1406 (2021)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

TO: Vermont Agency of Natural Resources.
FROM: Valerie Dillon Newport, VT.
Subject: Comments (C) about VT ANR draft permit #3-1406 (2021)
DRAFT PRETREATMENT DISCHARGE PERMIT. SIGNIFICANT INDUSTRIAL USER. New England Waste Services, Inc.

Thank you for the opportunity to address concerns about the draft permit #3-1406.

Leachate management will be an ongoing process for the various solid waste facilities. There are many people concerned about the location of leachate pretreatment facility versus a pilot facilities for testing systems and options for upgrading WWTF will be managing the influent/effluent.

1. The pilot program to pre-treat leachate in order to eliminate the hazardous components that are not within the current realm of wastewater treatment facilities is a good start in better managing the process. The science is in the early phase of determining what other chemicals are in need of removal. There are likely to be new lessons learned and those may required additional treatment. Please consider that in the design of the facility. It is interesting that this permit limits the opportunities. **This is an evolving technological front.**

- **DP p8** *Technologies shall be limited to those identified in or provide treatment equivalent to the technologies presented in the "Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill", dated October 11, 2019.*

2. Given this is a pilot program, there may need to be adjustments to the processing as well as technologies. Recommend provisions for additional testing be a part of the plan. Including expanding sampling site/source, frequency, and pollutants (possibly emerging contaminants).

- **DP p16 A.1.** Facility Modification / Change of Discharge addresses modification potential.

There is *not* a quality control aspect to the pilot monitoring program. It appears that all sampling & testing is being handled by the permittee.

- **DP p3** *permittee effluent monitor & record quality and quantity of landfill leachate from site*

- **DP p9** *Throughout the duration of the pilot study, the Permittee shall monitor and record the quality of influent, effluent, and solids from the Montpelier WWTF in accordance with the following monitoring schedule. The Permittee shall submit monitoring results in accordance with the schedule presented in Condition I.A.5.d.*

3. What are the standards for deciding the pilot pre-treatment is successfully meeting the goals?

3.A. What are the monitoring requirements for the product of the pre-treatment?

- **DP p7 5.** Leachate treatment for emerging contaminants. The Permittee shall advance this work by conducting a pilot study of a leachate treatment or pretreatment technology to determine the design conditions of a system for full-scale implementation. The Secretary will use the results of the pilot study to establish a Technology Based Effluent Limit and/or treatment standard for PFAS in landfill leachate. The Secretary may establish effluent limitations and/or require treatment for other pollutants if the results of the pilot study and/or receiving WWTF monitoring indicate that this discharge may interfere with, or is otherwise incompatible with the proper operation of a receiving WWTF, or may pass through without treatment and cause a violation of Vermont Water Quality Standards in the receiving water.

4. The draft lists some of the existing tolerances for wastewater treatment sites. The permit contains limitations and monitoring requirements for effluent. These seem to be based on some existing performance expectations that are not consistent across waste water treatment facilities. It is understood, there needs some goals to aim for, however there are ongoing concerns about emerging contaminants. What if the EPA or State of Vermont (and another source) update water quality standards? What is the provision for adjusting the level measurement sensitivity and changing compliance criteria?

4.A Note that Montpelier WWTF NPDES permit has 2022 renewal which has the potential for adjusting water quality criteria.

- **FSp10** *“Due to the concentrations of PFAS in the Montpelier WWTF (compared to other WWTFs that do not accept leachate) **and the absence of water quality standards for PFAS**, Condition I.A.4. of the draft Pretreatment Permit requires instream water quality monitoring for PFAS at representative locations above and below the WWTF’s discharge. This monitoring is necessary for the Secretary to assess the reasonable potential of PFAS from the leachate and WWTF discharge to cause water column concentrations to reach levels that may contribute to the accumulation of PFAS in fish tissue such that it poses a potential risk to humans when consuming the fish.”*


- **FSp10** *“the Secretary reserves the right to reopen the permit to require the collection and sampling of representative fish species downstream of the WWTF discharge, and if necessary, develop site-specific water quality standards for PFAS.”*

4.B New studies are planned to better understand fish health. Of special interest are the Brown Bullhead Trout of Lake Memphremagog that have found to have lesions & tumors.

Footnote for source references.

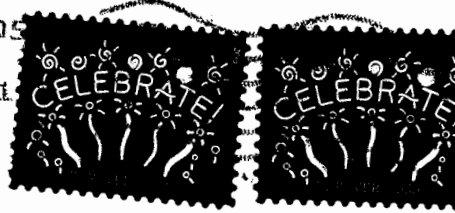
FSp# *Fact Sheet for Permit No. 3-1406 (September 2021)*

DP p# [12854-3-1406_DraftPermit.20210902](#)

 Mr Edward Stanak
58 Pleasant St
Barre, VT 05641-3429

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Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
1 National Life Drive - Davis }
Montpelier Vermont

05620-3522

Ed Stanak
58 Pleasant Street
Barre City VT
05641

802-479-1931

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MEMORANDUM

TO: Amy Polaczyk, Wastewater Program Manager
Department of Environmental Conservation
FROM: Ed Stanak
DATE: November 4, 2021
RE: Application 3-1406 New England Waste Services, Inc.
Draft Pretreatment Discharge Permit
Public Comments

This memorandum provides comments on the content of the draft pretreatment discharge permit issued by the Department on September 20, 2021. The permit proposes to authorize New England Waste Services of Vermont (NEWSVT) to dispose of a maximum of 60,000 gallons per day "max day" of leachate from the landfill situated in Coventry, Vermont, and from two other landfills, into the City of Montpelier Wastewater Treatment Facility (WWTF) for subsequent discharge into the Winooski River.

I am a resident of Barre City. I was employed by the State of Vermont for a number of years as an Act 250 district coordinator. I make use of the Winooski River watershed and Lake Champlain. I have reviewed the draft NEWSVT pretreatment permit and the related fact sheet. The following comments are provided for the consideration of the Department of Environmental Conservation and supplement the comments I provided orally at the October 28th public meeting in Montpelier.

Jurisdiction

1-Neither the fact sheet nor the draft permit state a jurisdictional basis for the issuance of the pretreatment permit to NEWSVT rather than the City of Montpelier as operator of the WWTF. By comparison, all land use permits issued under the provisions of 10 VSA Chapter 151 state the pertinent jurisdictional provisions for the authorized project. I am aware of the provisions in the United States Code and the Code of Federal Regulations allowing states to delegate pretreatment obligations to a private sector generator of pollutants rather than the operator of a WWTF. However, absent a clearly stated jurisdictional foundation in the draft permit, it is unclear if the Department has proceeded under appropriate Vermont enabling legislative and regulatory authority to delegate pretreatment obligations to NEWSVT.

2-The draft permit raises an additional jurisdictional question: on what basis does the Department authorize the disposal of leachate from the Bethlehem NH landfill in the Montpelier WWTF? I am aware of the US Supreme Court's holding in Philadelphia v New Jersey 437 US 617 (1978) and its progeny. However, there was a time when the Department (Solid Waste Division) took affirmative steps to ensure that the content of wastes imported to Vermont were of a content not injurious to the public health, safety and welfare. Are there appropriate provisions in Vermont law and Department regulations to authorize the

importation of industrial pollutants from out of state?

Flows

The information on leachate flows provided in the fact sheet and the draft permit appears to be incomplete and is confusing, at least to the average person. The result is an inadequate understanding of the quantity of pollutants to be disposed by NEWSVT in the Montpelier WWTF. Here are a few examples:

- 1- The fact sheet (at pages 3 and 4) does not provide quantities of leachate flows from the CV landfill or the Bethlehem NH landfill.
- 2- While information is provided for the Coventry landfill (at page 2 of the fact sheet), it is less than clear how those calculations match up with adjudicated findings of fact by the District 7 Environmental Commission in its 7R0841-13 decision (at page 28) wherein the Commission found that an average of 9.5 million gallons of leachate results annually from Phases I-IV.
- 3- While the draft permit sets a maximum daily effluent limit of 60,000 gallons, how does that limit jibe with the third paragraph on “flow” on page 4 of the fact sheet?

No Pretreatment and Dilution Is the Solution

1-Neither the draft permit nor the expired permit contain any findings or terms identifying any actual pretreatment of the “Non-Conventional Pollutant” content of the leachate prior to disposal in the Montpelier WWTF. Thus, the Department proposes to issue a pretreatment permit that does not require any pretreatment of the leachate. It also appears that the Discharge Permit for the City of Montpelier WWTF does not identify any pretreatment capabilities in that plant. As a result, the discharge into the Winooski River and/or the sludge byproduct from the WWTF will contain residue of the “Non-Conventional Pollutants”.

2-Some 40 years ago when I was a new state employee, I learned from Department staff that, in essence, “dilution is the solution”. In other words, the treatment provided by a typical municipal WWTF cannot remove certain categories of pollutants. In this context, the “7Q10 instream concentration” provisions of the fact sheet (pages 7 and 9) appear to reinforce the “dilution solution” principle.

Conditions Subsequent

The draft permit is laced with “conditions subsequent” which are invalid substitutes for sufficient evidentiary proof that satisfy applicable statutory and regulatory provisions prior to the issuance of a permit. Here are three examples among others found in the draft:

1-Special condition 5 on pages 7 through 12 of the permit is the prime example of such a “condition subsequent”. This condition requires the construction and operation of a “leachate treatment and/or pretreatment technology “facility, presumably at the Coventry site, by approximately December 2022. This condition is premised on standards developed by the applicant’s private consultant Brown & Caldwell in its October 2019 report. The Department

has not promulgated any applicable surface water standards for PFAs and the design of such a facility. Given the nine year long pendency of the pretreatment permit application, as stated on page one of the fact sheet, the Department could and should have undertaken appropriate rulemaking during that same time period in order to promulgate PFA standards for the applicant to then implement as part of the amendment application submittal required in special condition 5. Instead of appropriate rulemaking required under the provisions of 3 VSA Chapter 25, Subchapter 3, the Department has chosen the path of an impermissible “condition subsequent”. The net result of this approach by the Department is the privatization of environmental regulation.

2- Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Iron is another “condition subsequent” because it is based on the following finding on page 7 of the fact sheet reading : “ There is currently no Montpelier WWTF effluent data for Total Iron. Therefore, to further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Iron water quality standard, the draft permit requires ...quarterly monitoring...”

3-Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Arsenic is a third “condition subsequent” because it is based on the following finding on page 8 of the fact sheet reading : “ Insufficient data was available to determine if the discharge of Total Arsenic would exceed the Consumption of Water & Organisms Human Health Water Quality Criteria. Specifically, there is currently no influent Total Arsenic data for the Montpelier WWTF. There is also no data on the removal efficiency of Total Arsenic by the Montpelier WWTF.” The fact sheet then goes on to state “ To further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Arsenic water quality standard, the draft permit requires ...quarterly monitoring...”

Lack of Threshold Facts on PFA Strength

The draft permit has numerous conditions for testing and sampling of the waste stream. However, the fact sheet has no specific information on the PFA strength of the leachate collected at each landfill for delivery to the WWTF – although vague reference is made to the January 2020 Weston & Sampson sampling results. It would seem that the fact sheet should provide such threshold facts. The District 7 Environmental Commission decision refers to available groundwater PFA sampling at Coventry.

Inadequate Definitions

- 1- Page 2 in the permit [See I(A)(1)(b)] disallows the discharge of leachate into the Montpelier WWTF during “storm events, snow melt or when a storm event is imminent”. What are the relevant definitions for each of these terms? Who makes the decision to not accept the truckload of leachate? And where will the leachate then go? Additionally, with regard to the City’s role in accepting the leachate, what are the

NEWSVT contract terms with the City of Montpelier? What is the amount of annual revenue that the city will obtain from accepting the leachate ?

- 2- The term "pretreatment technologies" is relied upon in imposing special condition 5 yet there is no definition in any Department rules or policies of what the term means or what standards will apply.

Ensure Environmental Justice

Two of the most significant sources of solid wastes to the Coventry landfill facility are Chittenden and Washington counties. One supposes that, in a cynical analysis, there is an environmentally just outcome in that the "Non-Conventional Pollutants" from those wastes will now return to the watershed shared by those counties pursuant to the discharge from the City of Montpelier WWTF following the "nonpretreatment" (my term, not the Department's) allowed by the draft pretreatment permit. The North East Kingdom and a portion of the province of Quebec have been the environmental sacrifice zone for Vermont's solid waste disposal; Chittenden and Washington counties now join as a companion sacrifice zone. The Department should take the lead in returning the focus of the General Assembly to policies adopted over 25 years ago intended to ensure not only the reduction of the waste stream but a more equitable means of disposal. The burden cannot remain solely on the people of the North East Kingdom (and Quebec) for a indefinite period of time into the future.

In closing, I want to emphasize that I am a realist – the solid waste generated by all of us must go somewhere as must the resulting leachate. But the Department's permitting processes, and its role as the representative of the executive branch before the legislative branch, over the decades have failed to pursue -if not force- a more just or equitable system for the disposal of the solid wastes and the leachate. And I want to be very clear: I do not fault the public employees of the Department of Environmental Conservation who merely do their jobs under the direction of supervisors and executive branch appointees. Thank you.

From: Giannetti, Nick
Sent: Tuesday, November 9, 2021 8:49 AM
To: Roy, Alexandra; ANR - WSMD Wastewater
Cc: Polaczyk, Amy
Subject: RE: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

Thank you, Alexandra. We have received your comments.

Best,
Nick Giannetti



Nick Giannetti | Pretreatment Coordinator
Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6186 cell
Nick.Giannetti@Vermont.gov
<http://dec.vermont.gov/watershed/wastewater>

From: Roy, Alexandra <Alexandra.Roy@mce.gouv.qc.ca>
Sent: Monday, November 8, 2021 4:23 PM
To: ANR - WSMD Wastewater <ANR.WSMDWastewater@vermont.gov>
Cc: Giannetti, Nick <Nick.Giannetti@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,
Please find attached comments re. draft pre-treatment discharge permit 3-1406.
Regards,



Alexandra Roy
Attachée politique – Internet haute vitesse

Cabinet du premier ministre
770, rue Sherbrooke Ouest
4^e étage
Montréal (Québec) H3A 1G1

Bureau de Montréal : 514-873-3411
Bureau de Québec : 418-643-5321
Cell. : 819 212-0459
Alexandra.roy@mce.gouv.qc.ca

MISE EN GARDE CONCERNANT LES COMMUNICATIONS D'INFLUENCE – En conformité à la Loi sur la transparence et l'éthique en matière de lobbyisme, nous vous demandons, si cela n'est pas déjà fait et que vous êtes visé au sens de cette loi, de vous inscrire rapidement au registre des lobbyistes. Pour plus d'information sur la Loi : 1-866-281-4615 ou commissairelobby.qc.ca.

Ce courriel est à usage restreint. S'il ne vous est pas destiné, veuillez svp le détruire et en informer l'expéditeur.

From: Peggy Stevens <pegnericstevens@gmail.com>
Sent: Tuesday, November 9, 2021 6:31 AM
To: ANR - WSMD Wastewater
Cc: ANR - WSMD Wastewater
Subject: Public Comment to Draft Permit # 3-1406.
Attachments: My Public comments .docx

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To Whom It May Concern,

I intended to submit this on the initial due date of the 8th of November, however confusion about the change of address has delayed my submission. I do hope these comments make it through! I cc'd to two addresses; I don't mean to be voting twice. Nick Gianetti has sent an update saying all comments will be redirected to the correct email.

Peggy Stevens

November 8, 2021

Public comments for Draft Pretreatment Discharge Permit # 3-1406; PIN: WY06-0020

Submitted by Peggy Stevens

Charleston, Vermont

Before I begin to address my comments specific to the experimental pilot project for leachate pretreatment, I must say I strongly object to the attempt to roll two distinctly separate permits into one.

The first part of this draft permit is specific to renewal of the Pretreatment Discharge Permit, which is expiring and must be renewed in order for the WWTfs in Vermont- none of which are capable of filtering toxic landfill chemicals from leachate- to accept NEWSVT or other landfill leachate for disposal. In this draft permit, it states that the Montpelier WWTf alone may accept for disposal landfill leachate from NEWSVT landfills in Coventry, Vermont and Central Vermont and the Bethlehem, New Hampshire NEWSVT landfill.

There are many flaws in this section of the draft, including the fact that Montpelier's flow limit is now capped at 60,000 g/p/d, which is the daily amount of leachate generated by the Coventry landfill. This amount is predicted to increase to 100,000g/p/d as the next phase of the landfill comes into full gear. There is no amount recorded in this draft of the daily amount of leachate generated and exported for disposal by the CV landfill or the Bethlehem landfill. There is no explanation as to what will be the destination for these untold gallons of leachate from CV and Bethlehem, since Montpelier is capped at 60,000 g/p/d.

Further, there is no explanation of what Plan B is in the event Montpelier is unable, thus not permitted, to accept this leachate for disposal due to extreme weather or other events. Where will the leachate go then?

The greatest concern is raised by the idea that Vermont will accept any gallons of leachate from NH for disposal. The fact sheet states that Bethlehem leachate was only sent to Vermont a few times in the last five years. But that means nothing in terms of how much may be imported from now on into the future. And under what jurisdiction does the State allow environmental contaminants to be imported into Vermont from another state? I think a strong argument could be made based on Vermont Act 20, which seeks to limit the amount of PFAS coming into landfills in household products as solid waste to be landfilled, that the import of leachate could also be prohibited as it contains huge amounts of toxic environmental contaminants including PFAS.

(The same question can be asked, and should, as to why Vermont would allow the import of solid waste, known to contain tons of waste full of toxic environmental pollutants which end up as leachate at the bottom of the mountain of trash. That leachate generated must be collected and disposed of rather than allow the toxins to leach into ground and surface water. Some would argue that landfill liners would prevent that from happening, but the EPA itself has concluded that all landfill liners eventually leak. Also, leachate breakouts are a not uncommon occurrence, requiring landfill engineering to capture escaped leachate and redirect it to collection points.)

Since we know that the State collects a tipping fee for every ton of solid waste disposed of in Coventry, is it possible that importing tons of leachate would be regarded as an opportunity for increased revenue stream for the State of Vermont? Is increased revenue a reason to import environmental contaminants which imperil our State's natural resources? Is the cost of mitigating environmental damage, or the liability that may come from that, not justification enough to prevent the import of out-of-state waste, including leachate, to Vermont?)

There are others I am sure who will be directing attention to the first part of the permit and are more qualified to do so. So, I'll move on to what I am calling the second part of the draft permit- that regarding the experimental pilot project for leachate pretreatment:

- My many concerns about this Draft Permit boil down to the fact that the State has not provided evidence of having developed any regulations or performance standards specific to this brand-new leachate pretreatment technology. Without these regulations and standards, under what law or rule is ANR proceeding?

Without a regulatory framework requiring compliance with specific standards for leachate pretreatment, the result is what we see in this Draft- little if any obligation that the most effective, state-of-the-art technology and monitoring systems be selected and utilized and monitored for compliance. What we also see is an incremental, haphazard, “if this, then that” approach instead of a well thought out, step by logical step plan, with much of what should be regulated under the authority of the ANR delegated to the corporate interest Permittee.

Only one of many examples of this deficit, but perhaps the most important, is in the “Special Considerations” section, section 5, which I consider to be the crux of the problem with this draft permit. **P.8- 5a. in the Draft Permit** “*limits the choice of leachate pretreatment technology to those identified in the 2019 Brown and Caldwell Study*”. Does this language limit consideration of more comprehensive, effective, and perhaps expensive designs, developed since 2019? Therein, Brown and Caldwell described their treatment options as “speculative”, making “assumptions” as to effectiveness. (I worked in Federal and State agencies for 38 years. Their performance standard manuals do not allow for speculations and assumptions! They are used to guide planning, day-to-day operations, and evaluate for compliance, including justifying why choices are made to spend dollars in a specific way. Bids may be required, but the lowest bid is not understood to be the best bid. Quality assurance in meeting the goals of the grant come first. Whether or not Federal dollars may be directed to support this project, which Secretary Moore has indicated may be the case, shouldn't the same requirements apply here for this type of decision-making re; choice of leachate pretreatment technology?)

Further example of this concern about design choices being limited to Brown and Caldwell, the ANR contracted with Ivan Cooper, Principal, Conservation and Environmental Consultants, to evaluate the Brown and Caldwell Scoping Study Mr. Cooper is considered an expert in the solid waste field, specifically in the field of leachate pretreatment. Mr. Cooper recommended adding two steps to the Brown and Caldwell design to improve capacity to filter for PFAS. These steps would add to the cost of the operation in the course of improving filtration.

As a caution, in a recent article, <https://swana.org/news/blog/swana-post/swana-blog/2021/07/13/pfas-and-landfill-leachate>, about pretreatment technologies for removing PFAS from landfill leachate, Mr. Cooper is quoted as saying, “These technologies are in their infancy and have shown significant promise. However, there still are concerns about residuals management, complete destruction, or sequestering short chain PFAS. Additional evaluation on treatment processes is also needed to address concerns about treatment results where PFAS precursors become regulated PFAS constituents.”

Without regulation requiring strict standards for planning- including verifying the soundness of a design in the real world as well as under controlled conditions- this innovation in leachate management is ripe for insufficiency in meeting the end-of-pipe target for the five PFAS compounds required to meet the PFAS drinking water standard for Vermont let alone the other thousands of PFAS which are the precursors Mr.

Cooper references. Success in this experiment depends on the implementation of an up to the minute, airtight, long-range plan developed with consultants who are scientists and environmental engineers, with real-world experience with leachate pretreatment technology capable of filtering the vast array of landfill leachate contaminants.

- Another example of this need for strict regulation by ANR is in Special Conditions, 5 b. “By no later than one year following the effective date of this permit, *the Permittee shall have the leachate treatment and/or pretreatment technology(s) installed and begin the pilot study in accordance with the approved Plan.*”

One year to complete every step from filing the amendment application, required by Special Condition #5, and that process running its course; then choosing tech, siting, building, developing systems for monitoring, and more! As much as I appreciate the urgent need to find and implement an effective means to capture PFAS and other CECs from leachate and remove these compounds from the environment for good, is it wise for Vermont to rush this experiment with what has not yet been fully achieved elsewhere in the nation and without a firm understanding of the viability of a specific, evidence-based design backed by objective, experienced engineers in the field of leachate pretreatment technology?

Is this even possible given this timeline? Is this all predetermined? Have these decisions already been made? Has the technology already been chosen, not the one most effective at filtering toxins, but the one most effective at cutting costs for the Permittee?

Who is overseeing the hiring of consultants with expertise in this new field to set parameters, identify a current, comprehensive list of priority landfill pollutants and monitor for safety from start to finish? Where is the requirement to handle residuals like spent filters or emissions with the utmost safety and concern, similar to handling radioactive waste since landfill toxins are extremely toxic with many having “half-lives” in terms of the persistent nature of their molecular structure. Residual filters must be encapsulated and sealed in vault-like conditions, not returned to the landfill where we might pray they do not degrade and release their poisons. Emissions must be scrubbed.

Every step of this process of leachate detoxification is hugely expensive. Temptation will be great to cut corners to cut costs. Who will provide the objective, third-party oversight necessary to assess health and safety for the environment and public in every phase of the project, to protect our precious natural resources-water, land and air- in Vermont, and in Quebec as well in that the two water bodies most affected now are the international lakes of Memphremagog and Champlain?

Let’s face facts- the most effective filtration technology is not the most cost-effective. The greatest responsibility for developing basically every step in this “experimental pilot project” including monitoring for safety, has been left to the for-profit corporation whose primary interest is their profit margin. Regulations must require the Permittee to choose evidence-based technology proven to be the most effective, not the cheapest!

- Has the site already been determined- is the only “onsite” option on the Coventry landfill? Has any other site ever been considered- one geologically sound, far from wetlands or the Memphremagog watershed, closest to where the most of Vermont’s trash is generated, where an alternative landfill should also be established and soon? This gets to the concerns about the precarious siting of the Coventry landfill bordering wetlands, and in close proximity to the Black River and Lake Memphremagog. I know these comments are supposed to be directed only to the specifics of the permit, but inevitably we must address these related issues, including the fact that the Lake itself is a drinking water source for 175,000 Quebec neighbors, which heightens the

need to protect not only our Vermont but also our Canadian natural resources when we are making plans for the future related to solid waste and leachate disposal.

Too many questions remain unanswered in this draft permit. Answers are imperative in order to proceed with an effective plan to address one of the most critical environmental threats facing our state, our nation and our world- the capture and containment of landfill toxins- not just the five PFAS compounds addressed in our Vermont drinking water standard, but the thousands of other PFAS and toxic landfill contaminants found in our manufactured products, along with residential waste, that become disposed of as solid waste and ultimately generate landfill leachate. The list of Priority Pollutants to screen for and filter must be up- to- date, not the EPA list that is forty years old identified in this Draft!

It is past time to be open and transparent, get back to square one, write the regulations according to Administrative Procedures, then rewrite two separate Draft Permits, one for Pretreatment Discharge and one for this experimental pilot project for leachate pretreatment. It is a moral imperative to impose rigorous conditions on this project. The Precautionary Principle must apply: “The Precautionary Principle **enables authorities to take precautionary measures** by means of pre-damage control when it is scientifically plausible but uncertain that a new technology or product may cause harm. Jun 11, 2021

Strict regulation is the only way forward. Strict regulatory authority will go a long way to achieving ANR’s stated mission: **To preserve, enhance, restore and conserve Vermont's natural resources and protect human health for the benefit of this and future generations.**

Thank you for addressing these and other concerns raised by this Draft Permit # 3-1406.

Peggy Stevens
Charleston, VT

From: Lillian Hebert <lilliankh9@gmail.com>
Sent: Wednesday, November 10, 2021 7:36 PM
To: ANR - WSMD Wastewater
Subject: Protect Vermont's waterways

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a Vermont resident, I am concerned that the state is not doing enough to require the Coventry Landfill to avoid contaminating our waters with toxic chemicals.

The state's Coventry landfill, owned by Casella Waste Systems, generates roughly 9.5 million gallons of leachate each year. This garbage juice contains all sorts of toxic substances, including "forever chemicals" known as PFAS – suspected carcinogens linked to a variety of severe health problems.

Waste companies need to take responsibility for the damage they're causing to our waters, and as Vermont's Agency of Natural Resources, you can make that happen.

I'm asking you to do more to ensure the protection of Vermonters' health and environment. That means revising the draft permit to clarify standards around the pilot pre-treatment project and generally strengthen its water quality protections before adopting it. Here's what you need to know:

- Wastewater treatment plants are not equipped to remove all types of leachate contaminants from wastewater prior to that wastewater being discharged into surface waters.
- These facilities cannot remove the long list of contaminants in leachate, including toxic "forever chemicals" known as PFAS, which have been found to be highly toxic to humans and the environment.
- As currently drafted, the permit gives Casella too much authority to set the goals and boundaries of the pilot study. The Agency of Natural Resources should have oversight of this process – identifying pilot study parameters and requiring Casella to select a pretreatment technology that will meet those parameters.
- The draft permit does not include any details regarding how the proposed technology to remove PFAS will be evaluated. The Agency must take a more active approach and develop clear standards and criteria for evaluating the proposed pilot program.

This new permit is an important step towards protecting our environment and the health of our communities. And right now, you have an opportunity to strengthen this permit and prevent more chemical contamination in the region's waterways.

Thank you.

Lillian Hebert,
PO Box 1703,
Manchester Center, VT
lilliankh9@gmail.com

From: Chris Nicotera <magnetbox58@hotmail.com>
Sent: Thursday, November 11, 2021 9:21 AM
To: ANR - WSMD Wastewater
Subject: experimental pilot project in Memphremagog

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi,

I am sincerely opposed to the proposed Experimental Pilot project. The Northeast Kingdom and Lake Memphremagog shouldn't be the dumping ground for leachate treatment and disposal. The lake's catfish are deformed, a canary in the coal mine situation if I ever saw one.

And it's not fair to our Quebec neighbors to the north who use the water for drinking.

Please drop this proposal and find a geologically safe landfill site.

Chris Nicotera

Morgan, VT

From: Fortunati, Robert <bfortunati@blodgettsupply.com>
Sent: Friday, November 12, 2021 3:44 PM
To: ANR - WSMD Wastewater
Subject: Coventry Landfill Pretreatment

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi ANR, Lake Memphremagog and the Black River are not an experiment fish bowl ! it takes very little to kill off many life forms . This should never be a consideration going forward even with positive results from preliminary testing. No one asked for this massive landfill here and it in itself is enough of a risk to the surrounding environment down stream for many lifetimes to come. The garbage juice treated or untreated should be hauled off to a more suitable geological area were containment can be easily achieved in any event that it becomes unmanageable.

Sent from [Mail](#) for Windows

Confidentiality Notice: Information in this message, including any attachments, is intended only for the personal and confidential use of the recipient(s) above named. The information contained in this message may be privileged and confidential, may constitute a trade secret, may be subject to the attorney-client privilege and may otherwise be protected from disclosure. If you are not the intended recipient of this message, or an agent responsible for delivering it to an intended recipient, you are hereby notified that you have received this message in error, and that any review, dissemination, disclosure, distribution, or copying of this message is strictly prohibited. If you received this message in error, please notify the sender immediately, delete this message and destroy any hard copy print-outs. We have taken precautions to minimize the risk of transmitting software viruses, but we advise you to carry your own virus checks on any attachment to this message. We cannot accept liability for any loss or damage caused by software viruses.

From: JUDITH BALLINGER <pudyballinger@comcast.net>
Sent: Sunday, November 14, 2021 4:51 PM
To: ANR - WSMD Wastewater
Subject: permit #3-1406 New England Waste Services Inc

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

We oppose the draft permit for an "experimental pilot project" for pretreatment of landfill leachate. Granting the responsibility of this experimental project to a landfill owner/operator with no experience in leachate pretreatment and a history of accidental pollution, including the 153,000 gallon landfill leachate spill in Bethlehem, N.H. last May seems to be analogous to hiring the fox to oversee the henhouse. NEWSVT is a private corporation, concerned with their profit margin, not environmental protection. Any experimental pilot project for pretreatment of leachate must NOT result in leachate, pretreated or not, ending up in Lake Memphremagog, the drinking water source for 175,000 Canadians, or ANY river or lake in Vermont.

The State of Vermont must take a regional approach to dealing with solid waste management and develop a geologically safe alternative landfill site near to where most Vermont trash is produced so that NEWSVT Coventry can be closed, instead of permitting trash from all over Vermont and parts of New England to be trucked to Coventry.

Judith and Gerald Ballinger
Coventry, VT

From: Polaczyk, Amy
Sent: Tuesday, November 16, 2021 4:33 PM
To: ANR - WSMD Wastewater
Subject: FW: NEWS VT comments.....
Attachments: 20211116121803344.pdf

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her) Vermont Department of Environmental Conservation Watershed Management Division, Wastewater Management Program Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

-----Original Message-----

From: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Sent: Tuesday, November 16, 2021 3:49 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>; Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: NEWS VT comments.....

NEWS VT comments.....

Pete LaFlamme | Director
Vermont Department of Environmental Conservation Watershed Management Division
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6190 (cell)
www.watershedmanagement.vermont.gov

-----Original Message-----

From: Hadden, Sarah <Sarah.Hadden@vermont.gov>
Sent: Tuesday, November 16, 2021 12:24 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Walke, Peter <Peter.Walke@vermont.gov>
Subject: Constituent Letter 1

Hello,

Please see attached letter. Thank you.

Sarah Hadden | Executive Assistant
Vermont Agency of Natural Resources | Central Office
1 National Life Drive, Davis 2 | Montpelier, VT 05620-3901
802-828-0316 Main
802-522-8491 Cell
sarah.hadden@vermont.gov
anr.vermont.gov

-----Original Message-----

From: Davis214Scanner@vermont.gov <Davis214Scanner@vermont.gov>
Sent: Tuesday, November 16, 2021 12:18 PM
To: Hadden, Sarah <Sarah.Hadden@vermont.gov>

Bill Coleman
282 Shady Lane
Newark, Vermont 05871
(802) 535-5042

Vermont Agency of Natural Resources
Julie Moore, Agency Secretary
1 National Life Drive, Davis 2
Montpelier, VT. 05620-3901

November 12th, 2021

Dear ANR Secretary Moore,

This letter pertains to widespread concerns about the planning process for wastewater treatment of leachate under consideration now by your agency.

First of all, I must strenuously object to what I have learned is the possible importation of leachate from Casella or other landfills in New Hampshire for treatment in Vermont. As a state that prides ourselves on supporting and maintaining a healthy and clean population and environment what possible benefit could there be for us to be welcoming leachate from for-profit out of state trash handling facilities? That notion must be rejected out of hand and any willingness to permit such abuses must be regarded as abdication of your ethical responsibilities to the Vermont citizens who pay your salary.

Secondly, it seems exceedingly obvious that a gaping conflict of interest would exist were this state to permit NEWS-VT to self-monitor their ability to comply with monitoring of the treated leachate that might be exiting from their proposed wastewater treatment facility. It is clear that highly trained state or federal water quality evaluation professionals with pertinent credentials must be the ones providing us with determinations as to whether any leachate to be discharged meets existing or future standards.

Leachate storage must be very closely monitored to prevent any potential overflows

and accidental discharges into our waterways. Very hefty fines as well as possible criminal penalties must be given to individuals in the highest levels of any organization found responsible for contaminating our waterways with untreated or insufficiently treated leachate. Our state must show zero tolerance for corporate criminals who make pretenses that discharges are accidental or unavoidable due to weather extremes.

Beyond that it will be up to the Vermont legislature to create tight restrictions upon the activities of both the solid and liquified waste industries, and to safeguard the public from conflicts of interest pertaining to effluent or landfill safety.

In addition, the legislature must regulate products including food packaging, cookware, carpeting, furniture and the personal and commercial automotive and truck industries so as to outlaw the importation of PFOAs. In fairness to your agency you should not be left to attempt to be providing bandages in the aftermath of a far too unregulated manufacturing and economic system that spews out more PFOAs and similar types of poisons every day.

In the health interests of generations of Vermonters to come as well as those of us currently living, working and visiting this state it is incumbent upon you to take decisive action in protection of our precious natural heritage; our lands, wildlife and waters.

With grave concerns,

A handwritten signature in black ink that reads "Bill Coleman". The signature is written in a cursive, flowing style.

Bill Coleman

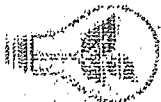
Chairperson, Newark Progressive Town Committee

Newark, Vermont

Bill Coleman
282 Shady Lane
Newark, Vermont 05871

Vermont Agency of Natural Resources
Secretary Julie Morse
1 National Life Drive, Drive 2
Montpelier, VT 05620-3901

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POSTNET
05871

From: Diane Lehder <dianezlehder@gmail.com>
Sent: Tuesday, November 16, 2021 11:22 AM
To: ANR - WSMD Wastewater
Subject: Coventry Landfill

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

My husband and I fully support DUMP's efforts to put a lid on the expansion of the Coventry landfill. Further, we oppose any permit for an experimental pilot project for pretreatment of landfill leachate at that site.

Diane Z. and Wilfred E. Lehder Jr.
61 Foster's Grove S.
Orleans, VT 05860

From: Kate Goetz <kgardnergoetz@hotmail.com>
Sent: Tuesday, November 16, 2021 10:07 PM
To: ANR - WSMD Wastewater
Subject: OPPOSE draft permit for pretreatment of landfill leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I oppose the draft permit for an "experimental pilot project" for pretreatment of landfill leachate. The risks of discharging landfill leachate into Lake Memphremagog or any other Vermont body of water are too high for anything "experimental" to be acceptable. We need strict oversight of leachate disposal by the ANR, not a permit putting Casella in charge of an "experimental" process.

Sincerely,

Kate Goetz
99 Newark St
West BURke, VT 05871

From: Giannetti, Nick
Sent: Tuesday, November 16, 2021 3:51 PM
To: ANR - WSMD Wastewater
Subject: FW: Constituent Letter 2 NEWS VT comments.....
Attachments: 20211116121729907.pdf

Nick Giannetti | Pretreatment Coordinator Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6186 cell
Nick.Giannetti@Vermont.gov
<http://dec.vermont.gov/watershed/wastewater>

-----Original Message-----

From: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>
Sent: Tuesday, November 16, 2021 3:50 PM
To: Polaczyk, Amy <Amy.Polaczyk@vermont.gov>; Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: FW: Constituent Letter 2 NEWS VT comments.....

NEWS VT comments.....

Pete LaFlamme | Director
Vermont Department of Environmental Conservation Watershed Management Division
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6190 (cell)
www.watershedmanagement.vermont.gov

-----Original Message-----

From: Hadden, Sarah <Sarah.Hadden@vermont.gov>
Sent: Tuesday, November 16, 2021 12:25 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Walke, Peter <Peter.Walke@vermont.gov>
Subject: Constituent Letter 2

Hello,

Please see attached letter. Thank you.

Sarah Hadden | Executive Assistant
Vermont Agency of Natural Resources | Central Office
1 National Life Drive, Davis 2 | Montpelier, VT 05620-3901
802-828-0316 Main
802-522-8491 Cell
sarah.hadden@vermont.gov
anr.vermont.gov

-----Original Message-----

From: Davis214Scanner@vermont.gov <Davis214Scanner@vermont.gov>

Sent: Tuesday, November 16, 2021 12:18 PM

To: Hadden, Sarah <Sarah.Hadden@vermont.gov>

Subject: Message from "NL214-ANR-Ricoh4503"

This E-mail was sent from "NL214-ANR-Ricoh4503" (MP C4503).

Scan Date: 11.16.2021 12:17:29 (-0500)

Queries to: Davis214Scanner@vermont.gov

Public Comment to Draft Permit No. 3-1406
November 2nd, 2021

Governor Scott,
Secretary Moore, and Staff,

Draft Permit No. 3-1406 contains two very different proposals. The issue of a “pilot project” proposed by ANR/ Casella, NEWSVT, has NO place in the 2016 renewal application for the Pretreatment Discharge Permit needed for Montpelier’s WWTF to continue to accept leachate. The “pilot project” to scrub toxic chemicals from leachate, is a whole new endeavor and as yet, not successfully done in any other part of the United States. Shame is on you for giving support, looking away, lack of oversight and approving the permit for the expansion of this landfill, and now attempting to slide this” pilot project” into a renewal permit for a WWTF in Montpelier.

Consideration for our families and our neighbors to the north as well, needs to be top priority. Any plan of this magnitude needs a separate permit and to include evidence based research, proven effective to scrub leachate of toxins. It is not only the class of 9,000+ PFAs chemicals, but also any CEC’s(chemicals of emerging concern) now NOT identified, but also those identified toxic chemicals, toxic to humans, wildlife, plants, poisoning our water, soil and our air. You have these jobs because you have scientific backgrounds and you all know better than to poison our Watershed, Wetlands, Rivers and Lakes. We will not allow this pilot project to be placed on a drinking water source for our neighbors or ourselves. We have seen firsthand how ANR accepts modifications and amendments to permits! Stop this project now! The risk is way too high for this to be acceptable in the Memphremagog Watershed by a company beholden to its shareholders. NO LEACHATE EVER, ANYWHERE IN THE MEMPHREMAGOG WATERSHED.

The ANR sanctioned the last expansion permit for the added 50+ acres of the landfill, further contaminating our environment and endangering lives as well as the many acres of wetlands, and the South Bay Wildlife Management Area,

surrounding the already Mega-Dump that will be here for as long as my Children and Grandchildren who live here exist. This Governor and his Appointees have built a Superfund Site. I remember reading an article, Secretary Moore, that you wrote and how valuable our wetlands are, except I suppose these wetlands in the Memphremagog watershed. My question is this: Do you value the lives of the people in the Memphremagog Watershed and our Canadian neighbors, or do you value the funds more, that John Casella, scatters around in order to “buy” the way forward for his shareholders? Please, with some honesty, integrity and transparency, find the right answer. Pete Laflamme said all questions would be answered.

We have taken more than our share of garbage, plus 10 years of leachate in this Lake! Enough is enough!

I am born and raised here in the town of Derby on a dairy farm and owned a dairy farm (now part of Eagle Point Wildlife Management Area) have lived on both sides of Lake Memphremagog, have owned six properties either on or within sight of this Lake. I have spent hours swimming, fishing and boating in the Lake. My children have chosen to live here as have my grandchildren. Average income here may be in the \$30,000 – 35,000 range if it’s that high, half what it is in Chittenden or Washington County. Our tourist industry is a huge part of our economy. We cannot afford to further contaminate our natural resources and survive. No amount of money trumps the value of our Lake Memphremagog and Clean Water for all.

Elfrieda M. Brown



Ms. Elfiada Brown
3309 Darling Hill Rd
Newport, VT 05855

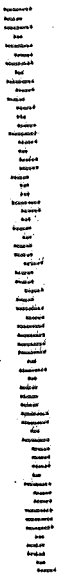
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Agency of Natural Resources
Sec. Julie Moore
National Life Dr Davis
Montpelier, VT 05620 3901

9552083501



Bill Coleman
282 Shady Lane
Newark, Vermont 05871
(802) 535-5042

Vermont Agency of Natural Resources
Julie Moore, Agency Secretary
1 National Life Drive, Davis 2
Montpelier, VT. 05620-3901

November 12th, 2021

Dear ANR Secretary Moore,

This letter pertains to widespread concerns about the planning process for wastewater treatment of leachate under consideration now by your agency.

First of all, I must strenuously object to what I have learned is the possible importation of leachate from Casella or other landfills in New Hampshire for treatment in Vermont. As a state that prides ourselves on supporting and maintaining a healthy and clean population and environment what possible benefit could there be for us to be welcoming leachate from for-profit out of state trash handling facilities? That notion must be rejected out of hand and any willingness to permit such abuses must be regarded as abdication of your ethical responsibilities to the Vermont citizens who pay your salary.

Secondly, it seems exceedingly obvious that a gaping conflict of interest would exist were this state to permit NEWS-VT to self-monitor their ability to comply with monitoring of the treated leachate that might be exiting from their proposed wastewater treatment facility. It is clear that highly trained state or federal water quality evaluation professionals with pertinent credentials must be the ones providing us with determinations as to whether any leachate to be discharged meets existing or future standards.

Leachate storage must be very closely monitored to prevent any potential overflows

and accidental discharges into our waterways. Very hefty fines as well as possible criminal penalties must be given to individuals in the highest levels of any organization found responsible for contaminating our waterways with untreated or insufficiently treated leachate. Our state must show zero tolerance for corporate criminals who make pretenses that discharges are accidental or unavoidable due to weather extremes.

Beyond that it will be up to the Vermont legislature to create tight restrictions upon the activities of both the solid and liquified waste industries, and to safeguard the public from conflicts of interest pertaining to effluent or landfill safety.

In addition, the legislature must regulate products including food packaging, cookware, carpeting, furniture and the personal and commercial automotive and truck industries so as to outlaw the importation of PFOAs. In fairness to your agency you should not be left to attempt to be providing bandages in the aftermath of a far too unregulated manufacturing and economic system that spews out more PFOAs and similar types of poisons every day.

In the health interests of generations of Vermonters to come as well as those of us currently living, working and visiting this state it is incumbent upon you to take decisive action in protection of our precious natural heritage; our lands, wildlife and waters.

With grave concerns,

A handwritten signature in black ink that reads "Bill Coleman". The signature is written in a cursive, flowing style.

Bill Coleman

Chairperson, Newark Progressive Town Committee

Newark, Vermont

Bill Coleman
282 Shady Lane
Newark, Vermont 05871

Vermont Agency of Natural Resources
Secretary Julie Morse
1 National Life Drive, Drive 2
Montpelier, VT. 05620-3901

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POSTNET
0503901

From: Dave and Lindy Sargent <davelindysarg@gmail.com>
Sent: Wednesday, November 17, 2021 3:49 PM
To: ANR - WSMD Wastewater
Subject: Public Comment for Permit 3-1406
Attachments: Lindy Sargent Public Comment to ANR Draft Permit 11-8-21.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you for reading and including my comment to your Draft Pretreatment Discharge Permit on your public platform.

I am attaching this comment, which is also copied below.

Sincerely, Lindy Sargent, Barton, VT

Public Comment to ANR Draft Permit

Lindy Sargent, Barton

Knowing that the Agency of Natural Resource's mission is to "protect, sustain, and enhance Vermont's natural resources for the benefit of this and future generations," and knowing that ANR is deeply concerned about the threat of toxics in landfill leachate which continue to enter Vermont's waters, I was disheartened to study Permit #3-1406. I found this draft permit to share very few specifics on the plans to pretreat landfill leachate and no mention of standards, regulations & rules in place or monitoring plans beyond biannual or quarterly reporting of results. The design and operation of the pilot project appears to be handed off to NEWSVT, a private corporation which does not share the same mission as ANR, to develop as it sees fit – and only have 4 months to develop and plan and one year to build a facility. This is a scary relinquishing of the Agency's role in keeping Vermont's waters clean and healthy for all, especially those who drink the waters as 175,000 Canadians, and some Americans on the lake, do.

My specific concerns include:

- Page 3, re: the determination of the Priority Pollutant Metals? Can other PFAS be included beyond the small number of PFAS currently "regulated" by the state of Vermont? Current knowledge recognizes there are thousands of PFAS, so this standard is already outdated; 26 are indeed listed in Appendix A. Could the ANR please research the pollutants in this particular, site-specific Vermont leachate and build a treatment method and then monitor results for these source-specific pollutants, and others – knowing that these chemicals of emerging concern continue to evolve and thus would trigger a never-ending treatment scenario.
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Resources please make these decisions rather than relying on the private NEWSVT corporation to create this plan and this reporting? As mentioned above, we cannot expect NEWSVT to make a decision based on concern for the local populace and those down/upstream for dealing with these forever chemicals. This corporation, by its mission to reap profits for their investors, will choose a method based on its cost-effectiveness. We the people need to know who is making these decisions for the state of Vermont and the people who drink the water.

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- Is the language in this permit written amorphously to allow for future changes to occur, or should the language be spelled out much more specifically now so that Vermonters are clear about what ANR wants to see approved?
- Who bears the liability for any problems that stem from this permit? This is a critical area of concern for landfills and states across the U.S. Solid waste management planning in Vermont, from at least the 1980s on, has been minimal. NIMBY and lawyers ruled when considerations were given to building landfills in more populated areas, including Chittenden and Rutland. Having one landfill in the northeast corner of Vermont, on an international lake, was a poor plan; in the Kingdom we wonder if we’re a “sacrifice zone?” Now is the time to reconsider Vermont’s options for solid waste, so that the State is not left holding the bag when problems occur. Follow the Precautionary Principle until there is a well thought-out plan.

I recognize that the Agency of Natural Resources is sincerely concerned and is trying to take on the

challenge of dealing with PFAS and toxic pollutants in landfill leachate as they continue to enter Vermont and international waters. It is one that is being faced all over the world and is in its infancy re: technological solutions. I would like to see ANR take more responsibility for this project, include more facts and specifics in their development and future permitting of this project, work in partnership with other states in the region, and not leave this enormous initiative to the powers of a corporation.

Thank you.

Lindy Sargent, Barton

Public Comment to ANR Draft Permit

Lindy Sargent, Barton

Knowing that the Agency of Natural Resource's mission is to "protect, sustain, and enhance Vermont's natural resources for the benefit of this and future generations," and knowing that ANR is deeply concerned about the threat of toxics in landfill leachate which continue to enter Vermont's waters, I was disheartened to study Permit #3-1406. I found this draft permit to share very few specifics on the plans to pretreat landfill leachate and no mention of standards, regulations & rules in place or monitoring plans beyond biannual or quarterly reporting of results. The design and operation of the pilot project appears to be handed off to NEWSVT, a private corporation which does not share the same mission as ANR, to develop as it sees fit – and only have 4 months to develop and plan and one year to build a facility. This is a scary relinquishing of the Agency's role in keeping Vermont's waters clean and healthy for all, especially those who drink the waters as 175,000 Canadians, and some Americans on the lake, do.

My specific concerns include:

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Thank you.

Lindy Sargent, Barton

From: DUMP LLC <documents4dump@gmail.com>
Sent: Wednesday, November 17, 2021 12:57 PM
To: ANR - WSMD Wastewater
Subject: DUMP Comment for Draft Permit 3-1406
Attachments: DUMP comments to Draft Permit 3-1406.pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please accept the attached comment for Draft Pretreatment Discharge Permit 3-1406.

Thank you.

DUMP Advisory Committee

DUMP, LLC

Don't Undermine Memphremagog's Purity

Public Comment to Draft Pretreatment Discharge Permit

Permit 3-1406

Submitted by: Don't Undermine Memphremagog's Purity (DUMP, LLC)

Date: November 18, 2021

ANR.WSMDWastewater@vermont.gov

As essential a priority as effective treatment of landfill leachate is, in order to scrub it of its toxins and to eliminate the existential hazard to the environment and public health in Vermont and around the world, Vermont must not rush into developing this highly technical process headfirst, but in a measured and deliberate way.

While we understand that this public comment must be focused on the text of the draft permit itself, it is impossible to separate our comments from the closely related and equally important issues that have informed our work in DUMP since its inception. For this reason, we include this cover letter, in addition to our mark-up of the document **Draft Pretreatment Discharge Permit 3-1406**, which provides point-by-point response to the draft itself.

- **Responsibility and accountability** for leachate pretreatment, in fact solid waste in total, belongs to the State of Vermont alone. Thus far, we are not aware that any regulations or standards specific to this highly technical and brand-new field of leachate pretreatment for landfill contaminants have been drawn up according to State of Vermont administrative procedures. Without a regulatory framework how will accountability to the State of Vermont ANR and to the citizens of Vermont be assured?

We stress that treatment of landfill leachate to filter all the deadly toxins it contains, as necessary a goal as that is, is too important a function, affecting the health of environment and of the public, to be left to the private for-profit solid waste industry alone. Landfill leachate, containing toxic CECs, including “forever” PFAS chemicals as well as heavy metals and other harmful substances, is toxic nearly to the same degree as nuclear waste. Effective, evidence-based technology will be required to be utilized at any cost. The profit margins of big business cannot be put before the interests of public and environmental health.

Given the current language in this draft, one has to ask “Who is in charge here? The State ANR or the solid waste industry giant NEWSVT?” Where is the regulatory authority to govern every step of this leachate pretreatment pilot project?

In effect, Special Condition #5 of this Draft Permit allows for the privatization of environmental regulation, ceding the “police power” of the state for the protection of the public health, safety and welfare to a private corporation.

As written, the decision-making authority- for choosing the technology, the siting of the pilot project, oversight of day-to-day management and maintaining safety requirements and more- is in the hands of the landfill owner-operator, one with a history of environmental violations. With so much at stake, this permit needs to be rewritten to put the State regulatory agency, and the legislature, in charge of every aspect of solid waste management, especially including leachate pretreatment.

Furthermore, the attempt to roll two permits into one is highly questionable. The pilot leachate pretreatment project embedded in this draft permit is set in motion by Special Condition 5, which by its own terms requires the filing of an amendment application. Considering the time this process would take, the timeline set in Special Condition 5b (one year- from approving this draft permit,

choosing the technology, determining a site, and planning every step of operations and monitoring-to beginning construction of this facility) is either overly optimistic or suggests that many of these decisions have already been made in the absence of any pertinent regulations or performance standards.

Strict statutory and regulatory authority is required moving forward to meet the mission of the Vermont Agency of Natural Resources: to protect our natural resources on behalf of the environment and the people of Vermont for future generations.

Additionally, you will notice certain themes that are repeated throughout this response to the Draft Permit. These include:

For the Wastewater Treatment permit:

- Lack of any jurisdictional basis and authority, based upon Vermont enabling legislation giving the ANR authority to delegate permit responsibilities to a private entity (NEWSVT)
- Priority Pollutant List - limited number of PFAS compounds monitored. For other contaminants the permit is using a 40-year-old EPA list - many other toxic contaminants should be added. The permit does not require an adequate water quality monitoring process to assess the impact of PFAS on receiving waters and fish tissue; receiving waters are only being monitored for five PFAS. Total PFAS must be monitored as all PFAS compounds incur similar harm to environmental and public health.
- Language lacks specificity thus no accountability required; use of language throughout that is not definite i.e., "may" vs. "shall", "can" vs "will".
- If Montpelier restricts the leachate (storm events, other) where will the leachate go?
- What if the holding tanks are full? Important details are lacking about number of gallons of leachate from in-state and out- of -state landfills that may be pretreated, and what Plan B is in the event Montpelier WWTF is unable to handle the number of gallons permitted for discharge.
- Permittee has too much responsibility thus control over decision-making; objective, 3rd -party expert oversight is required.

Condition 5: Pilot Study for Leachate Treatment

- Lack of evidence of regulatory standards; lack of any jurisdictional basis and authority, based upon Vermont enabling legislation, giving the ANR authority to delegate permit responsibilities to a private entity (NEWSVT). The Draft Permit contains several improper "conditions subsequent"; Special Condition 5 is the clearest example of this and must not be included as written in the final permit, if a permit is to be issued.
- Permittee has been granted too much control over every phase of decision-making; objective 3rd - party expert oversight is lacking and must be required by the ANR throughout the process, from selecting technology; siting; setting parameters for oversight and monitoring; through to managing day to day operations, including handling residuals in the safest manner possible to ensure the safety of the environment and public.
- Priority Pollutant List – a limited number of PFAS compounds is required to be monitored out of the thousands of PFAS compounds and precursors. For other contaminants, the permit is using a 40-year-old EPA list; many other toxic contaminants should be added.
- Knowledge and understanding of the technology for treating leachate is evolving - Permittee is authorized to select a technology from a 2-year-old study, when the state of the technology has advanced to be more effective at filtering landfill leachate contaminants than the 2019 Brown and

Caldwell designs under consideration. ANR must require that effectiveness, not cost, guide decision-making.

- Language lacks specificity, thus no accountability is required; use of language throughout the Draft that is not definite, i.e., "may" vs. "shall", "can" vs "will" , leaves too much room for lax management and insufficient protection of natural resources and the public health.

This cover letter also addresses concerns that cannot be separated from the consequences of this permitting process, and that are foundational to our objection to the permit as written and to our insistence that the Draft Permit 3-1406 be denied and a new process begun, incorporating all the public comments received that echo similar concerns as DUMP expresses here in the cover letter, and in the mark-up of the Draft Permit that follows:

Foundational concerns:

Potential for Environmental Catastrophe: EPA regs today would not allow any landfill, much less the Coventry monolith, to be sited within feet of wetlands, yards of a river that flows into a lake less than a mile away. Adding a "pilot project" to treat toxic landfill leachate, which would import even more raw leachate to this site, including from out-of-state as is proposed in this Draft Permit, and then to discharge its effluent into the Memphremagog watershed, is asking for calamity, if it hasn't already occurred. The Brown Bullhead with cancer, found nowhere else in this state, are proven to be contaminated with toxic chemicals. Those chemicals are evidence of existing environmental chemical contamination in the lake. Don't add to the mix. No leachate pretreatment facility or disposal of toxic effluent should be allowed anywhere in the Memphremagog watershed, or in the Champlain watershed, both international lakes.

Moral Imperative: Lake Memphremagog serves as a drinking water reservoir for 175,000 Quebec neighbors. Our actions have consequences! The Clean Water Act, The Boundary Waters Treaty, International Law all forbid intentional pollution of another country's water supply. The Precautionary Principle must guide every step moving forward : "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically".

Environmental Justice: This lake region has borne the burden of being the State's solid waste dump for decades. Enough is enough! As our environment suffers our public health and regional quality of life and economy do too. It is past time to find another site for the state's only landfill, nearer to the more populous area where most of this state's solid waste is generated. That is also where the "pilot project" should be sited, and near to where effluent from the leachate pretreatment facility should be disposed- ideally at a centrally located, hydro-geologically sound alternative site to be developed in a timely manner such that the Coventry landfill can be closed for good upon completion- out of the Lake Memphremagog watershed forever!

Economic impact and Political aspects of this permit: It is hard to separate the economic from the political when it comes to this permit and the health and well-being of our environment, our public health and our regional economic security.

Local NEK political and economic concerns center on the immediate impact that solid waste disposal, including leachate disposal and "pretreatment", have had on the region surrounding the Coventry landfill. Our regional economy is dependent on the health of the Lake Memphremagog watershed and suffers from the degradation the landfill has caused. Environmental contamination, evident in the Brown Bullhead with cancerous lesions not found anywhere else in Vermont, and only found in contaminated waters wherever these sick fish are identified, requires continued research to mitigate. Legacy as well as contemporary pollution point sources are implicated. No further contamination from any source, especially the landfill or

related activities, may be permitted. Residents of this affected region south and north of the border are fed up across all social and political lines.

Internal Vermont politics: the vested interest the State has in income from tipping fees per ton means there is no incentive to reduce the amount of solid waste, including leachate, coming in from out of state. The fact that those who produce the most solid waste in the state are allowed to influence the state officials to forego their intention to regionalize solid waste management must be addressed.

International politics of poisoning our northern neighbors' drinking supply threatens the local economy, which is dependent on Canadian trade and must not be undermined by these current concerns; consider the liability issue re: Vermont/ international waters. The Quebec government, on every level, demands that no leachate ever be treated or disposed of into the drinking water source of 175,000 Quebec citizens. If the shoe were on the other foot, we Vermonters would demand the same!

Our comments are offered in the spirit of concern and cooperation we trust they will be received. The work of DUMP has been to shine a light on a grave environmental concern which is many faceted. Raising public awareness and bringing the attention of the ANR and Vermont legislature to these concerns, in order to identify where corrections need to be made and in order to protect our region and its watershed, are our sole objective.

In conclusion, for the aforementioned reasons, DUMP urges the ANR/ Department of Environmental Conservation to deny the issuance of the draft permit to NEWSVT. It is our contention that the content of the landfill leachate must not be allowed to be discharged into any surface waters of the state of Vermont, especially not those of an international lake or its tributary, following the alleged pretreatment authorized in the permit and the treatment provided by the municipal WWTF. **However, should the Department decide to issue the permit and approve the renewal application concurrent with the amendment application limiting disposal of the leachate to only the Montpelier WWTF along with an increase in volume into that facility, then the Department must strike and remove Special Condition 5 from the final permit.**

There is an urgent need for the State to take and retain full responsibility for the Pretreatment of Landfill Leachate, and to pursue a pilot project that would effectively filter the hundreds of toxins threatening ground and surface waters of Vermont. This would require legislative and regulatory authority to first be established, then an effective plan be developed by the State with consultants that have experience and expertise in the field of leachate pretreatment technology that is capable of achieving the results in compliance with standards set forth by the State.

Further, the Vermont legislature, in partnership with the ANR, must establish statutory limits that prohibit import of toxic landfill leachate from any other state, or solid waste that does not meet acceptable standards for landfilling in any other state, as well as the state of Vermont, due to its level of toxicity and threat of environmental harm.

Thank you for your time and attention thus far and from now on. We stand ready to provide continued support towards our common goal of protecting all natural resources of Vermont- air, land and water, humans and wildlife- for our children and our children's children's children.

Respectfully submitted,

Don't Undermine Memphremagog's Purity, LLC

Public Comment to Draft Pretreatment Discharge Permit

Permit 3-1406

Submitted by: Don't Undermine Memphremagog's Purity (DUMP, LLC)

Note: For the purposes of this comment, we will be incorporating full text from the Draft Permit to assist in being as clear as possible as regards our **comments** re: the experimental pilot pretreatment, which requires a separate permit, not a renewal, since this is a brand new, never before Permitted project. Text highlighted in **yellow** is our effort to bring attention to the specific language of concern to which we are directing comment.

To begin, DUMP asserts that there is no evidence provided of jurisdictional basis, founded upon Vermont enabling legislation, giving the ANR authority to delegate permit responsibilities to a private entity (NEWSVT) or to grant this pretreatment discharge permit to NEWSVT for the responsibility of pretreatment discharge of landfill leachate to the WWTF of Montpelier or any other municipality. To do so is to delegate responsibility to protect the natural resources of Vermont, which belongs solely to Vermont Agency of Natural Resources and the Vermont legislature, to a private entity, in this case the Casella corporation.

**AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, DAVIS BUILDING, 3rd FLOOR
MONTPELIER, VT 05620-3522**

Permit No.: **3-1406**
PIN: **WY06-0020**

Facility Name: **New England Waste Services, Inc.**

Facility Address:

**Coventry, VT Landfill
New England Waste Services
of Vermont (NEWSVT)
21 Landfill Lane
Coventry, VT 05825**

**Bethlehem, NH Landfill
North Country Environmental
Services (NCES)
581 Trudeau Road
Bethlehem, NH 03574**

**Central Vermont Landfill
(CV Landfill)
418 US Route 2
East Montpelier, VT 05651**

Facility Classification: **Not Applicable**

Permittee Name: **New England Waste Services, Inc.
220 Avenue B
Williston, Vermont 05495**

Expiration Date: **September 30, 2026**

DRAFT

**PRETREATMENT DISCHARGE PERMIT
SIGNIFICANT INDUSTRIAL USER**

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (10 V.S.A. Chapter 47), the Vermont Water Pollution Control Permit Regulations as amended (Environmental Protection Rules, Chapter 13), and the federal Clean Water Act as amended (33 U.S.C. § 1251 *et seq.*), and implementing federal regulations, the New England Waste Services, Inc. (hereinafter referred to as the "Permittee") is authorized by the Secretary of Natural Resources (Secretary) to haul and discharge leachate from its facilities to the City of Montpelier Wastewater Treatment Facility (WWTF), located at 949 Dog River Road, Montpelier, VT 05602, in accordance with the terms and conditions of this permit.

(Upon approval) This permit shall become effective on

December 1, 2021. Peter Walke, Commissioner
Department of Environmental Conservation

By: _____ Date: _____

Amy Polaczyk, Wastewater Program Manager
Watershed Management Division

I. EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. **Outfall S/N 001 – City of Montpelier WWTF:** During the term of this permit, the Permittee is authorized to haul and discharge solid waste landfill leachate from its NEWSVT, NCES, and CV landfills, through **outfall serial number S/N 001** to the City of Montpelier WWTF. Effluent characteristics shall not exceed the values listed below. Where Federal and Local regulations specify limits for the same pollutant, the more restrictive limit will apply.

EFFLUENT CHARACTERISTICS	EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
	Maximum Day	Monthly Average	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow, gallons per day (GPD)	60,000	Monitor Only		Daily	Total Volume
Biochemical Oxygen Demand (BOD ₅), mg/L and lbs/day	1,200 lbs/day Monitor Only, mg/L	Monitor Only, mg/L & lbs/day		2x-Weekly	Grab
pH, Standard Units (SU)			5.0 to 9.5 SU	Daily	Grab

What will happen with the additional gallons per day from Central Vermont and Bethlehem, NH? Where will these gallons be sent for disposal? Given that Montpelier has exceeded g/p/d of 24,000 gallons regularly, will this be the expectation as well? The Data Fact Sheet itemizes how many gallons per day are generated at the Coventry – 60,000, anticipated to grow to 100,000 as expansion occurs. No g/p/d are documented for Central Vermont or Bethlehem facilities.

Note in Data Fact Sheet is that Bethlehem only sent leachate to Vermont 4-5 days in the last five years, but that is history and does not project leachate imported to Vermont in the coming years. The question of the permissibility of importing any number of gallons of leachate from out-of-state is one that bears close scrutiny as to its increased threat of harm to the Vermont environment and natural resources. Although solid waste and leachate are considered commodities protected under Congress' Interstate Commerce Law, Vermont Law S.20 places restrictions on the manufacture, sale, and distribution of PFAS containing products; therefore, the commerce of solid waste and leachate containing PFAS from out of state can be banned in Vermont.

- a. The Permittee shall discharge leachate into holding tanks or into the receiving stations at the WWTF, or in a manner specified by the Chief Operator of the receiving WWTF.
- b. The Permittee shall not discharge leachate into the Montpelier WWTF during storm events, snow melt, or when a storm event is imminent. The Permittee shall not discharge leachate to Montpelier WWTF on any day in which the

maximum rate of influent flow to the facility exceeds the facility's peak design flow of 12.0 MGD.

What is Plan B under any of these conditions? Where will the leachate go? The reader should be able to understand what the alternative is.

c. See the Monitoring Requirements specified in Condition I.A.2.

2. Effluent Monitoring Requirements: The Permittee shall monitor and record the quality and quantity of landfill leachate from its NEWSVT (S/N 007), NCES (S/N 008), and CV (S/N 009) landfills in accordance with the following monitoring schedule:

Parameters included correlate with the Vermont Drinking Water Standards? Should be noted.

PARAMETER	MONITORING REQUIREMENTS		
	Measurement Frequency	Sample Type	Reporting Requirement
Flow, gallons per day (GPD) ¹	Daily	Total Volume	Monthly Average and Daily Max
Biochemical Oxygen Demand (BOD ₅), mg/L and lbs/day	2x-Weekly	Grab	Monthly Average and Daily Max
Chemical Oxygen Demand (COD), mg/L and lbs/day	Quarterly	Grab	Monthly Average and Daily Max
Total Suspended Solids (TSS), mg/L and lbs/day	Quarterly	Grab	Monthly Average and Daily Max
pH, Standard Units (SU)	Daily	Grab	Daily Min./Max
Total Aluminum, mg/L	Quarterly	Grab	Daily Max
Total Iron, mg/L	Quarterly	Grab	Daily Max
Total Molybdenum, mg/L	Quarterly	Grab	Daily Max
Total Chloride, mg/L	Quarterly	Grab	Daily Max
Total Phosphorus, mg/L and lbs/day	Quarterly	Grab	Daily Max
Total Nitrogen, mg/L and lbs/day ²	Quarterly	Calculated	Daily Max
Total Kjeldahl Nitrogen (TKN), mg/L	Quarterly	Grab	Daily Max
Nitrate/Nitrite Nitrogen (NO _x), mg/L	Quarterly	Grab	Daily Max
Per and poly-fluoroalkyl substances (PFAS), ng/L³			
Perfluorohexanesulfonic acid (PFHxS)	Monthly	Grab	Daily Max
Perfluoroheptanoic acid (PFHpA)	Monthly	Grab	Daily Max
Perfluorononanoic acid (PFNA)	Monthly	Grab	Daily Max
Perfluorooctanesulfonic acid (PFOS)	Monthly	Grab	Daily Max
Perfluorooctanoic acid (PFOA)	Monthly	Grab	Daily Max
40 Code of Federal Regulations (C.F.R.) Part 423, Appendix A, Priority Pollutants⁴			
Total Metals, mg/L ⁵	Quarterly	Grab	Daily Max

Volatile Organic Compounds (VOCs), mg/L ⁶	2x-Annually ⁸	Grab	Daily Max
Acid and Base/Neutral Extractable Compounds, mg/L ⁷	2x-Annually ⁸	Grab	Daily Max
Pesticides, mg/L	2x-Annually ⁸	Grab	Daily Max
Polychlorinated Bi-Phenyls (PCBs), mg/L	2x-Annually ⁸	Grab	Daily Max

Notes on Effluent Monitoring Requirements:

Sampling Location: *Samples collected in compliance with the monitoring requirements specified above shall be well mixed and representative of the leachate discharged to the WWTFs. NEWSVT samples shall be collected from the main loading pipe of the Leachate Loadout Station. NCES samples shall be collected from the main loading pipe of the Leachate Loadout Station. CV Landfill samples shall be collected from the main loading pipe of the leachate tanker.*

¹ Leachate collected from the landfills and hauled to the WWTFs shall be measured by weighing each outbound tanker truck and converting the weight to gallons. The Permittee shall report daily leachate flow in the following manner on Discharge Monitoring Report (DMR) form WR-43:

- Total Leachate Flow;
- Total NEWSVT Flow;
- Total NCES Flow; and
- Total CV Flow.

² Total Nitrogen shall be calculated as: $TN = TKN + NO_x$.

³ PFAS shall be analyzed utilizing E.P.A. modified Method 537 Version 1.1, incorporating isotope dilution, in accordance with Department of Defense (DoD) Quality Systems Manual (QSM) 5.2. The method shall meet a target minimum detection limit (MDL) for PFHxS, PFHpA, PFNA, PFOS, and PFOA of no greater than 2 ng/L. The Permittee shall utilize a Clean Water Act multilab validated method for PFAS, when a sufficiently sensitive test procedure (i.e., method) has been approved under 40 C.F.R. Part 136. The Permittee shall report the results of the PFHxS, PFHpA, PFNA, PFOS, PFOA, and the sum of the five PFAS on DMR form WR-43. The Permittee shall report results for the list of PFAS compounds specified in Attachment A, as an attachment to the DMR form WR-43.

⁴ See Attachment B for a list of 40 C.F.R. Part 423 Priority Pollutants. Priority Pollutant results shall be reported as an attachment to the Discharge Monitoring Report (DMR) form WR-43.

⁵ Total Metals shall include: Antimony, Arsenic, Beryllium, Cadmium, Copper, Chromium, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

⁶ VOCs shall be analyzed in accordance with EPA Method 8260.

⁷ Acid and Base/Neutral Extractable Compounds shall be analyzed by EPA Method 8270.

⁸ Samples shall be collected once between January 1 and June 30 and once between July 1 and December 31. Sample results shall be reported as an attachment to the June and December DMR.

3. Special Conditions

- a. Each year the Permittee shall submit a copy of the calendar year's monitoring data specified in Condition I.A.2., I.A.4., and I.A.5. in a Microsoft Excel spreadsheet format with the December DMR submission.
- b. This permit constitutes authorization by the Agency to discharge leachate to the City of Montpelier WWTF specified in Conditions I.A.1. in accordance with the terms and conditions of this discharge permit. This permit does not constitute authorization by the City of Montpelier to discharge leachate to its WWTF. The WWTF has the right to restrict or limit the discharge of leachate to their WWTF.
What if Montpelier restricts or limits discharge of leachate into WWTF? What is Plan B? Where will the leachate be disposed of? This should be noted. The Permittee shall not discharge leachate to any State of Vermont WWTF not specified by this permit.
- c. If the City of Montpelier WWTF modifies any allocation granted to the Permittee, **or the Permittee receives approval to discharge leachate to a State of Vermont WWTF not specified by this permit**, the Permittee shall submit an application and other supporting information to the Secretary requesting an amendment of this permit to incorporate these modified limitations. Based on this application, **the Secretary may reopen this permit to establish a schedule to achieve compliance with any modified effluent limitations or other conditions necessary.**
Would it be permissible for the Secretary to allow Newport WWTF to approve and receive or discharge leachate even as it is not permissible at this date and time? It appears to be possible based on the language as written. The verb 'may' is open to interpretation and should be replaced with shall.
- d. The Permittee shall immediately notify the Chief Operator of the City of Montpelier WWTF of any discharge that is known or suspected to violate any of the discharge permit limitations specified in Condition I.A.1 above, in accordance with Condition II.A.2. of the permit.
- e. If the results of the Permittee's wastewater analysis indicate that a violation of this permit has occurred, the Permittee shall repeat the sampling and pollutant analysis and submit, in writing, the results of this second analysis within 30 days of becoming aware of the first violation.
The burden of proof here is on the Permittee's wastewater analysis- this seems inappropriate, to rely on the Permittee to report the violation and repeat sampling and pollutant analysis. The ANR should bear responsibility for this monitoring and corrective action. The independent, objective lab providing analysis should report to the ANR.
- f. There shall be no discharge of any waste to the WWTF which interferes with, passes through without treatment, is otherwise incompatible with the treatment facility, or would have substantial adverse impact on the treatment facility, collection system, sludge disposal, worker safety, or on water quality in the receiving water.

If the monitoring results indicate that this discharge may interfere with or is otherwise incompatible with the proper operation of a receiving WWTF or may pass through without treatment and cause a violation of Vermont Water Quality Standards in the receiving water, the Secretary may reopen this permit and modify effluent limitations, monitoring requirements, or other permit conditions as required. The Secretary may also require the cessation of this discharge until such a time as the discharge will not interfere with or cause an adverse effect on the wastewater treatment facility or receiving water.

The language “may” is inadequate to the serious potential for environmental pollution which would occur with “involuntary pass through without treatment”. The chemical contaminants and metals contained in leachate are known to be harmful to the environment and human health and to have an adverse impact on water quality. “Shall” would be the appropriate verb.

4. Per and Poly-Fluoroalkyl Substances:

a. Water Quality Monitoring: The Permittee shall conduct the following water quality monitoring to assess the impact of PFAS on receiving waters and fish tissue.

i. By six months from the effective date of the permit, the Permittee shall submit a study plan, outlining the locations of collection, sampling methodology, and analysis of the data, to the Secretary’s Wastewater Program and Monitoring, Assessment Program for approval before sampling begins. Water quality monitoring shall begin the month following the approval of the study plan.

What qualifications does the Permittee have to undertake the drafting of this study plan? The ANR must require a qualified scientist to set the parameters for collection, sampling, and analysis, including which analytes will be targeted.

ii. WWTF Monitoring: The following monitoring shall be conducted at WWTFs receiving leachate:

Only five of the literally thousands of PFAS chemicals, all with very similar chemical structures and potentially bio-accumulative negative health effects are being monitored here. It is negligent and myopic to limit PFAS monitoring to these five PFAS compounds, much less the myriad other toxic landfill leachate contaminants, including all legacy and CECs, whether in influent or effluent of receiving WWTF. (See Treatment of Contaminants of Emerging Concern in Landfill Leachate A report submitted pursuant to Act 21 of 2019) Table 1 P.8, Effluent Concentration: Total PFAS (ppt) which demonstrates that total PFAS in Newport WWTF effluent are roughly five times the total of five PFAS targeted in the Vermont drinking water standard. All PFAS compounds have in common the potential to pose grave risk to the environment and public health, as do all other toxic landfill contaminants.

Parameters	Frequency	Sample Location	Sample Type	WWTFs
Perfluorohexanesulfonic acid (PFHxS) Perfluoroheptanoic acid (PFHpA) Perfluorononanoic acid (PFNA), Perfluorooctanesulfonic acid (PFOS) Perfluorooctanoic acid (PFOA)	Quarterly	Influent, Effluent, Solids	Grab	City of Montpelier WWTF
<p>Notes:</p> <ol style="list-style-type: none"> 1. WWTF effluent monitoring shall occur when the WWTF is receiving leachate and shall coincide with instream monitoring specified in Condition I.A.4.a.iii. 2. WWTF samples shall be paired to account for detention time throughout the WWTF. 3. WWTF influent samples shall be collected at a point following the introduction of leachate, septage, and other hauled wastes, and prior to any sidestreams returned to the headworks from operations within the WWTF. WWTF effluent samples shall be collected at the point used for WWTF NPDES Permit compliance. Solids samples shall be collected in accordance with 40 C.F.R. Part 503.8 and at the point used for compliance with the WWTF's Vermont Sludge Management Plan. 4. Influent, effluent, and solids PFAS shall be analyzed utilizing E.P.A. modified Method 537 Version 1.1, incorporating isotope dilution, in accordance with Department of Defense (DoD) Quality Systems Manual (QSM) 5.2. The Permittee shall report the influent and effluent results of the PFHxS, PFHpA, PFNA, PFOS, and PFOA, in addition to the list of PFAS compounds specified in Attachment A, in nanograms per liter (ng/L). Solids PFAS shall be reported in nanograms per gram (ng/g). For influent and effluent testing, the method shall meet a target MDL for PFHxS, PFHpA, PFNA, PFOS, and PFOA of no greater than 2 ng/L. The Permittee shall utilize a Clean Water Act multilab validated method for PFAS, when a sufficiently sensitive test procedure (i.e., method) has been approved under 40 C.F.R. Part 136. 				

iii. Instream Monitoring: The following monitoring shall be conducted at receiving waters of WWTFs receiving leachate:

Parameters	Frequency	Season	Sample Location	Description
Perfluorohexanesulfonic acid (PFHxS) Perfluoroheptanoic acid (PFHpA) Perfluorononanoic acid (PFNA) Perfluorooctanesulfonic acid (PFOS) Perfluorooctanoic acid (PFOA)	3 samples per year	May, July, September	Winooski River Mile (RM) 54.7	Above Montpelier WWTF
			Winooski RM 54.3	Below Montpelier WWTF

Notes:

1. Samples shall not be collected during high flow events or following significant rain and/or storm events.
2. The Permittee shall report receiving water characteristics with each sample result, including streamflow conditions, temperature, dissolved oxygen, pH, conductivity, and turbidity. Streamflow shall be collected from the following United States Geological Survey (USGS) gauges: Winooski River: USGS 042860004.
3. Surface water PFAS shall be analyzed utilizing E.P.A. Method 537 Version 1.1. The Permittee shall report the results of the PFHxS, PFHpA, PFNA, PFOS, and PFOA, in addition to the list of PFAS compounds specified in Attachment A, in nanograms per liter (ng/L). The method shall meet a target MDL for PFHxS, PFHpA, PFNA, PFOS, and PFOA of no greater than 2 ng/L. The Permittee shall utilize a Clean Water Act multilab validated method for PFAS, when a sufficiently sensitive test procedure (i.e., method) has been approved under 40 C.F.R. Part 136.

iv. The results of water quality monitoring shall be submitted as an attachment to the month's DMR form WR-43.

b. Some PFAS, such as PFOS are known to accumulate in fish and are of concern because they are persistent, bioaccumulative and toxic.

Many other PFAS, as well as other landfill contaminants, are known to have the potential to bioaccumulate and be toxic. This should be noted.

Therefore, the Secretary reserves the right to reopen and amend this permit to include fish tissue monitoring if instream water quality monitoring indicates water column concentrations at levels that may contribute to the accumulation of PFAS in fish tissue such that it poses a potential risk to humans when consuming the fish.

This is the point in this draft where the Renewal Permit for Pretreatment Discharge morphs into the Experimental Pilot Project for Leachate Pretreatment. These permits must be separated and redrafted as two distinct Permits. You cannot 'Renew' a Permit for a brand-new pilot project.

Again, DUMP questions this lack of evidence of ANR's clear jurisdictional basis, founded upon Vermont enabling legislation, giving it authority to delegate permit responsibilities for filtration and clean-up of toxic contaminants, including the class of PFAS, in landfill leachate, to a private entity (NEWSVT) DUMP asserts that the ANR/DEC cannot make up for the insufficient jurisdictional basis by setting these Special Conditions for the experimental pilot project for leachate pretreatment..

Although we will comment throughout, the focus of our concern lies with Special Conditions 5. Of greatest concern is the lack of regulatory authority specific to 1) Leachate Pretreatment technology and 2) the series of steps, from beginning to end in the process of leachate pretreatment, which must be approved and monitored to ensure safety of the environment and public health.

DUMP objects to this entire section which surrenders the ANR's role and authority to a private entity. This is dangerous precedent, and we question its allowance without evidence of rules and standards, promulgated by Vermont ANR with specificity to leachate pretreatment technology. We strongly recommend denial of this permit application as written until such jurisdictional bases and State specified regulations and standards are established, rather than prematurely base the permit on "Conditions Subsequent"; leaving a condition up to the judgment of the private entity NEWSVT is a bad idea to say the least.

5. Leachate Treatment for Emerging Contaminants

The Permittee evaluated **The Permittee was required to evaluate...**two on-site and two off-site treatment and pretreatment technologies for the removal of PFAS at the NEWSVT landfill in Coventry, Vermont. The results of this evaluation are presented in a report entitled: "Conceptual Leachate Treatment Scoping Study for New England Wastewater Services of Vermont (NEWSVT) Landfill", dated October 11, 2019. The Permittee shall advance this work by conducting a pilot study of a leachate treatment or pretreatment technology to determine the design conditions of a system for full-scale implementation. The Secretary will use the results of the pilot study to establish a Technology Based Effluent Limit and/or treatment standard for PFAS in landfill leachate. The Secretary **may** (shall) establish effluent limitations and/or require treatment for other pollutants if the results of the pilot study and/or receiving WWTF monitoring indicate that this discharge may interfere with, or is otherwise incompatible with the proper operation of a receiving WWTF, or may pass through without treatment and cause a violation of Vermont Water Quality Standards in the receiving water.

Why is the Permittee limited to the Brown and Caldwell Scoping Study for "two on-site and two off-site pretreatment technologies for the removal of PFAS at the NEWSVT landfill in Coventry, Vermont"?(see P. 8 for further discussion) This is a loaded sentence!

First, it ignores the Civil and Environmental Consultants, (CEC, Ivan Cooper, Principal), evaluation contracted by ANR to evaluate the Brown and Caldwell Scoping Study. That evaluation, as clarified by Ivan Cooper of CEC, offered additional designs for leachate treatment, as well as comparative analysis of the effectiveness of each technology. Cooper's experience and expertise in solid waste/ leachate treatment technology appear to be inconsequential to the ANR in determining which technology will be most effective at removing PFAS and other landfill Special Conditions contaminants of legacy or emerging concern. One design recommended augmenting two pass throughs of RO filtration with a pre- electrocoagulation step and a post GAC filtration for most effective filtration. This was confirmed in

<https://anrweb.vt.gov/PubDocs/DEC/PFAS/General-info/Vermont-PFAS-Roadmap.pdf>

On page 9 it states:

"The Department required the NEWSVT landfill in Coventry to evaluate two onsite and two offsite leachate treatment options and submit a report to the Department detailing the findings of this evaluation. To evaluate the efficacy of that analysis, the Department hired Civil and Environmental Consultants to review the leachate treatment option study completed by NEWSVT. Their review concluded that the study was appropriate and well developed. They recommended that an additional technology (electrocoagulation-based system) be reviewed in future evaluations.

Further, in Treatment of Contaminants of Emerging Concern in Landfill Leachate A report submitted pursuant to Act 21 of 2019, Submitted by: Agency of Natural Resources, Department of Environmental Conservation February 5, 2020 https://legislature.vermont.gov/assets/Legislative-Reports/2020.02.04_Leg-Report-CECs-in-Landfill-Leachate.pdf. **The Conclusion provides all the cautions related to this nascent leachate pretreatment technology which must guide all planning now and in the future.**

“Conclusions

Both landfills and wastewater treatment facilities manage society’s discarded waste, all of which has the potential to contain PFAS and other CECs. *The removal of legacy CECs from the landfill leachate or treated wastewater effluent is complicated and evolving. Treatment to concentrate PFAS and limit the amount of these compounds discharged to the environment may be technically feasible, but typically results in a concentrated waste stream that requires further management. Assurance of the ultimate destruction or isolation of that concentrated waste stream remains unresolved. It is likely that the options and approaches to manage and treat landfill leachate and WWTF effluent will expand greatly in coming years as the science and our understanding continue to improve. Given the evolving nature of these issues, it will be essential to continually evaluate treatment options as well as identify and implement source control strategies that seek to reduce the use of PFAS in consumer products and industrial processes.*”

“Next Step:

• The Department will determine necessary actions for NEWSVT and all lined landfills in Vermont that produce leachate." Year: 2021 Prime Contact: Peter Walke”

But the draft permit certainly states that NEWSVT will determine the necessary actions....

(See 5a.)

Second, this language presupposes that the pilot project for pretreatment would be constructed on the Coventry landfill site, which is not ideal or recommended due to the geological vulnerability of the site in a wetlands area adjacent to the Black River and South Bay of Memphremagog, a site which would not be approved today under current EPA guidelines for landfill siting. Also, the language “The Secretary will use results of the pilot study to establish a Technology Based Effluent Limit and/or treatment standard for PFAS in landfill leachate” is questionable. Shouldn’t the TBEL be determined using objective standards? Where is the evidence that such standards exist or have been pursued? Also, the language regarding “ The Secretary may establish effluent limitations...incompatible with the proper operation of a receiving WWTF...or may pass through...” The language should be mandatory “shall”. In addition, many contaminants may pass through if the technology is insufficient.

a. Leachate Treatment Pilot Study:

<https://anrweb.vt.gov/PubDocs/DEC/PFAS/General-info/Vermont-PFAS-Roadmap.pdf> , Page 9

“Next Step:

- **The Department will determine necessary actions for NEWSVT and all lined landfills in Vermont that produce leachate.”**

But the draft permit certainly states that NEWSVT will determine the necessary actions....

Leachate Treatment for Emerging Contaminants speaks of providing authority to NEWSVT to establish "design conditions of a system for full-scale implementation" . DUMP objects to this entire section giving away ANR's role and authority to a private entity for "Conditions Subsequent".

This is dangerous precedent and we question its allowance under law. Vermont ANR must first promulgate its own rules and standards, with specificity to site placement standards, technology efficacy, capacity, monitoring, and include performance standards for any "pilot project" to remove PFAS from landfill leachate, such as final disposition of filtration equipment/supplies and standards in absence of surface water standards for receiving leachate effluent outflow from the pilot. We strongly recommend denial and/or postponement of this permit application until such State specified rules, standards, and regulations are established, rather than prematurely base the permit on "Conditions Subsequent".

***By no later than four months (an exceedingly short turn-around time given the burden of environmental responsibility) following the effective date of this permit, the Permittee shall submit a Leachate Treatment Pilot Study Plan (Plan) to select and pilot leachate treatment or pretreatment technologies to remove PFAS (Why was this decision made, and by whom, to shift responsibility of this critical nature to the for-profit Permittee? This decision rightly should be in the purview of the ANR/Peter Walke exclusively to ensure the health and safety of the environment and the public.) and provide the concurrent removal of other pollutants pollutants (specify which ones- all current Priority Landfill Pollutants) from the NEWSVT, NCES, and CV leachate. Technologies shall be limited to those identified in or provide treatment equivalent to the technologies presented in the “Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill”, dated October 11, 2019. Again, what happened to the CEC design that would improve the efficacy of the leachate filtration process? “To evaluate the efficacy of that analysis, the Department hired Civil and Environmental Consultants to review the leachate treatment option study completed by NEWSVT. Their review concluded that the study was appropriate and well developed. They recommended that an additional technology (electrocoagulation-based system) be reviewed in future evaluations. (from <https://anrweb.vt.gov/PubDocs/DEC/PFAS/General-info/Vermont-PFAS-Roadmap.pdf> P.9)**

Why has this option been taken off the table when it clearly was the preferred method by CEC, and of Peter Walke? Could it be that the expense was a factor in the Permittee’s decision-making? Did the Permittee have a hand in writing the draft Permit? Has

consideration been given to reviewing other options developed since the CEC evaluation, given this is a technology “in its infancy” according to many including Mr. Cooper? Where is the language that requires the most effective, not the most cost-effective technology be utilized?

The Plan shall be subject to review and approval by the Secretary.

The Plan shall:

- i. Identify the leachate treatment and/or pretreatment technology(s) selected for pilot testing;
 - ii. Include a discussion on why the specific technologies were selected, where they have been used in other leachate treatment applications and the performance of those applications; **Including data demonstrating efficacy based on evidence from real world application, including % of total current Landfill Priority Pollutants/ toxins removed, including PFAS;**
 - iii. Include plans, design criteria, and specifications of the selected pilot treatment and/or pretreatment technology(s) approved by a Professional Engineer; **Such a critical approval must be made by an informed, objective third party, having no previous contract with the Permittee. ANR must make this decision, perhaps to contract with an independent environmental engineer with experience in the field of leachate PFAS pretreatment;**
 - iv. Include a schedule for the planning, design, permitting, construction, and evaluation (piloting) of the selected leachate treatment and/or pretreatment technology(s); **“ to be developed and approved by the same independent, objective third party designated by the ANR. Responsibility must not be left to the corporate interest to decide.**
 - v. Identify the specific operational, performance, economic, water quality, residuals, and air quality parameters that will be analyzed throughout the pilot study. Describe the specific method of collection for all parameters. Include the sampling frequency throughout the anticipated range of loadings, hydraulic flow rates, chemical feed rates, and other operating conditions, including seasonal warm and cold weather conditions, and wet weather, dry weather, and peak operating conditions. **This is a crucial step for which the ANR must be responsible. The Permittee must not have a hand in determining parameters, methods of collection, sampling frequency, etc. as described. An experienced, objective, third party, highly-qualified lab, not previously contracted with the Permittee, must be identified by ANR to identify and oversee this sampling and analysis.**
 - vi. The Plan shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions in place at the time the plan is submitted *that are applicable to permit amendments.* **(could these be specified?)**
- b. By no later than one year following the effective date of this permit, *the Permittee shall have the leachate treatment and/or pretreatment technology(s) installed and begin the pilot study in accordance with the approved Plan.* . What is the rush given the experimental nature of this technology? How is this even conceivable given the short turn-around time and all that must be**

accomplished and approved by ANR in this time? Has this process already begun, undertaken by the Permittee before the Draft has even been reviewed and commented on by the public and necessary revisions made in response to public comment?

c. Throughout the duration of the pilot study, the Permittee shall monitor and record the quality of influent, effluent, and solids from the Montpelier WWTF in accordance with the following monitoring schedule. The Permittee shall submit monitoring results in accordance with the schedule presented in Condition I.A.5.d. As stated above, the responsibility for monitoring and recording must belong to the ANR, approved and contracted to an experienced, objective, third party entity not previously contracted by the Permittee, and to whose monitoring stipulations approved by the ANR the Permittee must comply.

PARAMETER	MONITORING REQUIREMENTS ^{1, 2, 3}		
	Measurement Frequency	Sample Type	Sample Location
Per and poly-fluoroalkyl substances (PFAS), ng/L⁴			
Perfluorohexanesulfonic acid (PFHxS)	Quarterly	Grab	Influent, Effluent, Solids
Perfluoroheptanoic acid (PFHpA)	Quarterly	Grab	Influent, Effluent, Solids
Perfluorononanoic acid (PFNA)	Quarterly	Grab	Influent, Effluent, Solids
Perfluorooctanesulfonic acid (PFOS)	Quarterly	Grab	Influent, Effluent, Solids
Perfluorooctanoic acid (PFOA)	Quarterly	Grab	Influent, Effluent, Solids
40 C.F.R. Part 423, Appendix A, Priority Pollutants^{5, 6, 7}			
Total Metals	Quarterly	Composite	Influent, Effluent, Solids
Volatile Organic Compounds (VOCs), mg/L	2x-Annually – Influent, Effluent ⁹ 1x-Annually – Solids	Grab	Influent, Effluent, Solids
Acid and Base/Neutral Extractable Compounds, mg/L	2x-Annually – Influent, Effluent ⁹ 1x-Annually – Solids	Grab	Influent, Effluent, Solids
Pesticides, mg/L	2x-Annually – Influent, Effluent ⁹ 1x-Annually – Solids	Grab	Influent, Effluent, Solids
Polychlorinated Bi-Phenyls (PCBs), mg/L	2x-Annually – Influent, Effluent ⁹ 1x-Annually – Solids	Grab	Influent, Effluent, Solids
Whole Effluent Toxicity (WET) Testing⁸			
Acute NOEC Acute LC50 Chronic NOEC Chronic LC50	2x-Annually	Composite	Effluent

This draft permit contains a list of Priority Pollutants in Attachment B, identical to the EPA's list that was developed over 40 years ago. Many toxic contaminants have been discovered since then in addition to PFAS. In 2018, when PFAS were discovered in the drinking water wells in North Bennington, Vermont did not rely on the EPA's PFAS limit. Vermont created a state limit of PFAS in drinking water that was much stricter than that suggested by the EPA. This is a precedent they should use again.

In February of this year, a peer reviewed paper written by experts from the University of Missouri and the USDA forest service, prioritized landfill pollutants based on toxicity. In their conclusion, they produced a list of the 40 most toxic compounds found in landfill leachate based on a number of toxicity factors. 15 of the 40 compounds prioritized in this paper are not on the EPA's Priority Pollutant list. These compounds should be included in this draft permit.

In 2015, research from the US Geological Survey detailed that landfill leachate is host to numerous contaminants of emerging concern. Leachate samples were collected from 22 municipal solid waste landfills in 12 states, including Maine and Vermont. The leachate was analyzed for 190 chemicals of emerging concern, including pharmaceuticals. 101 of the 190 compounds were found in leachate. Many of these are not listed on the EPA's priority pollutant list, but should be included in this draft permit.

Who was responsible for determining which list of Priority Pollutants would be included for sampling and analysis? This should be determined by the objective, third party lab contracted by ANR, not the Permittee. These parameters must be as stringent as possible and maintained up to date with current parameters, which are transforming with the same frequency as the leachate pretreatment technologies they are meant to correlate with to ensure highest standards for efficacy in scrubbing landfill toxins from leachate.

Notes on Receiving WWTF Monitoring Requirements:

¹ WWTF samples shall be paired to account for detention time throughout the WWTF.

² WWTF influent samples shall be collected at a point following the introduction of leachate, septage, and other hauled wastes, and prior to any sidestreams returned to the headworks from operations within the WWTF. WWTF effluent samples shall be collected at the point used for WWTF NPDES Permit compliance. Solids samples shall be collected in accordance with 40 C.F.R. Part 503.8 and at the point used for compliance with the WWTF's Vermont Sludge Management Plan.

³ Influent, effluent, and solids samples shall be collected on days when leachate has been received by the WWTF.

⁴ Influent, effluent, and solids PFAS shall be analyzed utilizing E.P.A. modified Method 537 Version 1.1, incorporating isotope dilution, in accordance with Department of Defense (DoD) Quality Systems Manual (QSM) 5.2. The Permittee shall report the influent and effluent results of the PFHxS, PFHpA, PFNA, PFOS, and PFOA, in addition to the list of PFAS compounds specified in Attachment A, in nanograms per liter (ng/L). Solids PFAS shall be reported in nanograms per gram (ng/g). For influent and effluent testing, the method shall meet a target MDL for PFHxS, PFHpA, PFNA, PFOS, and PFOA of no greater than 2 ng/L. The Permittee shall utilize a Clean Water Act multilab validated method for PFAS, when a sufficiently sensitive test procedure (i.e., method) has been approved under 40

C.F.R. Part 136.

⁵ See Attachment B. for a list of 40 C.F.R. Part 423 Priority Pollutants.

⁶ Total Metals shall include: Antimony, Arsenic, Beryllium, Cadmium, Copper, Chromium, Iron, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc.

⁷ Priority Pollutants shall be analyzed by a Clean Water Act method approved under 40 C.F.R. Part 136.

⁸ WET testing shall occur twice per year, once during the August through October (summer) season and once during the January through February (winter) season. Summer WET results shall be reported by December 31 of that year. Winter WET results shall be reported by June 30 of that year. WET shall coincide with Priority Pollutant monitoring. The Permittee shall conduct two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) modified acute/chronic WET tests (48-hour acute endpoints within a 7-day chronic test) on a composite effluent sample. Total Ammonia shall be measured in the highest concentration of test solution at the beginning of the test. If chlorine is used in the WWTF's system, Total Residual Chlorine shall be measured in the highest concentration of test solution at the beginning of the test. The WET tests shall be conducted according to the procedures and guidelines specified in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (both documents U.S. EPA October 2002 or, if a newer edition is available, the most recent edition). The Permittee may request the use of lab water for controls and dilution if: acquiring receiving water is hazardous due to weather or topography; previous WET tests have shown that receiving water has and poor performance in the lab controls or dilution; and/or requested by Permittee and approved by the Secretary.

⁹ Samples shall be collected once between January 1 and June 30 and once between July 1 and December 31.

d. Progress Reports:

Each calendar quarter the Permittee shall submit a progress report to the Secretary, outlining the work performed in accordance with the approved Plan specified in Condition I.A.5. **This section appears to be prepared by and for the applicant. Authority for reporting requirements should be reserved exclusively to the regulator, ANR, not the Permittee. Reports should include work performance measured against previously established ANR plans and objectives; plan compliance; tracking; results; penalties for non-compliance.**

Progress reports shall be submitted in accordance with the following schedule:

- i. Work performed during **calendar quarter one (January 1 – March 31)** shall be submitted by **April 15th of that calendar year**;
- ii. Work performed during **calendar quarter two (April 1 – June 30)** shall be submitted by **July 15th of that calendar year**;
- iii. Work performed during **calendar quarter three (July 1 – September 30)** shall be submitted by **October 15th of that calendar year**;
- iv. Work performed during **calendar quarter four (October 1 – December 31)** shall be submitted by **January 15th of the following calendar year**.

The progress reports shall include the following:

- i. A description of the work performed by the Permittee during the calendar quarter towards compliance with the Plan and schedule specified in Condition I.A.5.;
- ii. Results of Receiving WWTF monitoring specified in Condition I.A.5.c.;
- iii. An assessment of whether the Permittee is on schedule to comply with the approved Plan and schedule; and
- iv. If the Permittee is not on-track with the approved Plan and schedule, the steps the Permittee will take to comply with the approved Plan and schedule.

e. Final Report:

What EPA conditions and factors, or other considerations, motivate the hurried timeline when no pre-treatment requirements have been made by the State on the landfill owner-operator over its 25-year plus history? Short-cuts in time and expense can put in jeopardy the optimum selection of pilot project siting in the state, based upon the best geology, combined with the factor of proximity to population centers which generate the majority of the waste, producing such toxic leachate. It puts into jeopardy proper evaluation of currently emerging technologies to treat a wide range of contaminants present in landfill leachate, not just the large family of PFAS. We encourage transparency by ANR as to its timeline motivations: will it coincide with expiration of the extended moratorium of leachate treatment at the Newport WWTF? Please answer as to disposition of pre-treated landfill leachate effluent during the pilot project period and after 2026.

Any Final Report submitted by the Permittee should be under the review and approval of a certified Engineer selected by ANR. ANR should be in authority throughout, select an independent, third-party Engineer with experience in the technology of leachate pretreatment to filter CECs including PFAS, who like a clerk-of-the-works in any public works building project, is present full -time to oversee the building of the pilot project, and responsible for periodic and final reports, reportable to ANR. Credibility of the independence of ANR in its oversight responsibilities needs restoration. It begins by establishing assured third-party audits of permittee's operations and conformance to stated plan development, monitoring for compliance to schedule and performance standards outcomes, as established by ANR, not the Permittee.

By no later than three years following the effective date of this permit, the Permittee shall complete the pilot study and submit a Final Report approved by a Professional Engineer. What type of Engineer? Must specify “an engineer with experience in the field of leachate pretreatment technology. The same engineer contracted by ANR to provide objective, third party oversight in preceding steps in the process, who is experienced in leachate pretreatment technology and familiar with every step of the process up until this point.” The report must include the following:

- i. A general (?) summary of the project and a discussion of the effectiveness of the piloted technology(s) in removing PFAS and other conventional, nonconventional,

and toxic pollutants; **“A general summary...and discussion..” seems insufficient to determining the effectiveness of the pilot study. Data must be produced demonstrating effectiveness in removing all of the priority pollutants from the most up-to-date list and including all toxics identified in analysis of leachate from all landfill sources.”)**

- ii. A determination of the **achievable effluent quality** of the technology(s) **(according to the capacity of the chosen technology and parameters for updated Priority Pollutants? Will a comparison with other real-world applications of alternative leachate pretreatment technologies be required? How will we know if this is the most effective technology?)**
 - iii. A description of all sampling and testing performed. Present the complete set of all the influent, process control, effluent, operational, performance, economic, **residuals Say more!**, and **air quality Say more! Residuals- how they will be handled and disposed of safely, and air emissions, how they will be monitored and scrubbed for pollutants prior to release into the atmosphere- are an extremely important part of the planning and execution** data obtained. Include summaries and interpretations of the data, **including but not limited to percentage removal of water quality parameters of concern; Again, water quality parameters must be set by a qualified independent consultant, not the Permittee, and must include all Priority Pollutants from the most up-to-date list of CECs, including PFAS.**
 - iv. A description of any operational problems and treatment system limitations encountered during the pilot testing **(and how these will be addressed to achieve the maximum efficacy required by ANR);**
 - v. An assessment of the feasibility for full scale implementation and recommendations to achieve full scale implementation **(to achieve the maximum efficacy required by ANR);** and
 - vi. **Cost estimates for full scale implementation**, including capital costs and operation and maintenance costs. **(Again, where is the requirement to ensure the most effective, not the most cost-effective technology and monitoring system will be chosen?)**
- f. This permit may be reopened to adopt the approved Plan and associated implementation schedule, or to include a compliance schedule for the full-scale implementation of successful pilot treatment and/or pretreatment technologies. **(With the same requirements for review and comment by the public?)**

6. Prohibited Discharges

a. General Prohibitions

- i. The Permittee may not introduce **into a WWTF** any pollutants which cause pass through or interference. **How does this apply to the direct discharge into surface waters, perhaps including the Black River, as suggested in other documents received from ANR in FOIA request? The pass-through language applies to WWTFs.**

ii. Affirmative Defenses

1. The Permittee shall have an *affirmative defense* in any action brought against it alleging a violation of the general prohibitions established in paragraph (a)(i) of this section and the specific prohibitions in paragraphs (b)(iii), (b)(iv), (b)(v), (b)(vi), and (b)(vii) of this section where the Permittee can demonstrate that: **So many ways provided to avoid accountability by the Permittee. Please clarify- is this text provided by Permittee's or ANR's legal counsel? What language would best protect the interest of protecting Vermont's natural resources, environment and public health?**

- a. It **did not know or have reason to know that** its discharge, alone or in conjunction with a discharge or discharges from other sources, would cause pass through or interference; and **since when is ignorance a defense? and does this apply to discharge into a river? Why would the state provide an affirmative defense which would encourage polluters to "look the other way"?**

- b. (A) A local limit designed to prevent pass through and/or interference, as the case may be, was developed in accordance with 40 C.F.R. § 403.5(c) for each pollutant in the Permittee's discharge that caused pass through or interference, and the Permittee was in compliance with each such local limit directly prior to and during the pass through or interference; or
(B) If a local limit designed to prevent pass through and/or interference, as the case may be, had not been developed in accordance with 40 C.F.R. § 403.5(c) for the pollutant(s) that caused the pass through or interference, the Permittee's discharge directly prior to and during the pass through or interference did not change substantially in nature or constituents from the Permittee's prior discharge activity when the WWTF was regularly in compliance with the WWTF's NPDES permit requirements and, in the case of interference, applicable requirements for sewage sludge use or disposal. **This reads like a loophole designed to get around the requirement.**

b. Specific Prohibitions

In addition, the following pollutants shall not be introduced into a WWTF:

- i.** Pollutants which create a fire or explosion hazard in a WWTF, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test method specified in 40 C.F.R. § 261.21.;
- ii.** Pollutants that will cause corrosive structural damage to the WWTF, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges;
- iii.** Solid or viscous pollutants in amounts which will cause obstruction to the flow in the WWTF resulting in interference;
- iv.** Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the WWTF;
- v.** Heat in amounts which will inhibit biological activity in the WWTF resulting in interference, but in no case heat in such quantities that the temperature at the WWTF treatment plant exceeds 40°C (104 °F) unless the Secretary, upon request of the WWTF, approves alternate temperature limits;
- vi.** Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
- vii.** Pollutants which result in the presence of toxic gases, vapors, or fumes within the WWTF in a quantity that may cause acute worker health and safety problems;
- viii.** Any trucked or hauled pollutants, except at discharge points designated by the WWTF.

B. REAPPLICATION

If the Permittee desires to continue to discharge after the expiration of this permit, the Permittee shall reapply on the application forms then in use at least 180 days before this permit expires.

Reapply for a Discharge Permit by: **March 31, 2026**

C. OPERATING FEES

This discharge is subject to operating fees as required by 3 V.S.A. § 2822.

D. MONITORING AND REPORTING

1. Sampling and Analysis **This is all in the Permittees hands! Why is the Permittee , as opposed to an objective third-party, permitted to perform this sampling? Where is the regulatory authority required of the ANR to meet its mission statement to protect natural resources and the health and safety of the environment and the public? Where is the objective third-party oversight?**

The sampling, preservation, handling, and analytical methods used shall conform to the test procedures in 40 C.F.R. Part 136, **(again, the updated list of Priority Pollutants, and test procedures for same must be required by ANR)** except where other procedures are expressly referenced. **(Under what circumstance would other procedures be expressly referenced?)** Where other procedures are expressly referenced, the **Permittee (will cooperate with the objective third party entity contracted by ANR)** shall **follow (to ensure)** the sampling, preservation, handling, quality assurance, and quality controls associated with that procedure.

The Permittee (will cooperate with the objective third party entity contracted by ANR) shall use **(to ensure)** sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 for the analysis of the pollutants or pollutant parameters specified in Condition I.A. above. Where 40 C.F.R. Part 136 **(the most comprehensive and up-to-date list of Priority Pollutants)** does not include sampling or analytical techniques for the pollutants in question, sampling and analyses shall be performed **(by the independent, objective, third-party entity contracted by ANR)** using validated analytical methods or other sampling and analytical procedures, approved by the Secretary.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. **The Permittee (will cooperate with the objective third party entity contracted by ANR) (who)** shall identify the effluent sampling location used for each discharge.

2. Reporting

The **Permittee (in cooperation with the objective third party entity contracted by ANR)** is required to submit monthly reports of monitoring results on DMR form WR-43. Reports are due on the 15th day of each month, beginning with the month following the issuance date of this permit. All laboratory analytics and a chain of custody for all sampling shall be submitted as an attachment to the monthly monitoring reports.

The Chief Operator of the receiving WWTF shall be copied on signed DMRs and all other reports required herein.

The Permittee shall electronically submit its DMRs via Vermont's on-line electronic reporting system. The Permittee shall electronically submit additional compliance monitoring data and reports specified by the Secretary. When the Permittee submits DMRs using an electronic system designated by the Secretary, it is not required to submit hard copies of DMRs. The link below shall be used for electronic submittals.

<https://anronline.vermont.gov/>

If, in any reporting period, there has been no discharge, the Permittee must submit that information by the report due date.

All reports shall be signed:

- a. In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the report originates;
- b. In the case of a partnership, by a general partner;
- c. In the case of a sole proprietorship, by the proprietor; or
- d. In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

In addition to the monitoring and reporting requirements given above, daily monitoring of certain parameters for operational control shall be submitted to the Secretary on the DMR form WR-43. Operations reports shall be submitted monthly. **(Where is the language that would dictate who/how these reports will be monitored and inadequacies in reporting addressed?)**

3. Recording of Results Again, this is all in the Permittees hands! Why is the Permittee permitted to do all of this recording? Where is the regulatory authority required of the ANR? Where is the objective oversight?

(The independent, objective, third-party entity/lab contracted by ANR, and t)he Permittee shall maintain records of all information resulting from any monitoring activities required, including:

- a. The date, exact place, and time of sampling or measurement;
- b. The individual(s) who performed the sampling or measurements;
- c. The dates and times the analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques and methods used, including sample collection handling and preservation techniques;
- f. The results of such analyses;
- g. The records of monitoring activities and results, including all instrumentation and calibration and maintenance records; and
- h. The original calculation and data bench sheets of the individual who performed analysis of the influent or effluent pursuant to requirements of this permit.
- i. For analyses performed by **(an objective, third-party with no previous ties to the Permittee) contract laboratories (contracted/ approved by ANR upon consulting with objective oversight):**
 - i. The detection level reported by the laboratory for each sample; and
 - ii. The laboratory analytical report including documentation of the QA/QC and analytical procedures.

The results of monitoring requirements shall be reported (in the units specified) on the DMR form WR-43 or other forms approved by the Secretary.

When “non-detects” are recorded, the method detection limit shall be reported and used in calculating any time-period averaging for reporting on DMRs.

4. Additional Monitoring

If the **Permittee** (replace with **“The independent, objective, third-party entity/lab contracted by ANR”**) monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form WR-43. Such increased frequency shall also be indicated.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties pursuant to 10 V.S.A. Chapters 47, 201, and/or 211. Any anticipated facility alterations or expansions or process modifications which will result in new, different, or increased discharges of any pollutants must be reported by submission of a new permit application or, if such changes will not violate the effluent limitations specified in this permit (according to whose judgment?), by notice to the Secretary and the WWTF of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. Noncompliance Notification **The language re: non-compliance is entirely unacceptable here. How would ANR know of non-compliance if Permittee does not self-report? Strict on-site oversight by an objective third-party with expertise in this technology must be ensured.)**

- a. **The Permittee shall** give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- b. **The Permittee shall** give advance notice to the Secretary of any changes at its facility affecting the potential for a slug discharge.
- c. **The Permittee shall** notify the Secretary and WWTF immediately of all discharges that could cause interference, upset, or damage at the WWTF, including slug loadings.
- d. **The Permittee shall promptly notify the Secretary and WWTF in advance of any substantial change in the volume or character of pollutants in its discharge.**
- e. **In the event the Permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:**
 - i. **Breakdown** or maintenance of waste treatment equipment (biological and physicalchemical systems including all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units);
(This happened in Bethlehem, NH, Spring, 2021, 153,000-gallon leachate spill)

Accidents caused by human error or negligence; (This also happened in Bethlehem, NH, Spring, 2021)

- ii. Any unanticipated bypass or upset which exceeds any effluent limitation in the permit; **By what means will this be determined?**
- iii. Violation of an effluent limitation for any of the pollutants listed by the Secretary in this permit; or
- iv. Other causes such as acts of nature, **(In this age of climate change and extreme climate events, this requires the siting of the Leachate Pretreatment pilot project, as well as the full-scale implementation (since in all likelihood they will be one and the same) to be in a geographically sound place in accordance with current EPA regs for landfill siting, including nowhere near wetlands as is now the case in Coventry, VT.)**

The Permittee **(in cooperation with ANR approved qualified consultant designated to provide onsite oversight)** shall provide notice as specified in subdivision (e) of this subsection.

- f. The Permittee shall notify the Secretary and Chief Operator of [WWTF] **within 24 hours of becoming aware** of any permit noncompliance and shall provide the Secretary with the following information, in writing, within five days: **(It must be noted that in the Bethlehem, NH, 2021 leachate spill of 153,000 gallons, the spill went unnoticed for two days and subsequent response to the spill by NCES was deemed insufficient by New Hampshire State Environmental authorities. The language should read, “immediately upon becoming aware of any permit non-compliance”.)** <https://www.nhpr.org/nh-news/2021-07-22/nh-casella-landfill-bethlehem>
<http://indepthnh.org/2021/07/22/bethlehem-landfill-cited-for-operational-deficiencies/>
- i. Cause of non-compliance;
A description of the non-complying discharge, **including its impact upon the receiving water, if any; (It must not be left to the Permittee to determine the “impact upon the receiving water”, which should also read, “including ground water as well as surface water”. The Federal Government has pending lawsuits alleging that the NCES Bethlehem, NH site has polluted the nearby Ammonoosuc River. This is just one of many examples of environmental pollution related to NCES, etc./ Casella operations.**
<https://img1.wsimg.com/blobby/go/3a99e672-2796-498c-8250-9aae47365deb/downloads/Casella%20Fines-Violations%202021%20updated.pdf?ver=1626438029504>

- ii. A description of the non-complying discharge, including its impact upon the receiving water, if any;
Why would the Vermont ANR entrust the same corporation with this responsibility in this case, especially when the final, full-scale implementation of the pilot project will bring upwards of 100,000 gallons per day, (and more if import from Bethlehem NH NCS landfill is permitted) of leachate to the leachate pretreatment facility? The case becomes more clear that the State of Vermont must take full control and responsibility of every phase of the leachate pretreatment process- from choosing the technology to siting, and every subsequent step in the process. Vermont's Solid Waste, including Leachate Pretreatment technology and processing, must be managed as a public utility as vital to the daily lives of Vermonters as water and sewer, electricity or internet access.)
- iii. **Anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;**
- iv. **Steps taken by the Permittee to reduce and eliminate the non-complying discharge; and**
- v. **Steps to be taken by the Permittee to prevent recurrence of the condition of noncompliance. (These cannot be left to the Permittee to determine. Strict oversight by the ANR must be required to inform what steps will be taken, in the timeliest manner, and how to ensure there will be no recurrence of the condition of non-compliance.)**

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

- a. The Permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment and control facilities and systems (and related appurtenances) installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. **(Who is setting the standard for efficiency? The Permittee? Where is the regulatory oversight required of ANR? ANR must contract with an objective, experienced third-party entity to set, oversee and ensure compliance with Quality Assurance standards designed to address all of the above.)** This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the Permittee only when the operation is necessary to achieve compliance with the conditions of this permit. **(This language is too loose given the serious environmental consequences**

of insufficient back-up or auxiliary facilities... should read “which are installed by the Permittee in compliance with conditions of this permit that align with performance standards and regulatory requirements determined by objective third-parties with experience in this technology.”)

- b. The Permittee shall provide an *adequate operating staff which is duly qualified* to carry out the operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit. **(Who will determine what is “adequate” or who is “duly qualified” ? Only an objective third party with experience in leachate pretreatment technology, contracted by ANR, must make these determinations.)** Staff will be aware of the terms of this Permit which pertain to their duties and a copy of the Permit shall be available for their reference. **(And staff must be required to sign and date an individual copy to maintained on record as proof that they are aware of and understand their responsibilities to ensure compliance with the Permit.)**
- c. The operation and maintenance of this facility shall be performed only by qualified personnel **who are licensed as required** by Secretary and the Director of the Vermont Office of Professional Regulation. **(Where can the licensing standards be found? Do they exist? Shouldn't other regulations specific to qualifying personnel, promulgated as administrative procedures require and specific to leachate pretreatment technology, also be applied?)**

4. Quality Control (The ANR must take full responsibility here as well, by contracting with an objective, experienced, third-party to determine standards for calibration, maintenance procedures, periodicity, and must maintain records, and conduct laboratory proficiency test in cooperation with an independent third-party laboratory according to the most current list/ for Priority Pollutants.)

The Permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The Permittee shall keep records of these activities and shall provide such records upon request of the Secretary.

The Permittee shall conduct an annual laboratory proficiency test (via a qualified laboratory) for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by this permit. Results shall be submitted to the Secretary by December 31, annually.

5. Bypass of WWTF

Bypass is prohibited, except where authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. § 1268. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the activity in order to maintain compliance with the conditions of this permit. **(Could this be clarified?)**

6. Duty to Mitigate

The Permittee shall take all reasonable steps **(according to whom? This is inadequate language considering the consequences to “the waters of the State, the environment, or human health resulting from non-compliance”)** to minimize or prevent any adverse impact to waters of the State, the environment, or human health resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring *as necessary* to determine the nature and impact of the non-complying discharge. **(Who will make this determination as to “accelerated or additional monitoring as necessary? The Permittee? ANR must assume responsibility for this with consultation with expert and objective third-party.)**

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, all calibration and maintenance of instrumentation records and all original chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained for a minimum of three years, and shall be submitted to the Secretary upon request. This period shall be extended during the course of unresolved litigation regarding the discharge of pollutants or when requested by the Secretary or the Regional Administrator.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated, and disposed of in accordance with 10 V.S.A. Chapter 159 **(In all likelihood these screenings, sludges and solids will be so highly toxic that the 10 V.S.A Chapter 159 must be rewritten to forbid spreading on land as is currently allowed (this should have happened already! Further, the “screenings” as they relate to filters used to scrub leachate for toxins must be handled much like hazardous, even nuclear, waste, given the “forever” nature of many of these chemical and metal substances. Special handling and storage procedures for encapsulation and destruction of residuals must be developed by qualified and experienced leachate treatment engineers and compliance with these overseen exclusively by ANR in order to prevent release of toxic landfill chemicals into the environment once captured by this leachate pretreatment process.)** and with the terms and conditions of any certification, interim or final, transitional operation authorization, or

order issued pursuant to 10 V.S.A. Chapter 159 that is in effect on the issuance date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the Permittee's discharge is covered under an emergency pollution permit under the provisions of 10 V.S.A. § 1268. **(What is this? Seems unlikely that this law is stringent enough to apply to Leachate Pretreatment given the highly toxic nature of landfill leachate.)** The Permittee shall notify the Secretary of the emergency situation by the next working day, unless notice is required sooner under Section II.A.2. **(This should read "immediately" not "by the next working day". These are highly toxic chemicals we are talking about here. Further, this underscores the necessity to ensure that the leachate pretreatment pilot project, much less the full-scale implementation of same, must not be sited anywhere near a drinking water source in order to ensure the health and safety of all those who drink from it. Accidents do happen- witness, for example, Bethlehem, NH landfill owned and operated by NCES, Casella.)**

10 V.S.A. § 1268 reads as follows:

When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The permit may be issued without prior public notice if the nature of the emergency will not provide sufficient time to give notice; provided that the secretary shall give public notice *as soon as possible but in any event no later than five days after the effective date of the emergency pollution permit*. **(This language is entirely insufficient to the requirement that the public be informed immediately of any emergency related to such toxic threat to the environment and public health.)** No emergency pollution permit shall be issued unless the applicant certifies and the secretary finds that:

- (1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the state **(How does this apply to international waters?)** during the limited period of time of the emergency;
- (2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant; **(What would constitute an extreme hardship upon the applicant? Is the applicant the Permittee?)**
- (3) the granting of an emergency pollution permit will result in some public benefit; **(for example, warning about hazard to the public drinking water source?)**

(4) the discharge will **not be unreasonably harmful** to the quality of the receiving waters; **(There is no such thing as “not unreasonably harmful” when it comes to toxic landfill leachate.)**

(5) the cause or reason for the emergency is not due to willful or intended acts or omissions of the applicant. **And what if it is due to negligent or accidental acts of omission?**

Application shall be made to the Secretary at the following address: Agency of Natural Resources, Department of Environmental Conservation, One National Life Drive, Main Building, 2nd Floor, Montpelier VT 05620-3522.

10. Power Failure

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the Permittee shall either:

- a. Provide an **(fail-safe)** alternative power source sufficient to operate the wastewater treatment and control facilities, or if such alternative power source is not in existence; **Is this what caused the May, 2021 Bethlehem, NH leachate disaster?)**
- b. Halt, reduce, or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater treatment and control facilities. **(What is the Plan B to ensure this will happen in a timely manner?)**

11. Falsifying Information

Knowingly making any false statement or any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate, is a crime and may result in permit revocation and the imposition of criminal and civil penalties. (This assurance can only be possible by contracting with an objective, experienced, third-party to provide strict oversight as described in all previous comments.)

B. RESPONSIBILITIES

1. Right of Entry: **The Permittee shall allow the Secretary or authorized representative, upon the presentation of proper credentials: This is completely unacceptable. Who is in charge here? Should read “The Secretary or authorized representative shall have authority to do (a. to d.) at any time deemed necessary in order to ensure compliance with any and all regulations or Permit conditions in the interest of protecting the health and safety of the public and the environment.”**

- a. To enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. To have access to and copy, at **reasonable** times, any records required to be kept under the terms and conditions of this permit;
- c. To inspect, at **reasonable** times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. To sample or monitor, at **reasonable** times, for the purposes of ensuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2. **Transfer of Ownership or Control (Point being this isn't about who the owner-operator is now, because it can change on a moment's notice in the future. That's why all this "Permittee" language has to be rewritten to place the regulatory authority in the hands of the State ANR.)**

This permit is not transferable without prior written approval of the Secretary. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Secretary **at least 30 days in advance of the proposed transfer date**. The notice to the Secretary shall include a written agreement between the existing and new Permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them. The Permittee shall also inform the prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include at a minimum:

- a. The name and address of the present permittee, the name and address of the prospective permittee, and the applicable processing fee.
- b. **A written statement (this language should be more explicit)** from the prospective owner or operator certifying:
 - i. The conditions of the operation that contribute to, or affect, the discharge will not be **materially different** ?under the new ownership;
 - ii. The prospective owner or operator **has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit; (How will this be verified? Signature required?)** and

iii. The prospective owner or operator *has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit. (How will this adequacy be verified and will closing costs, emergency funding, etc. be required to be adequate according to EPA projections, as is not currently the case for NEWSVT on the Coventry site.*

c. The proposed date of transfer.

The Secretary may require additional information (**for example?**) dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality (This seems inappropriate considering the degree of risk to public and environmental health and safety which the ANR is liable and accountable for when it comes to managing highly toxic substances such as those contained in landfill leachate.)

Pursuant to 10 V.S.A. § 1259(b):

Any records or information obtained under this permit program that constitutes trade secrets under 1 V.S.A. § 317(c)(9) shall be kept confidential, except that such records or information **may be disclosed** (**“will be disclosed”- no NDAs here**) to authorized representatives of the State and the United States when relevant to any proceedings under this chapter.

Claims for confidentiality for the following information will be denied:

- a. The name and address of any permit applicant or Permittee.
- b. Permit applications, permits, and effluent data.
- c. Information required by application forms, including information submitted on the forms themselves and any attachments used to supply information required by the forms.

4. Permit Modification, Suspension, and Revocation

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
or

- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance shall not stay any permit condition.

The Permittee shall provide to the Secretary, **within a reasonable time, (Again, according to whom?)** any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Secretary upon request, copies of records required to be kept by this permit.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Clean Water Act **for a toxic pollutant which is present in the Permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, (which is highly likely due to the fact that science and understanding of toxicity of known and emerging contaminants of concern is evolving literally moment to moment,)** then this permit shall be modified or revoked and reissued in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under **10 V.S.A. § 1281. (Again, a reminder that this legislation needs to be revisited and soon to ensure it is up-to-date with rapidly evolving toxins and standards.)**

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, (such as?) may be discharged at the maximum frequency and maximum level identified in the application, provided:

- a. They are not:
 - i. Designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, **("now or in future iterations")** or

- ii. Known to be hazardous or toxic by the Permittee, **(is ignorance a defense here? Why would this provision be tied to the knowledge of the Permittee?)** except that such materials indicated in (i) and (ii) above may be discharged **in certain limited amounts** with the written approval of, and **under special conditions** established by, the Secretary or **his/her designated representative**, if the substances will not pose any **imminent** hazard to the public health or safety; **(according to whom/ what standards or regulations?)**
- b. The discharge of such materials will not violate the **(current or future)** Vermont Water Quality Standards; and
- c. The Permittee is not notified by the Secretary to eliminate or reduce the quantity of such materials entering the watercourse. **Why would this notice not occur?**

8. Enforcement

a. Penalties for Noncompliance

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

Except as provided in “Bypass” (Condition II.A.5), and “Emergency Pollution Permits” (Condition II.A.9), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

Pursuant to 40 C.F.R. § 403.8(f)(1)(vi)(A), the Secretary may seek injunctive relief for noncompliance with this permit and seek or assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation.

Civil and criminal penalties for noncompliance are also provided for in 10 V.S.A. Chapters 47, 201, and 211. As of the effective date of this permit, those penalties, which are subject to statutory change, are as follows:

- i. Pursuant to 10 V.S.A. Chapter 47, a civil penalty not to exceed \$10,000.00 a day for each day of violation.
- ii. Pursuant to 10 V.S.A. Chapter 47, a fine not to exceed \$25,000.00 or imprisonment for not more than six months, or both.
- iii. Pursuant to 10 V.S.A. Chapter 47, any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained by this permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method

required to be maintained by this permit, shall upon conviction, be punished by a fine of not more than \$10,000.00 or by imprisonment for not more than six months, or by both.

- iv. Pursuant to 10 V.S.A. Chapter 201, a penalty of not more than \$42,500.00 for each determination of a separate violation. In addition, if the Secretary determines that a violation is continuing, the Secretary may assess a penalty of not more than \$17,000.00 for each day the violation continues. The maximum amount of penalty assessed under this provision shall not exceed \$170,000.00.
- v. Pursuant to 10 V.S.A. Chapter 211, a civil penalty of not more than \$85,000.00 for each violation. In addition, in the case of a continuing violation, a penalty of not more than \$42,500.00 may be imposed for each day the violation continues.

b. Annual Publication Given that Casella has been in significant violation in other states in the past, how does this history apply here? So, Vermont can do business even when this or any industries have been out of compliance, or worse, in other states?

A list of all industrial users **which were in significant violation** of wastewater discharge requirements during the twelve (12) previous months may be annually published by the Secretary in a newspaper or newspapers in general circulation in Vermont. Accordingly, the permittee is apprised that noncompliance with this permit may lead to an enforcement action and may result in publication of its name in accordance with this section.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

10. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

11. Other Information

If the Permittee becomes aware (and how might that be known?) that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit

application or in any report to the Secretary, it shall promptly submit such facts or information. **Or else what?**

12. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

13. Authority

This permit is issued under authority of 10 V.S.A. §§ 1258, 1259, and 1263 of the Vermont Water Pollution Control Act, the Vermont Water Pollution Control Permit Regulation, and Section 402 of the Clean Water Act, as amended.

14. Appeal

Pursuant to 10 V.S.A. Chapter 220, an aggrieved person shall not appeal this permit unless the person submitted to the Secretary a written comment during the applicable public comment period or an oral comment at the public meeting conducted by the Secretary. Absent a determination to the contrary, an aggrieved person may only appeal issues related to the person's comments to the Secretary as prescribed by 10 V.S.A. § 8504(d)(2).

Renewable Energy Projects – Right to Appeal to Public Utility Commission. If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of this decision must be filed with the Public Utility Commission pursuant to 10 V.S.A. § 8506.

This section does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects) or 10 V.S.A. Chapter 43 (dams). Any appeal of this permit must be filed with the Clerk of the Public Utility Commission within 30 days of the date of this decision; the appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(c)(2) and the Rules and General Orders of the Public Utility Commission.

All Other Projects – Right to Appeal to Environmental Division. Any appeal of this permit must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The notice of appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the notice of appeal in accordance with Rule

5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings.

Renewable Energy Projects – Right to Appeal to Public Utility Commission. If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of this decision must be filed with the Public Utility Commission pursuant to 10 V.S.A. § 8506.

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All Other Projects – Right to Appeal to Environmental Division. Any appeal of this permit must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The notice of appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the notice of appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings.

15. Definitions

For purposes of this permit, the following definitions shall apply.

Agency – means the Vermont Agency of Natural Resources.

Annual Average - means the highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/L, lbs, or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - means the arithmetic means of values taken at the frequency required for each parameter over the specified period.

Bypass – means the intentional diversion of waste streams from any portion of the industrial user's treatment facility.

The Clean Water Act - means the federal Clean Water Act, as amended (33 U.S.C. § 1251, *et seq.*).

Composite Sample - means a sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/L the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge – means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into the waters of the State.

Grab Sample – means an individual sample collected in a period of less than 15 minutes.

Instantaneous Maximum - means a value not to be exceeded in any grab sample.

Interference – means a discharge which alone, or in conjunction with discharge or discharges from other sources, both: (1) inhibits or disrupts the WWTF, its treatment process or operations, or its sludge processes, use or disposal; and (2) therefore is the cause of violation of any requirement of the WWTF’s NPDES permit (including an increase in magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum Day (maximum daily discharge limitation) – means the highest allowable “daily discharge” (mg/L, lbs, or gallons).

Mean - is the arithmetic mean.

Monthly Average (average monthly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs, or gallons) over a calendar month, calculated as the

sum of all daily discharges (mg/L, lbs, or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES – means the National Pollutant Discharge Elimination System.

Pass Through – means a discharge which exits the WWTF into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge from other sources, is a cause of a violation of any requirement of the WWTF's NPDES permit (including an increase in the magnitude or duration of a violation).

Secretary – means the Secretary of the Agency of Natural Resources or the Secretary's duly authorized representative.

Slug Loading – any discharge of nonroutine, episodic nature, including an accidental spill or a noncustomary batch discharge that has a reasonable potential to cause interference or pass through, or in any other way violate the WWTF's regulations, local limits, or permit conditions.

Waste – means effluent, sewage or any substance or material, liquid, gaseous, solid, or radioactive, including heated liquids, whether or not harmful or deleterious to waters.

Waters includes all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border upon the State or any portion of it.

Weekly Average (average weekly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs, or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/L, lbs, or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

WWTF or wastewater treatment facility shall have the same meaning as “pollution abatement facilities,” as defined under 10 V.S.A. § 1251, which means municipal sewage treatment plants, pumping stations, interceptor and outfall sewers, and attendant facilities as prescribed by the Department to abate pollution of the waters of the State.

The list below represents only a fraction of the PFAS compounds that are known to be harmful to the environment and public health. A more comprehensive list is required.

Attachment A.

Per and Poly-Fluoroalkyl Substances

Compound Name	Compound Acronym
1. Perfluorobutanoic acid	PFBA
2. Perfluoropentanoic acid	PFPeA
3. Perfluorohexanoic acid	PFHxA
4. Perfluoroheptanoic acid	PFHpA
5. Perfluorooctanoic acid	PFOA
6. Perfluorononanoic acid	PFNA
7. Perfluorodecanoic acid	PFDA
8. Perfluoroundecanoic acid	PFUnA
9. Perfluorododecanoic acid	PFDoA
10. Perfluorotridecanoic acid	PFTTrDA
11. Perfluorotetradecanoic acid	PFTA
12. Perfluorohexadecanoic acid	PFHXDA
13. Perfluorooctadecanoic acid	PFODA
14. Perfluorobutanesulfonic acid	PFBS
15. Perfluoropentanesulfonic acid	PFPeS
16. Perfluorohexanesulfonic acid	PFHxS
17. Perfluoroheptanesulfonic acid	PFHpS
18. Perfluorooctanesulfonic acid	PFOS
19. Perfluorononanesulfonic acid	PFNS
20. Perfluorodecanesulfonic acid	PFDS
21. Perfluorooctanesulfonamide	FOSA
22. 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	4:2FTS
23. 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	6:2FTS
24. 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	8:2FTS
25. N-methyl perfluorooctane- sulfonamidoacetic acid	NMeFOSAA
26. N-ethyl perfluorooctane- sulfonamidoacetic acid	NEtFOSAA

See comments 5, c. Parameters that are specific to the requirement that an up-to-date list of Priority Pollutants include all toxics specified in the Univ. of Missouri and USDA forest service peer-reviewed paper.

Attachment B.

Priority Pollutants

1. Acenaphthene
2. Acrolein
3. Acrylonitrile
4. Benzene
5. Benzidine
6. Carbon tetrachloride
7. Chlorobenzene
8. 1,2,4-trichlorobenzene
9. Hexachlorobenzene
10. 1,2-dichloroethane
11. 1,1,1-trichloroethane
12. Hexachloroethane
13. 1,1-dichloroethane
14. 1,1,2-trichloroethane
15. 1,1,2,2-tetrachloroethane
16. Chloroethane
17. (Removed)
18. Bis(2-chloroethyl) ether
19. 2-chloroethyl vinyl ethers
20. 2-chloronaphthalene
21. 2,4,6-trichlorophenol
22. Parachlorometa cresol
23. Chloroform
24. 2-chlorophenol
25. 1,2-dichlorobenzene
26. 1,3-dichlorobenzene
27. 1,4-dichlorobenzene
28. 3,3-dichlorobenzidine
29. 1,1-dichloroethylene
30. 1,2-trans-dichloroethylene
31. 2,4-dichlorophenol
32. 1,2-dichloropropane
33. 1,3-dichloropropylene
34. 2,4-dimethylphenol
35. 2,4-dinitrotoluene
36. 2,6-dinitrotoluene
37. 1,2-diphenylhydrazine
38. Ethylbenzene
39. Fluoranthene
40. 4-chlorophenyl phenyl ether
41. 4-bromophenyl phenyl ether
42. Bis(2-chloroisopropyl) ether
43. Bis(2-chloroethoxy) methane
44. Methylene chloride
45. Methyl chloride
46. Methyl bromide
47. Bromoform
48. Dichlorobromomethane
49. (Removed)
50. (Removed)
51. Chlorodibromomethane
52. Hexachlorobutadiene
53. Hexachlorocyclopentadiene
54. Isophorone
55. Naphthalene
56. Nitrobenzene
57. 2-nitrophenol
58. 4-nitrophenol
59. 2,4-dinitrophenol
60. 4,6-dinitro-o-cresol
61. N-nitrosodimethylamine
62. N-nitrosodiphenylamine
63. N-nitrosodi-n-propylamine
64. Pentachlorophenol
65. Phenol
66. Bis(2-ethylhexyl) phthalate
67. Butyl benzyl phthalate
68. Di-N-Butyl Phthalate
69. Di-n-octyl phthalate
70. Diethyl Phthalate
71. Dimethyl phthalate
72. Benzo(a) anthracene
73. Benzo(a) pyrene
74. Benzo(b) fluoranthene
75. Benzo(k) fluoranthene
76. Chrysene
77. Acenaphthylene
78. Anthracene

79. Benzo(ghi) perylene
80. Fluorene
81. Phenanthrene
82. Dibenzo(a?,h) anthracene
83. Indeno (1,2,3-cd) pyrene
84. Pyrene
85. Tetrachloroethylene
86. Toluene
87. Trichloroethylene
88. Vinyl chloride
89. Aldrin
90. Dieldrin
91. Chlordane
92. 4,4-DDT
93. 4,4-DDE
94. 4,4-DDD
95. Alpha-endosulfan
96. Beta-endosulfan
97. Endosulfan sulfate
98. Endrin
99. Endrin aldehyde
100. Heptachlor
101. Heptachlor epoxide
102. Alpha-BHC
103. Beta-BHC
104. Gamma-BHC
105. Delta-BHC
106. PCB-1242 (Arochlor 1242)
107. PCB-1254 (Arochlor 1254)
108. PCB-1221 (Arochlor 1221)
109. PCB-1232 (Arochlor 1232)
110. PCB-1248 (Arochlor 1248)
111. PCB-1260 (Arochlor 1260)
112. PCB-1016 (Arochlor 1016)
113. Toxaphene
114. Antimony
115. Arsenic
116. Asbestos
117. Beryllium
118. Cadmium
119. Chromium
120. Copper
121. Cyanide, Total
122. Lead
123. Mercury
124. Nickel
125. Selenium
126. Silver
127. Thallium
128. Zinc
129. 2,3,7,8-TCDD

From: Joanne Crowley <jcwiansmom@gmail.com>
Sent: Wednesday, November 17, 2021 2:00 PM
To: ANR - WSMD Wastewater
Cc: Shaina Kasper
Subject: Leachate in Montpelier

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Sir/Madam,

I am writing to protest the extension of Permit #3-1406.1605 requested by New England Waste Services. I am a homeowner in Montpelier. The Water Resource Recovery Facility *is not capable of removing PFAS from treated wastewater*. Other townships in Vermont have suspended accepting leachate. In these times of climate change, safe drinking water is a critical resource.

Do the right thing. Do not grant an extension on this permit request.

Sincerely,

Joanne Crowley

160 Main Street, Unit #2

Montpelier

802-223-0923

From: Karen Goetz <karen.goetz53@gmail.com>
Sent: Wednesday, November 17, 2021 11:29 PM
To: ANR - WSMD Wastewater
Subject: OPPOSE draft permit for pretreatment of landfill leachate

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I oppose the draft permit for an "experimental pilot project" for pretreatment of landfill leachate. The risks of discharging landfill leachate into Lake Memphremagog or any other Vermont body of water are too high for anything "experimental" to be acceptable. We need strict oversight of leachate disposal by the ANR, not a permit putting Casella in charge of an "experimental" process.

Sincerely,

Karen Goetz
99 Newark St
West Burke, VT 05871

From: Sybille Andersen <sybille.andersen@comcast.net>
Sent: Wednesday, November 17, 2021 7:57 PM
To: ANR - WSMD Wastewater
Subject: The hazard in the NEK

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

OK - I hear the noise of and see the trucks everyday - I live here Newport...

I see the wear and tear on our local roads. I drive in any direction and there are trucks coming this way on rt 5, rt 100, rt 58, rt 14, off of the interstate... I don't want other folks trash to poison my beautiful region - and that is what is is doing. I question the location of the dump abutting Vt Fish and Wildlife, and the Black and Barton Rivers. I worry about the fish and the folks who fish and consume them. I worry about our Québecquois neighbors who use the water for drinking... I worry about recreation and not being to allow my grandchildren to swim in the lake because we fear contamination. Stop taking everyone's trash! Let them be responsible for what they buy, consume, and dispose of in their own place. I will add statement below.

This whole project is one that is high risk for this lake. After the Coventry Select Board Meeting on Monday it was clear that the Pretreatment site is already under construction at the landfill. We understand that this is a pilot study and that finding ways to remove pfas and other chemicals from leachate is important. No conflict there. However, we are concerned with the secrecy around this, the claim from ANR that nothing has been decided although we were informed by Casella Waste that the building is in process. The potential for releasing massive quantities of "treated" leachate directly into a drinking reservoir - Lake Memphremagog cannot be underestimated. As so few chemicals are actually tested for and there are so many unknowns, the idea of releasing leachate into any body of water is insane. The Precautionary Principle should be observed.

We are also concerned that ANR has not done their due diligence - the permits requested have enough flaws to accommodate a fleet of Casella trucks.

In a context of climate change and future water scarcity, jeopardizing an international body of water, and the surrounding watershed makes no sense. Insanity has been defined as doing the same thing repeatedly and hoping for a different outcome. That is what we are doing here. Risking poisoning our greatest resource up here in Newport is insane! The lake, as was apparent this summer, is already in trouble. Why would we do anything to exacerbate the problems. Leachate has no benefits whatsoever, and has the potential for great harm.

The landfill, the only one in VT, should never have been allowed to remain in this location. Burying waste is 19th century technology. Instead of expansion, we should be finding alternatives, wasting less, not accepting out of State toxic and hazardous waste (to make up the "shortfall", pacifying the shareholders of a large corporation) and finding new solutions for leachate.

We should not remain the Sacrifice Zone of the State of Vermont. Time for some serious changes.

Sincerely,
Sybille Andersen
133 Cottage Street
Newport, VT 05855
508-325-2953

From: Billy Thompson <williamreadthompson@gmail.com>
Sent: Wednesday, November 17, 2021 1:54 PM
To: ANR - WSMD Wastewater
Subject: Enough is enough!

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I attended both meetings with you guys in Newport. I agree 100% with everything brought to your attention by those concerned and articulate citizens. No leachate experiments in Coventry. No more landfilling from all the rest of Vermont plus New Hampshire and lord know where else. I see those MBI trucks going by all day everyday. Enough is enough. We're poisoning our neighbors drinking water too.

I don't expect any response from you guys. I know you don't want it in your backyard either and you and the governor are under the gun and in the pocketbook of Cassela. So please, check your conscience and do the right thing. Respectfully, William R. Thompson, East Charleston, Vermont.

From: Polaczyk, Amy
Sent: Thursday, November 18, 2021 9:56 AM
To: ANR - WSMD Wastewater
Subject: FW: Comments on Draft Discharge Permit #3-1406
Attachments: Jubilee_Permit #3-1406WastewaterComment2021.11.02.pdf

Amy

Amy L. Polaczyk, PhD | Program Manager (she/her)
Vermont Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
802-490-6185 (cell)
<https://dec.vermont.gov/watershed/wastewater>

From: Sylvia Knight <sknightinv73@gmail.com>
Sent: Thursday, November 18, 2021 9:45 AM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Cc: Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: Comments on Draft Discharge Permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am re-submitting comments on this draft discharge permit on behalf of the Jubilee Social Justice Committee of the Cathedral Church of St. Paul in Burlington, VT.

It has come to my attention that the first copy of our comments addressed only to Sec. Moore may not have been included in the comments you have received.

Please consider our attached comments in your deliberations on this discharge permit.

Sincerely,
Sylvia Knight for the Committee
Earth Community Advocate & Researcher
Burlington, VT 05408
sknightinv73@gmail.com
pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.
["We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."](#)
[Martin Luther King, Jr.](#)

THE Cathedral 
Church OF St. Paul

LOVING | EXPLORING | SERVING
Jubilee Social Justice Committee

Julie Moore, Secretary; Pete LaFlamme; Amy Polaczyk
Agency of Natural Resources
Montpelier, VT 05620 (by email)

November 8, 2021

RE: Permit #3-1406; Wastewater Pretreatment Discharge (PIN:WY06-0020) New England Waste Services (NEWS).

Dear Ms. Moore, Mr. LaFlamme, Ms Polaczyk:

It is with deep concern that we as Vermont citizens comment on this Permit Application to discharge toxic leachate from Casella's NEWS facilities in Bethlehem NH, Coventry VT and East Montpelier into the Montpelier wastewater treatment facility (WWTF), into the Winooski River and Lake Champlain Basin.

As people of faith, we center our lives in a loving God who desires justice and care for all Creation, and calls us into covenant to care for it and for the whole human family, and to work for justice in the pursuit of the common good.

We acknowledge the sad record of White settlers taking land, culture and life from First Peoples and despoiling land and waters. Native People urge us to change our polluting ways, live in cooperation with the Earth and repair relationships with people and the Creation.

We must turn away from the outdated and destructive paradigm in which we expect waters to dilute man-made toxins regardless of the serious consequences.

We oppose Permit #3-1406 and urge you to withdraw it on several grounds:

- > it surrenders authority belonging to the State to a for-profit corporation for control and management of toxic waste including PFAS;
- > it continues the policy of dilution, a dangerous policy of discharging persistent toxins to waters of the State, threatening life and health of all in a wide area;
- > it allows and encourages import of toxic waste from urban and industrial areas of New England to Vermont, endangering people in the Lake Memphramagog and Lake Champlain watersheds, including Canadians;
- > it allows increased releases of toxic, persistent, bioaccumulating PFAS into waters of the State, including Lake Champlain, before appropriate technology is adopted to remove them from leachate;
- > it reinforces an outmoded, unjust and increasingly dangerous mode of waste management.

We urge ANR to 1) determine all toxins in the leachate and develop standards, 2) require technology to separate PFAS and other toxins from leachate, to reach zero-discharge methods, 3) use alternative energy for leachate distillation methods, 4) exclude waste and toxic leachate from Bethlehem NH, 5) work toward closure and restoration of the Coventry site. We support the expenditure of funds to prevent contamination of waters for generations to come.

Thank you for considering our comments. Please listen to the wisdom of the people of Vermont regarding this permit.

Sincerely,

Miriam Burns

Miriam Burns

Co-Chair, Jubilee Justice Committee of The Cathedral Church of St. Paul

From: Polaczyk, Amy
Sent: Thursday, November 18, 2021 7:45 PM
To: ANR - WSMD Wastewater
Subject: Fwd: Discharge Permit #3-1406 for Casella Waste Management

Amy Polaczyk,
Wastewater Program Manager
802-490-6185

From: D Bouton <dboutonvt@gmail.com>
Sent: Thursday, November 18, 2021 6:43:32 PM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Subject: Discharge Permit #3-1406 for Casella Waste Management

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I am reaching out with GRAVE concerns about this proposed permit:

1) First and foremost, it allows toxic leachate to be treated at wastewater facilities that are incapable of removing heavy metals and other toxins (as was done earlier in Burlington!). This will eventually lead to harmful, toxic pollution in the Winooski River and into Lake Champlain. How can this be justified???

2) Allowing Casella to monitor this pollution is absolutely unconscionable! Have we not learned from Love Canal and other environmental atrocities??

The Agency of Natural Resources needs to take control and NOT turn this vital function over to the very industry that has a vested interest in profiting from its business regardless of what any monitoring may reveal..

I urge you in the strongest possible way to NOT approve this permit. I have reached out to my legislators about the same.

Thank you,
Deborah Bouton

Have we learned nothing from Love Canal and other environmental atrocities? I urge

From: Judy Henchel <jchenchel@gmail.com>
Sent: Thursday, November 18, 2021 4:43 PM
To: ANR - WSMD Wastewater
Subject: pretreatment of landfill leachate permit

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good day,

We, Arthur and Judith Henchel, are writing to express our deep concern regarding the pretreatment of the landfill leachate permit. There seems to us to be a lack of transparency, a lack of specifics in this permit. We find no details regarding the location of the pretreatment facility, though at a recent Coventry Select Board meeting it was "suggested" that the landfill be there. We believe that Casella plans to discharge it right into the Black River at the landfill!

We ask that you recognize that the NEK should not be considered a dumping ground. PLEASE, reach out to environmental groups and concerned citizens and DO THE RIGHT THING for our environment and our beloved NE Kingdom.

Arthur and Judith Henchel
West Glover,
VT



Virus-free. www.avast.com

From: Gabriella Horvath <horvath.gm@gmail.com>
Sent: Friday, November 19, 2021 10:07 AM
To: ANR - WSMD Wastewater
Subject: Deny Draft Permit 3-1406
Attachments: [DUMP comments to Draft Permit 3-1406.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Vermont ANR:

As a property owner in Bethlehem NH I am writing in support of the Vermont organization D.U.M.P. and their insistence that the Draft Permit 3-1406 **be denied** and a new process begun, incorporating all the public comments received that echo similar concerns as DUMP expresses in their cover letter and mark-up of the Draft Permit, attached.

DUMP cover letter and permit markup was attached to this comment.

Thank you,

Gabriella Horvath

200 Hazen Rd,

Bethlehem NH

857-719-1883

From: Kai Mikkel Førlie <kaimikkelforlie@gmail.com>
Sent: Friday, November 19, 2021 11:25 AM
To: ANR - WSMD Wastewater
Cc: PamLadds; EXE - IQ Mail; Galloway, Anne; Annette Smith; Christine Hinkel - WCAX; Scott Waterman - WCAX; James Ehlers; paula@sevendaysvt.com; Marguerite Adelman
Subject: DENIAL of Casella's Pretreatment Discharge Permit, Coventry Landfill, Draft Permit 3-1406
Attachments: [DUMP comments to Draft Permit 3-1406 Nov 18 20.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ma'am/Sir,

I am writing today in support of DUMP's insistence that Draft Permit 3-1406 be denied and a new process begun, incorporating all the public comments received that echo similar concerns as DUMP expresses in their cover letter and mark-up of the Draft Permit" (see attached).

The solution to this problem isn't to hand over the reins of our out of control solid waste management system to a publicly listed corporation (whose only allegiance is to its share holders). The solution is to force Casella to stockpile/warehouse leachate until such time as a proven technology materializes that is able to effectively remove all the industrial toxics from leachate and render those toxics harmless. We've all witnessed the lengths to which culpable parties in Japan have gone to isolate radioactive water from the environment. That is the example Vermont should be following, not allowing Casella to further pollute our drinking water sources and/or spin a tale about treatment technology that doesn't actually exist in any meaningful form.

Meanwhile, Vermont should also prohibit the importation and local manufacture of all consumer and industrial products that contain PFAS while also fining manufacturers who insist on supplying their products in non-resuable packaging and/or selling products in-state that cannot be fully recycled (a.k.a. "cradle to grave" coverage).

Furthermore, Vermont should also immediately ban the export (and import) of all categories of sewage sludge and septage and the land application anywhere of same. These materials should be similarly stockpiled until such time as a proven and effective method for removing the 80,000 industrial chemicals likely lurking therein materializes. Absent this kind of powerful incentive, nothing will ever change.

Consumers didn't cause this problem, industry did. So, let's hold industry directly responsible while also holding its supporters (like Casella and our compromised political class) to account.

Sincerely,

DUMP cover letter and permit markup was attached to this comment.

Kai
Burlington

[Sent from my smartphone.]

From: Giannetti, Nick
Sent: Friday, November 19, 2021 8:15 AM
To: ANR - WSMD Wastewater
Subject: FW: Comments on Draft Discharge Permit #3-1406
Attachments: Jubilee_Permit #3-1406WastewaterComment2021.11.02.pdf



Nick Giannetti | Pretreatment Coordinator
Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6186 cell
Nick.Giannetti@Vermont.gov
<http://dec.vermont.gov/watershed/wastewater>

From: Sylvia Knight <sknightinv73@gmail.com>
Sent: Thursday, November 18, 2021 9:45 AM
To: LaFlamme, Pete <Pete.LaFlamme@vermont.gov>; Polaczyk, Amy <Amy.Polaczyk@vermont.gov>
Cc: Giannetti, Nick <Nick.Giannetti@vermont.gov>
Subject: Comments on Draft Discharge Permit #3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am re-submitting comments on this draft discharge permit on behalf of the Jubilee Social Justice Committee of the Cathedral Church of St. Paul in Burlington, VT.

It has come to my attention that the first copy of our comments addressed only to Sec. Moore may not have been included in the comments you have received.

Please consider our attached comments in your deliberations on this discharge permit.

Sincerely,
Sylvia Knight for the Committee

Earth Community Advocate & Researcher
Burlington, VT 05408
sknightinv73@gmail.com
pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.
["We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."](#)
[Martin Luther King, Jr.](#)

THE Cathedral 
Church OF St. Paul

LOVING | EXPLORING | SERVING
Jubilee Social Justice Committee

Julie Moore, Secretary; Pete LaFlamme; Amy Polaczyk
Agency of Natural Resources
Montpelier, VT 05620 (by email)

November 8, 2021

RE: Permit #3-1406; Wastewater Pretreatment Discharge (PIN:WY06-0020) New England Waste Services (NEWS).

Dear Ms. Moore, Mr. LaFlamme, Ms Polaczyk:

It is with deep concern that we as Vermont citizens comment on this Permit Application to discharge toxic leachate from Casella's NEWS facilities in Bethlehem NH, Coventry VT and East Montpelier into the Montpelier wastewater treatment facility (WWTF), into the Winooski River and Lake Champlain Basin.

As people of faith, we center our lives in a loving God who desires justice and care for all Creation, and calls us into covenant to care for it and for the whole human family, and to work for justice in the pursuit of the common good.

We acknowledge the sad record of White settlers taking land, culture and life from First Peoples and despoiling land and waters. Native People urge us to change our polluting ways, live in cooperation with the Earth and repair relationships with people and the Creation.

We must turn away from the outdated and destructive paradigm in which we expect waters to dilute man-made toxins regardless of the serious consequences.

We oppose Permit #3-1406 and urge you to withdraw it on several grounds:

- > it surrenders authority belonging to the State to a for-profit corporation for control and management of toxic waste including PFAS;
- > it continues the policy of dilution, a dangerous policy of discharging persistent toxins to waters of the State, threatening life and health of all in a wide area;
- > it allows and encourages import of toxic waste from urban and industrial areas of New England to Vermont, endangering people in the Lake Memphramagog and Lake Champlain watersheds, including Canadians;
- > it allows increased releases of toxic, persistent, bioaccumulating PFAS into waters of the State, including Lake Champlain, before appropriate technology is adopted to remove them from leachate;
- > it reinforces an outmoded, unjust and increasingly dangerous mode of waste management.

We urge ANR to 1) determine all toxins in the leachate and develop standards, 2) require technology to separate PFAS and other toxins from leachate, to reach zero-discharge methods, 3) use alternative energy for leachate distillation methods, 4) exclude waste and toxic leachate from Bethlehem NH, 5) work toward closure and restoration of the Coventry site. We support the expenditure of funds to prevent contamination of waters for generations to come.

Thank you for considering our comments. Please listen to the wisdom of the people of Vermont regarding this permit.

Sincerely,

Miriam Burns

Miriam Burns

Co-Chair, Jubilee Justice Committee of The Cathedral Church of St. Paul

From: Save Forest Lake <saveforestlake@yahoo.com>
Sent: Friday, November 19, 2021 8:43 AM
To: ANR - WSMD Wastewater
Subject: Draft Permit 3-1406 DENIAL
Attachments: [DUMP comments to Draft Permit 3-1406 Nov 18 2021.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Vermont ANR:

I am writing in support of the Vermont organization D.U.M.P. and their insistence that the Draft Permit 3-1406 **be denied** and a new process begun, incorporating all the public comments received that echo similar concerns as DUMP expresses in their cover letter and mark-up of the Draft Permit, attached.

DUMP cover letter and permit markup was attached to this comment.

Thank You!

Jon Swan
25 Cashman Rd
Dalton, NH 03598
(603) 991-2078
Founder, [Save Forest Lake](#)

Do not allow this proposed development to scar the beautiful landscape of the North Country for generations to come

From: Ed Stanak <stanakvt@gmail.com>
Sent: Friday, November 19, 2021 1:04 PM
To: ANR - WSMD Wastewater
Cc: Polaczyk, Amy
Subject: NEWSVT Draft Permit: Stanak Comments
Attachments: ES&NEWSVTDraftPermit.pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Attached please find comments dated November 4, 2021 with respect to the draft Pretreatment Discharge Permit that the Department of Environmental Conservation proposes to issue to NEWSVT.

Ed Stanak
Barre City VT
802-479-1931

MEMORANDUM

TO: Amy Polaczyk, Wastewater Program Manager
Department of Environmental Conservation
FROM: Ed Stanak
DATE: November 4, 2021
RE: Application 3-1406 New England Waste Services, Inc.
Draft Pretreatment Discharge Permit
Public Comments

This memorandum provides comments on the content of the draft pretreatment discharge permit issued by the Department on September 20, 2021. The permit proposes to authorize New England Waste Services of Vermont (NEWSVT) to dispose of a maximum of 60,000 gallons per day "max day" of leachate from the landfill situated in Coventry, Vermont, and from two other landfills, into the City of Montpelier Wastewater Treatment Facility (WWTF) for subsequent discharge into the Winooski River.

I am a resident of Barre City. I was employed by the State of Vermont for a number of years as an Act 250 district coordinator. I make use of the Winooski River watershed and Lake Champlain. I have reviewed the draft NEWSVT pretreatment permit and the related fact sheet. The following comments are provided for the consideration of the Department of Environmental Conservation and supplement the comments I provided orally at the October 28th public meeting in Montpelier.

Jurisdiction

1-Neither the fact sheet nor the draft permit state a jurisdictional basis for the issuance of the pretreatment permit to NEWSVT rather than the City of Montpelier as operator of the WWTF. By comparison, all land use permits issued under the provisions of 10 VSA Chapter 151 state the pertinent jurisdictional provisions for the authorized project. I am aware of the provisions in the United States Code and the Code of Federal Regulations allowing states to delegate pretreatment obligations to a private sector generator of pollutants rather than the operator of a WWTF. However, absent a clearly stated jurisdictional foundation in the draft permit, it is unclear if the Department has proceeded under appropriate Vermont enabling legislative and regulatory authority to delegate pretreatment obligations to NEWSVT.

2-The draft permit raises an additional jurisdictional question: on what basis does the Department authorize the disposal of leachate from the Bethlehem NH landfill in the Montpelier WWTF? I am aware of the US Supreme Court's holding in Philadelphia v New Jersey 437 US 617 (1978) and its progeny. However, there was a time when the Department (Solid Waste Division) took affirmative steps to ensure that the content of wastes imported to Vermont were of a content not injurious to the public health, safety and welfare. Are there appropriate provisions in Vermont law and Department regulations to authorize the

importation of industrial pollutants from out of state?

Flows

The information on leachate flows provided in the fact sheet and the draft permit appears to be incomplete and is confusing, at least to the average person. The result is an inadequate understanding of the quantity of pollutants to be disposed by NEWSVT in the Montpelier WWTF. Here are a few examples:

- 1- The fact sheet (at pages 3 and 4) does not provide quantities of leachate flows from the CV landfill or the Bethlehem NH landfill.
- 2- While information is provided for the Coventry landfill (at page 2 of the fact sheet), it is less than clear how those calculations match up with adjudicated findings of fact by the District 7 Environmental Commission in its 7R0841-13 decision (at page 28) wherein the Commission found that an average of 9.5 million gallons of leachate results annually from Phases I-IV.
- 3- While the draft permit sets a maximum daily effluent limit of 60,000 gallons, how does that limit jibe with the third paragraph on “flow” on page 4 of the fact sheet?

No Pretreatment and Dilution Is the Solution

1-Neither the draft permit nor the expired permit contain any findings or terms identifying any actual pretreatment of the “Non-Conventional Pollutant” content of the leachate prior to disposal in the Montpelier WWTF. Thus, the Department proposes to issue a pretreatment permit that does not require any pretreatment of the leachate. It also appears that the Discharge Permit for the City of Montpelier WWTF does not identify any pretreatment capabilities in that plant. As a result, the discharge into the Winooski River and/or the sludge byproduct from the WWTF will contain residue of the “Non-Conventional Pollutants”.

2-Some 40 years ago when I was a new state employee, I learned from Department staff that, in essence, “dilution is the solution”. In other words, the treatment provided by a typical municipal WWTF cannot remove certain categories of pollutants. In this context, the “7Q10 instream concentration” provisions of the fact sheet (pages 7 and 9) appear to reinforce the “dilution solution” principle.

Conditions Subsequent

The draft permit is laced with “conditions subsequent” which are invalid substitutes for sufficient evidentiary proof that satisfy applicable statutory and regulatory provisions prior to the issuance of a permit. Here are three examples among others found in the draft:

1-Special condition 5 on pages 7 through 12 of the permit is the prime example of such a “condition subsequent”. This condition requires the construction and operation of a “leachate treatment and/or pretreatment technology “facility, presumably at the Coventry site, by approximately December 2022. This condition is premised on standards developed by the applicant’s private consultant Brown & Caldwell in its October 2019 report. The Department

has not promulgated any applicable surface water standards for PFAs and the design of such a facility. Given the nine year long pendency of the pretreatment permit application, as stated on page one of the fact sheet, the Department could and should have undertaken appropriate rulemaking during that same time period in order to promulgate PFA standards for the applicant to then implement as part of the amendment application submittal required in special condition 5. Instead of appropriate rulemaking required under the provisions of 3 VSA Chapter 25, Subchapter 3, the Department has chosen the path of an impermissible “condition subsequent”. The net result of this approach by the Department is the privatization of environmental regulation.

2- Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Iron is another “condition subsequent” because it is based on the following finding on page 7 of the fact sheet reading : “ There is currently no Montpelier WWTF effluent data for Total Iron. Therefore, to further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Iron water quality standard, the draft permit requires ...quarterly monitoring...”

3-Condition I(A)(2) on page 3 of the draft permit stating monitoring requirements for Arsenic is a third “condition subsequent” because it is based on the following finding on page 8 of the fact sheet reading : “ Insufficient data was available to determine if the discharge of Total Arsenic would exceed the Consumption of Water & Organisms Human Health Water Quality Criteria. Specifically, there is currently no influent Total Arsenic data for the Montpelier WWTF. There is also no data on the removal efficiency of Total Arsenic by the Montpelier WWTF.” The fact sheet then goes on to state “ To further assess the reasonable potential of the leachate discharge and Montpelier WWTF effluent to cause or contribute to an instream toxic impact or instream excursion of the Total Arsenic water quality standard, the draft permit requires ...quarterly monitoring...”

Lack of Threshold Facts on PFA Strength

The draft permit has numerous conditions for testing and sampling of the waste stream. However, the fact sheet has no specific information on the PFA strength of the leachate collected at each landfill for delivery to the WWTF – although vague reference is made to the January 2020 Weston & Sampson sampling results. It would seem that the fact sheet should provide such threshold facts. The District 7 Environmental Commission decision refers to available groundwater PFA sampling at Coventry.

Inadequate Definitions

- 1- Page 2 in the permit [See I(A)(1)(b)] disallows the discharge of leachate into the Montpelier WWTF during “storm events, snow melt or when a storm event is imminent”. What are the relevant definitions for each of these terms? Who makes the decision to not accept the truckload of leachate? And where will the leachate then go? Additionally, with regard to the City’s role in accepting the leachate, what are the

NEWSVT contract terms with the City of Montpelier? What is the amount of annual revenue that the city will obtain from accepting the leachate ?

- 2- The term “pretreatment technologies” is relied upon in imposing special condition 5 yet there is no definition in any Department rules or policies of what the term means or what standards will apply.

Ensure Environmental Justice

Two of the most significant sources of solid wastes to the Coventry landfill facility are Chittenden and Washington counties. One supposes that, in a cynical analysis, there is an environmentally just outcome in that the “Non-Conventional Pollutants” from those wastes will now return to the watershed shared by those counties pursuant to the discharge from the City of Montpelier WWTF following the “nonpretreatment” (my term, not the Department’s) allowed by the draft pretreatment permit. The North East Kingdom and a portion of the province of Quebec have been the environmental sacrifice zone for Vermont’s solid waste disposal; Chittenden and Washington counties now join as a companion sacrifice zone. The Department should take the lead in returning the focus of the General Assembly to policies adopted over 25 years ago intended to ensure not only the reduction of the waste stream but a more equitable means of disposal. The burden cannot remain solely on the people of the North East Kingdom (and Quebec) for an indefinite period of time into the future.

In closing, I want to emphasize that I am a realist – the solid waste generated by all of us must go somewhere as must the resulting leachate. But the Department’s permitting processes, and its role as the representative of the executive branch before the legislative branch, over the decades have failed to pursue -if not force- a more just or equitable system for the disposal of the solid wastes and the leachate. And I want to be very clear: I do not fault the public employees of the Department of Environmental Conservation who merely do their jobs under the direction of supervisors and executive branch appointees. Thank you.

From: Kate Wolff <wolffbrain@gmail.com>
Sent: Friday, November 19, 2021 5:29 PM
To: ANR - WSMD Wastewater
Subject: Leachate Treatment in the Lake Memphremagog watershed.

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Having read the Pretreatment discharge permit being considered for the development of a leachate pretreatment system and facility here in the NEK on the banks of Lake Memphremagog, I am awestruck at the degree to which the State of Vermont through the Agency of Natural Resources has abdicated all responsibility for ensuring the safety and purity of our water to NEWSVT, a private company that has profit as it's sole motivation. Why on Earth has the State of Vermont gone AWOL in taking responsibility for developing, overseeing and monitoring the discharge of hundreds if not thousands of toxic chemicals into our (and Canada's) water? Surely the State officials of Vermont's environmental regulation agencies including the ANR are aware of the damage done by DuPont in discharging "Forever Chemicals" into the rivers and lands surrounding it's Ohio Teflon facility. After decades of knowingly evading responsibility and avoiding and ignoring data on the health and environmental disaster wrought by their actions they and their spin off companies finally faced lawsuits culminating in a 4 Billion dollar settlement. Is this where the ANR is taking us? First of all, by EPA regulations no landfill could legally be sited where the Coventry site is located; in a watershed to an international Lake. Secondly, the chemicals listed as chemicals of concern are woefully incomplete and outdated. Thirdly, it is legally questionable for the State of Vermont to hand off treatment, disposal and monitoring of these chemicals to the very company that profits from their disposal. How is this possible? It is only a matter of time before environmental disaster places Vermont in the shoes of DuPont. I have always had great faith in and respect for Vermont's dedication to protecting our unique state's natural beauty and environmental purity. I implore you at the ANR to re-write the draft permit to take back the power of enforcement and regulation and protect the environment and health of Vermonters and our Canadian neighbors. Thank you, Kate Wolff Brownington Vt.

From: P. Jones <carriage@sover.net>
Sent: Saturday, November 20, 2021 5:50 PM
To: ANR - WSMD Wastewater
Subject: Comment for Draft PreTreatment Permit 3-1406
Attachments: ANR Permit Comment .docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please find comment attached for Draft PreTreatment Discharge Permit 3-1406, and acknowledge that you have received it. Thank you.

Sincerely,

Polly S. Jones

Public Comment to ANR Regarding Draft Permit #3-1406

Polly Jones, Manchester and Derby, VT

378 Bentley Hill Road

Arlington, Vermont 05255

Dear Secretary Moore:

Conflicting environmental and economic pressures put ANR between a proverbial rock and a hard place regarding solid waste management in VT. I appreciate that ANR is striving to make our state a forerunner in the treatment of leachate by reducing the pollutants, including PFAS, that are pouring through our wastewater treatment facilities unfiltered now; however, Draft Permit 3-1406 is insufficient for the job.

- Section 1A notes that ANR has increased the effluent limitations for the Montpelier WWTF from 23,000 gals/day to 60,000 gals/day. If the Coventry landfill alone produces 60,000 gals/day, where will the excess leachate from Bethlehem, NH and Central VT landfills go? When the Coventry landfill is expanded in its next ANR approved phase, it will produce 100,000 gals/day. What then? What measures have ANR dictated to limit the amount of leachate produced, and why aren't they specified in the Permit?
- Section 5 states that the Permittee shall submit a Leachate Treatment Pilot Study Plan and implement it to remove PFAS and other contaminants from leachate of the Coventry, Montpelier, and Bethlehem landfills. We can agree that use of a technology to remove pollutants from leachate is necessary, but its inclusion in this document constitutes a substantial change from the previous 2012 permit and should not be added to a renewal. A separate permit is necessary.
- In Section 5a, the Draft Permit states that NEWSVT will choose a PFAS mitigating technology from the four choices outlined in the 2019 Brown & Caldwell Report that they commissioned. There is no reference to the additional technologies and concerns delineated in the Civil & Environmental Consultants Leachate Treatment Scoping study commissioned by ANR in 2020. Will they be considered? If not, why not, because these technologies are advancing rapidly. Also, none of the experimental methods listed are completely effective, and they all will have some form of residuals. Those residuals will have to be encapsulated or incinerated. We know that liners and encapsulation will degrade and will not last forever (but PFAS will!) and incineration has potentially greater widespread risk. It appears that ANR is granting a permit without a plan.

- There is no mention in the Permit of where the residuals will be stored. Based on that omission, I assume that they will be stored in the Coventry landfill: The Memphremagog watershed that we are so desperate to save from further degradation. To put either the Pilot Project or the residuals in the Coventry site would be both in breach of VT Water Quality Standards and shortsighted. The Permittee has had well publicized violations and accidents at this site and others, it would be environmentally unjustifiable to expand their exploitation of the location. I don't need to remind ANR that the site itself is in wetlands, environmentally untenable for a landfill. **The time is right now, not 20 years from now, to locate a new waste management site. Begin with the Pilot Project, its residuals and effluent.** From the NEWSVT perspective, it will be less costly for them to build a facility in the right location once, rather than relocate in a short period of time.
- Based on the Blazer report, we know that the Brown Bullhead in South Bay suffer from melanomas resulting from a combination of contaminants and possibly viruses at a higher rate than anywhere else in VT. Clearly, it is the landfill, its leachate and attendant groundwater contamination that distinguish Memphremagog from all other lakes. Our Canadian neighbors use the lake as a drinking water reservoir. Consider the consequences of breaching the Boundary Waters Treaty. Countless residents including myself have wells near the lake. It frightens me to the core that my children and grandchildren have consumed and recreated in the same water that has caused cancer in the fish. I ask again, why hasn't ANR explored treatment and dispersal outside of this fragile watershed, away from drinking water sources? To blithely continue polluting the lake and environs is indefensible.
- How does ANR, who's responsibility it is to "preserve, enhance, restore and conserve VT's natural resources" give NEWSVT the freedom to choose which method will best remove pollutants from leachate and protect us and the environment? NEWSVT and ANR are at opposite ends of the conservation spectrum. I can appreciate that Casella has more experience in waste management, but in this new field of leachate treatment, ANR should be making the data driven decisions. NEWSVT could pick the most economical strategy over the most effective. I implore you not to allow the tail to wag the dog!
- According to the first paragraph of Section 5, the Secretary will establish regulations on the permissible levels of PFAS allowed in effluent AFTER Casella constructs the system to filter it. This doesn't make sense. It is imperative that ANR reference state and national scientific research that ascertains or seeks to ascertain PFAS poisoning in humans and animals. We are relying on ANR to set the standards before the system to remove it is built. The technology must be suited to the standard, not the other way around.
- PFAS are only a fraction of the compounds to be removed. While any one of the technologies outlined will treat other contaminants, the efficacy of their removal should be as much of a priority as the PFAS. It is evident from the Permit that ANR uses the EPA list of Priority Pollutants. That list

has not been updated since 1979. Although we are grateful that ANR has added 5 PFAS to that, there are vastly more toxins for which ANR needs to test in today's leachate. The research "A systematic approach for prioritizing landfill pollutants based on toxicity: Applications and opportunities" by Elizabeth R. Rogers, Ronald S. Zalesny Jr. and Chung-Ho Lin provides a thorough framework for prioritizing landfill leachate contaminants. It is critical that ANR broaden its list of pollutants, keep them current and monitor them assiduously.

- 5e. states that 3 years after the technology is installed, the Pilot Study will be completed, and a report of its efficiency submitted to ANR. What size/scale will the Pilot Study system be? How much leachate will it be able to process? Where will the effluent from the Pilot Project be dispersed? How can we be assured that safety and effectiveness will be the guiding factors in the choice of technology, not economy? Given that the standards for filtration will be set AFTER the system is constructed and the way the Permit is written, ANR will be unable to insist that NEWSVT build a better technology should the results be the incomplete removal of toxins. It appears that ANR is willing to play roulette with the clean water standards.
- If ANR is legally challenging PFAS producing industries and attempting to curtail the sale of products containing PFAS in the state, VT should therefore have the right to ban out of state solid waste and leachate from entering because they contain them. The Interstate Commerce Clause will no longer apply.
- While I strongly agree that leachate must be treated before it enters any waterway, it bears repeating that no matter the efficacy of the technology chosen, it should not be constructed or discharged in the Memphremagog or Champlain watersheds. To do so would be irresponsible, ANR would knowingly be polluting the already compromised waters. It will cause further harm to the ground water, flora, and fauna; and in turn, damage the economies of adjacent towns in **two countries** on these lakes. No natural resources or communities should be sacrificed to make business easier for the highly profitable garbage monopoly. It's a shame that Vermont appears to be falling prey to the undue pressure of a major economic influence to the detriment of its people.
- Knowing that ANR has already granted this permit in intention, if not in fact, has deeply discouraged me. The Comment Period and open meetings appear to be hypocritical respect paid to the public. While the state will not allow a farmer to graze cows on the banks of the Battenkill, NEWSVT is Permitted to literally trash the waters from Coventry all the way to Sherbrooke! This is environmentally, economically, and morally unjust. Please, please **act now** to move leachate treatment, dispersal, and residuals away from Vermont's great, international lakes.

Respectfully,

Polly S. Jones

From: Elizabeth Nelson <lizinvermont@gmail.com>
Sent: Saturday, November 20, 2021 6:57 AM
To: ANR - WSMD Wastewater
Subject: more comment

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear ANR

Here is another very important and timely warning about PFAS in Lake Memphremagog:

https://vtdigger.org/2021/11/19/bennington-researchers-publish-study-about-pfas-contamination-from-airborne-emissions/?u=cd6808cd95&utm_source=VTDigger+Subscribers+and+Donors&utm_campaign=b502302ba4-EMAIL_CAMPAIGN_2021_11_20_04_48&utm_medium=email&utm_term=0_dc3c5486db-b502302ba4-380256453

Do we have to keep doing this harmful stupid action over and over? Can't we learn from the past?
Ban leachate processing and dumping into Lake Memphremagog and Lake Champlain.

Sincerely,
Elizabeth Nelson
West Glover VT 05875

From: Pat Kellogg <pk@kelloggsurvey.com>
Sent: Sunday, November 21, 2021 4:17 PM
To: ANR - WSMD Wastewater
Subject: DENY Draft Permit 3-1406
Attachments: [DUMP comments to Draft Permit 3-1406.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To: Vermont Agency of Natural Resources (ANR)

I am urging you to DENY the Casella/leachate "PRETREATMENT DISCHARGE PERMIT."
I insist that the Draft Permit 3-1406 be DENIED and a new process begin which incorporates all the public comments received. Attached are the comments expressed By DUMP (Don't Undermine Memphremagog's Purity) whose concerns I agree with and which need to be addressed by ANR.

Again, I urge the Vermont Agency of Natural Resources to DENY the Casella/leachate Draft Permit 3-1406.

Thank you for your attention to this matter.

Patricia Kellogg
320 Manns Hill Road
Littleton, N.H. 03561

DUMP cover letter and permit markup was attached to this comment.

From: peggy laurie <peggylaurie@hotmail.com>
Sent: Monday, November 22, 2021 8:28 AM
To: ANR - WSMD Wastewater
Subject: No Leachate Ever in Lake Memphremagog!

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I have been a resident of the Northeast Kingdom since 1983. We lived in a smaller village for 23 years, but now live in Newport. I remember our first impressions of Newport and Lake Memphremagog, and being astounded and dismayed to see old boathouses and gas filling stations lining the shores of the lake right in the downtown area. Thankfully that is no longer the case, and people have begun to realize what a treasure and an asset this lake is. That being said, while I agree that Casella should indeed be taking the lead in testing how to treat the leachate from their landfill facilities, it would be nothing but unconscionable to allow the release of this treated leachate into any watershed, river, lake, etc. Most of Lake Memphremagog is Canada's, and people north of us use this as a source of drinking water. The lake already suffers from a certain level of pollution, and for the sake of the wildlife, the environment, and our neighbors to the north, we should not be adding to the problem. We in the Northeast Kingdom already bear the burden of receiving all of the state's garbage at the Casella facility in Coventry--literally mountains that did not previously exist, and when the wind is right, the persistent scent of methane being released into the atmosphere can be detected on the west side of town, in spite of their efforts to recapture it. Enough is enough! Another solution must be found to deal with this treated leachate. The rural environment of this beautiful part of the state, and the health of our lake and our neighbors to the north should not be compromised further. Restrictions must be placed on this proposed permitting process, and no additional leachate, garbage, or any waste products that are not "ours" should be allowed to be transported and handled at the Coventry facility. Please do not allow an "experiment" to contribute to the degradation of the lake and our relationship with our northern neighbors.

Sincerely,

Peggy Laurie, Newport resident

From: Ariane Orjikh <ariane.orjikh@memphremagog.org>
Sent: Tuesday, November 23, 2021 7:29 PM
To: ANR - WSMD Wastewater
Cc: Memphremagog Conservation Inc
Subject: Memorandum - MCI
Attachments: 2021-11-24 Memorandum - Pretreatment discharge permit - MCI.pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Sir/Madam,

Attached the MCI memorandum about the Pretreatment Discharge Permit No 3-1406.

Best regards,

Ariane Orjikh,

Directrice générale

Maîtrise en biologie avec cheminement en écologie internationale

ariane.orjikh@memphremagog.org

819-574-2880

Memphrémagog Conservation inc.

51 rue Cabana, Magog (Québec) J1X 2C4

info@memphremagog.org

www.memphremagog.org



**Memphrémagog
Conservation inc.**

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Memphremagog
Conservation inc.

Magog, November 24th, 2021

Presented to:

Vermont Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division

Memorandum concerning the Draft Pretreatment Discharge Permit No 3-1406

Memphremagog Conservation Inc. (MCI) is a not-for-profit organization based in Magog, Quebec, that has been working since 1967 to protect the health of the waters and watershed of Lake Memphremagog, a reservoir of drinking water for more than 175,000 Canadians.

MCI has been closely following the Coventry land site developments for decades and expressed on several occasions their strong opposition to the expansion of this NEWSVT's solid waste disposal plant and to the disposal of landfill leachate at the Newport wastewater treatment facility (WWTF) or anywhere in the Memphremagog Watershed^{1, 2, 3}.

MCI is now raising concerns from the draft pretreatment discharge permit released on September 20th, 2021:

Maximum day discharge limit at the City of Montpelier WWTF

Since July 2019, a Secretary's Act 250 decision specifically prohibits the discharge of landfill leachate to the Newport City WWTF until "new science, new technology and/or or new data which demonstrates, or seeks to demonstrate, that the risk to the Lake Memphremagog water quality (drinking water supply) will not be unduly adverse."⁴

¹ MCI, 2011. Le MCI s'oppose fermement à l'agrandissement du site d'enfouissement de Coventry (Phase V). Communiqué.

https://vite.memphremagog.org/files/userfiles/files/Centre_de_documents/FR/2011-02-02-communique-de-presse-Coventry.PDF

² MCI, 2018. Letter to the Vermont Department of Environmental Conservation about Phase VI.

³ MCI, 2018. *Canadian Non-Government Persons and Entities Response to the Solid Waste Management Facility Certification OL510 SJ91-0001*. <https://vite.memphremagog.org/files/en/2018-12-20%20Letter%20-%20Canadian%20NGO%20response%20to%20the%20Solid%20Waste%20Facility%20Certification.pdf>

⁴ Act 250, 2019. Pursuant to Case No: 7R0841-13

Therefore, the draft pretreatment permit does not authorize a leachate discharge to the Newport City WWTF in accordance with that Act 250 decision. Only the City of Montpelier WWTF would have the authorization to receive NEWSVT leachate and also the leachate from the North Country Environmental Services (NCES), New-Hampshire, and from the Central Vermont (CV) Landfill. However, the draft permit proposes a maximum day discharge limit of 60,000 gpd to the City of Montpelier WWTF, when the NEWSVT leachate flows alone are 60,000 gallons per day and are anticipated to increase to 100,000 gallons per day (gpd) following completion of Phase VI expansion, authorized in 2018.

Therefore, one of our concerns is where the leachate from these three landfills will be discharged when the limit of 60,000 gpd will be reached in the City of Montpelier WWTF. Even if the Agency of Natural Resources of Vermont (ANR) committed themselves to maintaining a moratorium on the treatment of leachate at the Newport City WWTF until 2026⁵, MCI is concerned that the leachate could be treated elsewhere else in the Memphremagog Watershed. In the permit, it would be important to describe the future scenarios when the limit of 60,000 gpd will be reached in the City of Montpelier WWTF to guarantee that the Newport City WWTF or anywhere in the Lake Memphremagog Watershed, would not be a future potential scenario.

Leachate Treatment Pilot Study

As explained in the draft pretreatment permit, by no later than four months following the effective date of this permit, New England Waste Services of Vermont Inc. (NEWSVT) shall submit a Leachate Treatment Pilot Study Plan (Plan) to select and pilot leachate treatment or pretreatment technologies to remove PFAS and provide the concurrent removal of other pollutants from the leachate of the three landfills. No later than one year following the effective date of this permit, the company shall have the leachate treatment and/or pretreatment technology(s) installed and begin the pilot study. Finally, by no later than three years following the effective date of this permit, the company shall complete the pilot study and submit a Final Report approved by a Professional Engineer.

We are concerned that, in four months, the Plan could realow treatment at the Newport City WWTF, or anywhere in the Memphremagog Watershed, to “seek to demonstrate that the risk to the Lake Memphremagog water quality (drinking water supply) will not be unduly adverse”. We are also concerned that, by no longer than three years, the Final Report could realow treatment at the Newport City WWTF, or anywhere in the Memphremagog Watershed.

Given the importance of Lake Memphremagog as a drinking water reservoir, we believe that the precautionary principle must be applied and that no pilot study or no

⁵ August 24th, 2021. Lake Memphremagog Community Forum, Newport City, VT.
<https://www.youtube.com/watch?v=JhfwtYKfszM&t=2109s>

leachate treatment or pretreatment shall be done in the watershed. The Environmental Protection Agency (EPA) has inventoried 86,000 toxic chemicals that are manufactured or processed for use in industry, commerce and households, the majority of which will eventually end up in landfills⁶. The fate of hundreds of contaminants throughout the wastewater treatment process, the impact on human exposure, the bioaccumulation in wildlife and the cumulative effects on Lake Memphremagog, will not be fully understood even after a three-year pilot study. A total of 1,640,000 maximum gallon per day (mgd) is already permitted to be released from the four municipal WWTF located on the Vermont side of the watershed and Lake Memphremagog is receiving about 250,000 gpd of wastewater from the four WWTF located on the Quebec side of the watershed⁷. Also, the large ratio of Brown Bullhead with cancer in South Bay is already proving the existence of an environmental contamination with toxic chemicals in the South part of the lake. No leachate treatment or pretreatment in the Memphremagog watershed should be added to these issues.

We are concerned that the state of Vermont is not looking for alternatives to bury its waste and that the Coventry Landfill is still the only site targeted by the state of Vermont. For the same reasons, we are concerned that the state of Vermont does not seem to look for alternatives to treat leachate away from the Memphremagog Watershed in perpetuity. Canadian citizens are concerned that leachate coming from American garbage is treated and discharged at less than seven miles from the Canadian border in Lake Memphremagog, from which they take their drinking water.

The current NEWSVT's landfill is similar to the case of the last landfill to be located in the Canadian portion of the Memphremagog watershed which was owned by the company Intersan in Magog. In 2002, Intersan proposed a project to expand the landfill using the most advanced existing technology to increase the quantity of waste buried annually from 150 000 to 300 000 tons⁸. The local citizens were concerned about the impact of the landfill on Lake Lovering and Lake Memphremagog⁹. In 2007, during the public consultation held on the expansion project, the general public and policy makers, including the MRC Memphremagog and the City of Magog, expressed their opposition to the project, despite the fact that the project was following all regulations and was proposing the best existing technology: but no technology is guaranteed to be completely safe, and the chosen site was absolutely inappropriate¹⁰. After the public consultation, the Ministry of the Environment of Quebec concluded that it was unacceptable to continue if the MRC Memphremagog and the City of Magog

⁶ EPA Toxic Substance Control Act, <https://www.epa.gov/tsca-inventory/about-tsca-chemical-substance-inventory> (accessed November 9, 2021).

⁷ Gouvernement of Quebec, 2021. *Eaux usées domestiques, communautaires et municipales*. Web site.

⁸ D. DUFRESNE. « Intersan veut avoir le meilleur lieu d'enfouissement au pays », La Tribune (Sherbrooke), 8 juin 2002, p A1

⁹ Bureau d'audiences publiques sur l'environnement (BAPE) (2007). *Projet d'agrandissement du lieu d'enfouissement à Magog par Waste Management Inc.* pp. 89.

<http://www.bape.gouv.qc.ca/sections/rapports/publications/bape247.pdf>

¹⁰ Idem

were unsupportive of the project¹¹. The site is now closed, and the leachate is now treated outside of the Memphremagog Watershed, mitigating any further risk to the watershed.

We hope you will consider alternatives outside of the Memphremagog Watershed for the pretreatment or the treatment of leachate as previously done in Quebec. It is important to remember that the elected members of the Quebec National Assembly and local politicians of the Memphremagog and Sherbrooke regions support a permanent moratorium on leachate treatment in the Memphremagog Watershed. Continued collaboration and support to maintain Lake Memphremagog as a drinking water source, rich in biodiversity, and as a place for inhabitants and visitors alike to safely use, is in the best interest of the entire region. We appreciate your time and attention to review our comments concerning the draft pretreatment permit.

Sincerely,



Robert Benoit, Volunteer President
Robertbenoit1944@gmail.com
Phone: 819-868-1369 poste 1
Cell: 819 821-0711



Ariane Orjikh, Biologist, General Manager
Ariane.orjikh@memphremagog.org
Phone: 819-574-2880

Memphremagog Conservation inc.
51 Cabana Street, Magog, J1X 2C4



¹¹ Idem

From: ascalzo52 (null) <ascalzo52@aol.com>
Sent: Tuesday, November 23, 2021 9:09 PM
To: ANR - WSMD Wastewater
Subject: Leachate PFAS Crisis

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi. I've been trying to understand the facts surrounding the disposal of PFAS into the Winooski and Dog Rivers after the leachate is processed at the water recovery plant. I understand that Montpelier is being paid \$417,000 by Casella Waste Management for taking 10 million gallons of landfill leachate annually, and that there is a proposal to increase that amount 150%, from 24,000 gallons per day to 60,000 gallons per day. In this day and age, when there is such a push to improve our environment because of so much damage already done, why would we knowingly continue, and even increase the levels of poison being dumped into our rivers?

In the November 17th "Leachate" Bridge article, it was stated that the water plant is already accepting the limit of what it can process.

It is such a disturbing thought to know that our rivers are being polluted and the wildlife-plants, fish, birds, all the animals that live along the rivers and the people, also, who swim in them are being effected.

The process and current actions regarding the disposal of PFAS seems backwards to me. Why would we knowingly pollute the rivers which can eventually poison our own drinking water system down the road? Didn't that already occur several years ago when traces of PFAS were discovered in Lake Memphemagog? And hasn't Lake Champlain been damaged by PFAS, as well. Shouldn't an emergency priority be to halt the disposal of these toxins, store the leachate until a better solution is found, fund immediate research to identify ways to filter/neutralize/ destroy these toxins? If we say "no" to the current proposal, a better alternative will be forced.

I know if any state can come up with a solution to this horrid problem, it is Vermont. People here work hard to farm, grow organic food, recycle, collect food waste to put back into the earth, We must do better to protect our water systems and natural environment. We have no right to destroy the natural world in which we live.

Annette Scalzo
Independence Green
Montpelier

Sent from my iPhone

From: Henry Coe <henrycoevt@gmail.com>
Sent: Tuesday, November 23, 2021 4:32 PM
To: ANR - WSMD Wastewater
Cc: Henry Coe
Subject: Fwd: Comment on Permit No.3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

From: **Henry Coe** <henrycoevt@gmail.com>
Date: Mon, Nov 23, 2021 at 4:00PM PM
Subject: Comment on Permit No.3-140

Good Afternoon,

I write as a citizen who believes in the high calling of public service. Though I have not been a government employee, I have served voluntarily in Vermont as a member of a school board, hospital trustee, municipal planning commission, and area Land trust to which I have donated a perpetual conservation easement. I have had a lifetime love of nature and the belief that government works best when it listens and responds to the needs of the governed. Regrettably, in the three and a half years I have worked to understand the dynamics of Vermont's solid waste rules and policies, I see the reverse of what constitutes good government. Instead of the ANR executing the law and regulations, through just and uniform application of its police powers, I have witnessed ANR in Vermont become captured by the regulated, in this case the Casella Waste Corporation. In short, I and others have come to the conclusion that permit decisions in the case of the Coventry landfill are made for political reasons, not based in science nor in the interests of public health..

It begins at the top. Governor Scott, is recorded in answer to a questioner from Newport, who asked if other landfill sites were being considered by ANR, "There is no other option." Casella was Lt. Governor Scott's principle sponsor of his race car for years at Thunder Road. It is my understanding that Casella is one of the Governor's largest campaign contributors. The Secretary of ANR is appointed by the Governor whose bidding appears to outweigh the solid waste mission and related water policies of the State which ANR in the Executive branch, is pledged to uphold. We urge ANR's Commissioner and staff to uphold the environmental values which for each of you underpinned your initial decisions to enter into public service in protection of the environment.

State law, 10 VSA s/s 1250, 1 thru 8. outlines water quality policy in Vermont. Adherence to these enlightened legislative policies, no different than a physician's adherence to the Hippocratic Oath, should guide all members of ANR. Instead, we first observed ANR'S Solid Waste Division staff three and a half years ago, being guided by, - then becoming captive to, the very waste industry they entered public service to evaluate and to hold honest. We have documented written statements from ANR Solid Waste Division staff, as well as verbal statements from the former DEC Commissioner, made in Newport and in Coventry which support that statement. Please explain.

The permit before you, introduced by NEWSVT (Casella), giving authority to the landfill owner to plan for, to set the standards for, to select the site and technology for the pilot project, then to monitor the results, - is contrary to the very mission and goals of the Legislation mentioned, and of the Agency's ability to objectively execute the law. It gives to the very generator of large volumes of toxic leachate pollutant, the authority to plan for, to select the site, select an experimental, speculative, and unproven technology, and to execute and monitor its supposed remedy. The draft permit effectively turns all responsibility for protecting the environment from ANR to the Casella Corporation. This turns public policy on its head. Where is the enabling legislation in Vermont law permitting the Agency to do this? Is there not an administrative procedures act which outlines governance authority for rules and regulations for the ANR to protect our environment, including pre-treatment of toxic waste? Please explain.

Please identify the reasons ANR feels the Permittee, if approved, will be motivated to first protect the environment rather than to cut its costs in the selection of, payment for, operation, maintenance and replacement (OMR) of satisfactory technology and the logistics to deal with PFAS and other emerging contaminants and their ultimate destination. This is the epitome of the fox guarding the chicken coop. What assurance does the Agency have that the technology chosen is optimum,

not to be surpassed by more recent and superior treatment technologies.? What is to be done to residual contaminated filters, membranes, and other toxics removed from the leachate? The permit is silent. To place them in the landfill is not to be permitted, even on an interim basis. to result in a circular, more concentrated toxic stew, perpetuating the pollution cycle. In the interim, landfill spokespersons have said they expect filtration residuals going back into the landfill. The applicant fails in its draft permit to identify the more expensive, more successful sequestration options available. The applicant also fails to describe, other than reverse osmosis, and GAC, other PFAS treatment technologies still in their infancy. Please explain.

When ANR has failed over the years to require the landfill operator to monitor, inspect, and test for toxics in incoming truckloads of waste at the Coventry landfill, nor to even require it to be separated and/or rejected by Casella, - resulting in production of large volumes of PFAS and other toxic leachate waste, how is ANR to be entrusted to provide oversight to a Casella-run pilot project to filter out and sequester-isolate the large family of PFAS contaminants found in landfill leachate? Please explain. We reap what we sew; In this case, Canadian and Vermont citizens of the Memphremagog watershed reap the externalities and consequences of what the ANR has permitted the owner of Vermont's only permitted landfill to do.

Even an ordinary farmer is required to have a plan for handling of his manure prior to shipping of milk. The current permit under which Casella operates its landfill has not required a prior plan to deal with its known PFAS toxics in leachate. The draft permit before you is merely a plan to plan, a bureaucrat's dream. The same farmer must allow milk handlers to take a sample from his bulk tank prior to shipping each day. Each farm sample is tested for antibiotics prior to emptying the truck's contents at the milk or cheese processing plant. A farmer whose milk sample does not pass, is responsible for payment of the full truckload of milk, which must be rejected and dumped. An ordinary new homeowner is required to have a back-up approved septic leachate area in case of failure of the primary. In the case of the Casella landfill at Coventry, none of these common sense systems apply to the reception or disposal of 600,000 tons annually of waste. There is no required back-up or alternative site elsewhere in the State in case of failure. Where is the consistency? Where is the priority.? Where is ANR's solid waste plan and why is it so deficient? Please explain.

The draft permit before you should be separated into two parts:

1. Discharge renewal permit for leachate delivered to the Montpelier municipal WWTF.
2. The pilot pre-treatment project for landfill leachate.

First Part

I take no individual position on the first part of the draft permit. I do observe that the 60,000 gallon limit per day at the Montpelier WWTF is insufficient capacity to treat the expected 100,000 gallon leachate volume from the Coventry landfill alone, once Phase VI comes on board in 2022, to say nothing about additional leachate volumes from Moretown and from the Casella landfill in Bethlehem, N.H. And the question arises, what happens to the leachate back-up at Coventry when Montpelier's WWTF is incapacitated due to high volumes of storm water or a major snowfall? These should be answered prior to a permit being given.

Second Part

Number 5, page 7 of 31 of the Draft Permit entitled Leachate Treatment for Emerging Contaminants speaks of the timeline under which the landfill operator, NEWSVT of Casella, is to plan for, establish objectives, standards, select the site, select the unproven and "speculative", "experimental" technology, as well set monitoring requirements and monitoring schedule. This is unacceptable. The landfill owner's interests are maximizing profits for its shareholders through aggressive acquisition of competitors, consolidation, and cutting costs.(See most recent filing of Casella Corporation quarterly report.) The record demonstrates that public health and protection of the environment is secondary, and that Casella has a long history of environmental violations. It is a built-in conflict of interest to expect the private owner-operator to be objective in pre-treatment of toxic leachate with PFAS. This permit requires the fox to plan, place, construct, then guard the chicken coop. Unacceptable.

Pre-treatment of landfill leachate - a good thing - is too important a societal issue to be left in the hands of the solid waste industry alone.

The entire premise upon which Number 5 in draft permit No. 3-1406 is based, rests upon "conditions subsequent" to this application. The second part of this draft permit should be denied in its entirety.

This lamentable situation was initially caused by the ANR Division of Solid Waste's ill-considered condition in the expansion

permit of Oct. 2018 requiring the permittee to commission a scoping study outlining two off site and two on site options for the pretreatment of leachate to remove contaminants of emerging concern. Basing that expansion permit on conditions subsequent, - to be enumerated in the scoping study, was itself poor public policy, It should not have been permitted, and the full expansion permit based upon this condition should have been denied upon appeal.

The language in the current draft permit, "permittee may...", as used throughout the document will free the permitted party from carrying out the terms outlined, due to unforeseen events or changes. A permit based upon conditions subsequent should not be allowed in good public policy. Such will result in a burden disadvantageously placed upon taxpayers and their agent (ANR) to hold the permittee to account. This Part 2 of the permit, beginning with No. 5 on page 7, must be denied.

Moreover, ANR's condition of performing a scoping study within a year of the expansion permit announcement, placed no objective, third party requirement upon the permittee. Without such, Casella selected the New Jersey firm, Brown and Caldwell as consultant. a firm beholden to the waste industry and with whom Casella had previously done business. It's recommendations are colored by the interests of the firm paying its bill, and who would be paying future bills from presumed future consulting commissions ANR's Division of Solid Waste in coordination with the Division of Watershed Management should have published its own objective scoping study with criteria upholding the public interest in protecting and conserving the environment. Such would have required rigorous evaluation and a public report, on all alternative, geologically satisfactory sites for the pilot project, prior to selection of the most appropriate. Alternative sites would include previously studied sites under Vermont ACT 78, including Williston, Hartland, a Franklin County site, as well as the central Vermont site of Casella's transfer station in Moretown, among others.

The Brown and Caldwell scoping study was deficient in quality, as it made no mention of the realities which, together, define the Lake Memphremagog watershed as unique in Vermont.

1. Lake Memphremagog is a drinking water reservoir for 175,000 Quebec neighbors.
2. ANR itself characterizes Lake Memphremagog as "degraded" and "impaired".
3. Up to 40% of brown bullhead fish caught in South Bay, display dermal cancerous lesions as well as carcinomas in livers, an extremely rare phenomenon, not found in any other water body in Vermont. Sick fish result from chemically contaminated waters.
- 4.. Coventry landfill, Vermont's only permitted landfill. is adjacent to or extremely close on three sides to extensive -1,800 acres - of wetlands; lies within 600 feet of the Black River; and just over a half mile from Lake Memphremagog's south Bay, a northerly flowing international water body.
5. The study failed to note the ACT 250 and DUMP-mediated moratorium presently on the City of Newport WWTF against acceptance and treatment of landfill leachate at its WWTF. Yet alternative recommendations spoke of the Newport WWTF site. Disingenuous and opaque to reality.

To my knowledge, the appropriateness of the Coventry site has never been objectively evaluated by state government for geographic, geologic, hydrogeologic criteria including historic land-use, slope, erosion, fault zones, and proximity to wetlands. For ANR to claim it is not within rules and regulations to do so is unacceptable and a cop-out. Under current EPA rules the Coventry landfill site would not be permitted today. After 29 years, the time is overdue to evaluate this site, using quantitative matrices. The score would assuredly be failure. It is time for ANR to carry out what ACT 78 intended - to develop a comprehensive solid waste plan based upon distribution of landfill sites regionally, closer to population centers responsible for generation of the bulk of Vermont's waste. Please explain how the present Coventry site has been evaluated by ANR.

Please explain as well, if, as the draft permit explains that the Permittee is to select the site for the pilot project after a period of pre-planning, how is it that Casella engineers Nicolai and Gay, in answer to questions posed at the Nov. 15 recorded meeting of the Coventry Selectboard, had the temerity to identify the pilot project site to be 1. "at the landfill", and 2., to describe effluent from pre-treatment to be clear "like water" and would therefore not be called leachate and could be disposed of in the Black River? This corroborates with Joe Gay's earlier statement that "We'd like to get trucks off the road." It also corroborates with statements made by ANR Division of Watershed Management staff, received from FOIA requests, that river re-classification is being considered for the Black River in order to accept end-of-pipe release of pre-treated leachate effluent (presumably) from an on-site location at the nearby landfill. Evidence suggests that ANR staff appears to be working with the permit applicant to have "pre-selected" the pilot project site, in advance of a permit calling for evaluation of four alternative sites. It is my hope this is not the case, which if so, proves the entire permit public hearing process a farce. To even consider the lowering of river classification in order to accommodate the polluting activity of a landfill operator is contrary to the mission of ANR to protect and conserve our natural resources, and an affront to citizens on both sides of the border. Please answer if

ANR is aware of, and/or has participated in answers to items 1. and 2. in this paragraph.

It must be admitted that successful examples of combined RO, GAC, with electrocoagulation, for removal of the full family of PFAS chemical toxins in the real world are few, and that treatment technologies are in their infancy and evolving, - most just "bench ready". Once the elephant's trunk is under the landfill tent, given the high probability of failure of the technology, now "experimental" and "speculative", the body of the elephant will nevertheless follow. Failure could prove disastrous if results are not as anticipated, or if volumes of leachate to be "pre-treated", are larger than those produced just at the Coventry landfill. What is the hurry to be first at a time of unknowns? Be precautionary when the effects of a supposed solution are not clearly known. Please withdraw this permit as premature. Part two of this draft permit, if not denied in its entirety, or withdrawn, must deny the importation to Coventry of toxic leachate from other closed landfills in Vermont, as well as from out of state landfill sources. An unintended consequence of this pilot project is that Casella could see this as a new revenue center, and would presumably argue for importation through the Interstate Commerce Clause. The State of Vermont must defend itself from such importation into the State of additional toxic waste, a threat to our groundwater and surface water natural resources, a legal argument with precedent.

In my view, the Coventry landfill site was the wrong site for Charlie Nadeau to start his junk and dump business some fifty years ago. I watched my own garbage be pushed by Charlie down the hill to the wetland reeds. Knowing I was helping to poison the Black River, I set up my own household dump in a dry gravel sag on my property, composted, and attempted to refuse and recycle what materials I could. The NEWSVT landfill, now 78 acres, soon to be an active 129 acres. is in the same location immediately adjacent, - zero feet - , from extensive wetlands and up-slope and perilously close to an international drinking water reservoir. No longer in existence is a valuable east-west wildlife corridor, the landfill now blocks. The variety and amount of mammalian, reptilian, and avian wildlife in the South Bay Wildlife area has greatly changed and diminished from the early 1970's.

The Coventry site, at headwaters of a drinking water reservoir, is already too vulnerable a site to bear the additional burden - and risk - of a pilot project on the landfill site to process out emerging chemical contaminants such as PFAS. The Black River is likewise too vulnerable, and of such variable volume, particularly in dry periods, to be expected to be the repository surface water, for "pre-treated" end-of pipe landfill leachate.

Coventry is the wrong site, among the worst sites in the State for a statewide landfill to be located today. It is an inevitable environmental disaster waiting to happen, given a climatic severe rain event or seismic tremor. It is also dependent upon a transportation-centric solid waste system which Casella enjoys as a de facto state-sanctioned monopoly, to the detriment of our atmospheric environment from diesel emissions as well as our ground and surface water environment from inevitable leakage and spills of toxic leachate. The time is past due for the State of Vermont to plan for and implement a system of regionally-based solid waste solutions. This permit must call for mandatory evaluation of alternative, geologically stable landfill and pre-treatment sites for toxic landfill leachate, not by the landfill owner-operator but by a third party commissioned by ANR.

Please deny the draft permit, No. 3-1406 before you, second part beginning at No. 5., p. 7. Above all, it is a moral imperative to do the right thing, enshrined in international law, not to pollute another country's drinking water reservoir. These are our Quebec neighbors. Respect their right to drink clean water, whose source is in the area of the Coventry landfill. Stop overloading Vermont's outhouse at the boundary of our neighbor. Keep any all toxic landfill leachate, treated or otherwise, or liquids of any kind, sourced at the landfill, out of the Memphremagog watershed forever.

Thank you for reading and reflecting.

Sincerely, Henry Coe, Danville, Vermont
November 23, 2021

From: Henry Coe <henrycoevt@gmail.com>
Sent: Tuesday, November 23, 2021 4:58 PM
To: ANR - WSMD Wastewater
Subject: Re: Comment on Permit No.3-1406

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

Hello,

I have just noted that a correction is called for in the preface/heading of my comment on Permit No. 3-1406 which I submitted less than an hour ago.

The corrected version should read:

Date: Tuesday, Nov. 23, 2021
Subject: Comment on Permit No. 3-1406

Thank you,

Henry Coe, Danville, Vermont
Nov. 23, 2021

On Tue, Nov 23, 2021 at 4:31 PM Henry Coe <henrycoevt@gmail.com> wrote:

From: **Henry Coe** <henrycoevt@gmail.com>
Date: Mon, Nov 23, 2021 at 4:00PM PM
Subject: Comment on Permit No.3-140

Good Afternoon,

I write as a citizen who believes in the high calling of public service. Though I have not been a government employee, I have served voluntarily in Vermont as a member of a school board, hospital trustee, municipal planning commission, and area Land trust to which I have donated a perpetual conservation easement. I have had a lifetime love of nature and the belief that government works best when it listens and responds to the needs of the governed. Regrettably, in the three and a half years I have worked to understand the dynamics of Vermont's solid waste rules and policies, I see the reverse of what constitutes good government. Instead of the ANR executing the law and regulations, through just and uniform application of its police powers, I have witnessed ANR in Vermont become captured by the regulated, in this case the Casella Waste Corporation. In short, I and others have come to the conclusion that permit decisions in the case of the Coventry landfill are made for political reasons, not based in science nor in the interests of public health..

It begins at the top. Governor Scott, is recorded in answer to a questioner from Newport, who asked if other landfill sites were being considered by ANR, "There is no other option." Casella was Lt. Governor Scott's principle sponsor of his race car for years at Thunder Road. It is my understanding that Casella is one of the Governor's largest campaign contributors. The Secretary of ANR is appointed by the Governor whose bidding appears to outweigh the solid waste mission and related water policies of the State which ANR in the Executive branch, is pledged to uphold. We urge ANR's Commissioner and staff to uphold the environmental values which for each of you underpinned your initial decisions to enter into public service in protection of the environment.

State law, 10 VSA s/s 1250, 1 thru 8. outlines water quality policy in Vermont. Adherence to these enlightened legislative policies, no different than a physician's adherence to the Hippocratic Oath, should guide all members of ANR. Instead, we first observed ANR'S Solid Waste Division staff three and a half years ago, being guided by, - then becoming captive to, the

very waste industry they entered public service to evaluate and to hold honest. We have documented written statements from ANR Solid Waste Division staff, as well as verbal statements from the former DEC Commissioner, made in Newport and in Coventry which support that statement. Please explain.

The permit before you, introduced by NEWSVT (Casella), giving authority to the landfill owner to plan for, to set the standards for, to select the site and technology for the pilot project, then to monitor the results, - is contrary to the very mission and goals of the Legislation mentioned, and of the Agency's ability to objectively execute the law. It gives to the very generator of large volumes of toxic leachate pollutant, the authority to plan for, to select the site, select an experimental, speculative, and unproven technology, and to execute and monitor its supposed remedy. The draft permit effectively turns all responsibility for protecting the environment from ANR to the Casella Corporation. This turns public policy on its head. Where is the enabling legislation in Vermont law permitting the Agency to do this? Is there not an administrative procedures act which outlines governance authority for rules and regulations for the ANR to protect our environment, including pre-treatment of toxic waste? Please explain.

Please identify the reasons ANR feels the Permittee, if approved, will be motivated to first protect the environment rather than to cut its costs in the selection of, payment for, operation, maintenance and replacement (OMR) of satisfactory technology and the logistics to deal with PFAS and other emerging contaminants and their ultimate destination. This is the epitome of the fox guarding the chicken coop. What assurance does the Agency have that the technology chosen is optimum, not to be surpassed by more recent and superior treatment technologies.? What is to be done to residual contaminated filters, membranes, and other toxics removed from the leachate? The permit is silent. To place them in the landfill is not to be permitted, even on an interim basis. to result in a circular, more concentrated toxic stew, perpetuating the pollution cycle. In the interim, landfill spokespersons have said they expect filtration residuals going back into the landfill. The applicant fails in its draft permit to identify the more expensive, more successful sequestration options available. The applicant also fails to describe, other than reverse osmosis, and GAC, other PFAS treatment technologies still in their infancy. Please explain.

When ANR has failed over the years to require the landfill operator to monitor, inspect, and test for toxics in incoming truckloads of waste at the Coventry landfill, nor to even require it to be separated and/or rejected by Casella, - resulting in production of large volumes of PFAS and other toxic leachate waste, how is ANR to be entrusted to provide oversight to a Casella-run pilot project to filter out and sequester-isolate the large family of PFAS contaminants found in landfill leachate? Please explain. We reap what we sew; In this case, Canadian and Vermont citizens of the Memphremagog watershed reap the externalities and consequences of what the ANR has permitted the owner of Vermont's only permitted landfill to do.

Even an ordinary farmer is required to have a plan for handling of his manure prior to shipping of milk. The current permit under which Casella operates its landfill has not required a prior plan to deal with its known PFAS toxics in leachate. The draft permit before you is merely a plan to plan, a bureaucrat's dream. The same farmer must allow milk handlers to take a sample from his bulk tank prior to shipping each day. Each farm sample is tested for antibiotics prior to emptying the truck's contents at the milk or cheese processing plant. A farmer whose milk sample does not pass, is responsible for payment of the full truckload of milk, which must be rejected and dumped. An ordinary new homeowner is required to have a back-up approved septic leachate area in case of failure of the primary. In the case of the Casella landfill at Coventry, none of these common sense systems apply to the reception or disposal of 600,000 tons annually of waste. There is no required back-up or alternative site elsewhere in the State in case of failure. Where is the consistency? Where is the priority.? Where is ANR's solid waste plan and why is it so deficient? Please explain.

The draft permit before you should be separated into two parts:

1. Discharge renewal permit for leachate delivered to the Montpelier municipal WWTF.
2. The pilot pre-treatment project for landfill leachate.

First Part

I take no individual position on the first part of the draft permit. I do observe that the 60,000 gallon limit per day at the Montpelier WWTF is insufficient capacity to treat the expected 100,000 gallon leachate volume from the Coventry landfill alone, once Phase VI comes on board in 2022, to say nothing about additional leachate volumes from Moretown and from the Casella landfill in Bethlehem, N.H. And the question arises, what happens to the leachate back-up at Coventry when Montpelier's WWTF is incapacitated due to high volumes of storm water or a major snowfall? These should be answered prior to a permit being given.

Second Part

Number 5, page 7 of 31 of the Draft Permit entitled Leachate Treatment for Emerging Contaminants speaks of the timeline under which the landfill operator, NEWSVT of Casella, is to plan for, establish objectives, standards, select the site, select the unproven and "speculative", "experimental" technology, as well set monitoring requirements and monitoring schedule. This is unacceptable. The landfill owner's interests are maximizing profits for its shareholders through aggressive acquisition of competitors, consolidation, and cutting costs.(See most recent filing of Casella Corporation quarterly report.) The record demonstrates that public health and protection of the environment is secondary, and that Casella has a long history of environmental violations. It is a built-in conflict of interest to expect the private owner-operator to be objective in pre-treatment of toxic leachate with PFAS. This permit requires the fox to plan, place, construct, then guard the chicken coop. Unacceptable.

Pre-treatment of landfill leachate - a good thing - is too important a societal issue to be left in the hands of the solid waste industry alone.

The entire premise upon which Number 5 in draft permit No. 3-1406 is based, rests upon "conditions subsequent" to this application. The second part of this draft permit should be denied in its entirety.

This lamentable situation was initially caused by the ANR Division of Solid Waste's ill-considered condition in the expansion permit of Oct. 2018 requiring the permittee to commission a scoping study outlining two off site and two on site options for the pretreatment of leachate to remove contaminants of emerging concern. Basing that expansion permit on conditions subsequent, - to be enumerated in the scoping study, was itself poor public policy, It should not have been permitted, and the full expansion permit based upon this condition should have been denied upon appeal.

The language in the current draft permit, "permittee may...", as used throughout the document will free the permitted party from carrying out the terms outlined, due to unforeseen events or changes. A permit based upon conditions subsequent should not be allowed in good public policy. Such will result in a burden disadvantageously placed upon taxpayers and their agent (ANR) to hold the permittee to account. This Part 2 of the permit, beginning with No. 5 on page 7, must be denied.

Moreover, ANR's condition of performing a scoping study within a year of the expansion permit announcement, placed no objective, third party requirement upon the permittee. Without such, Casella selected the New Jersey firm, Brown and Caldwell as consultant. a firm beholden to the waste industry and with whom Casella had previously done business. It's recommendations are colored by the interests of the firm paying its bill, and who would be paying future bills from presumed future consulting commissions ANR's Division of Solid Waste in coordination with the Division of Wastershed Management should have published its own objective scoping study with criteria upholding the public interest in protecting and conserving the environment. Such would have required rigorous evaluation and a public report, on all alternative, geologically satisfactory sites for the pilot project, priior to selection of the most appropriate. Alternaive sites would include previously studied sites under Vermont ACT 78, including Williston, Hartland, a Franklin County site, as well as the central Vermont site of Casella's transfer station in Moretown, among others.

The Brown and Caldwell scoping study was deficient in quality, as it made no mention of the realities which, together, define the Lake Memphremagog watershed as unique in Vermont.

1. Lake Memphremagog is a drinking water reservoir for 175,000 Quebec neighbors.
2. ANR itself characterizes Lake Memphremagog as "degraded" and "impaired".
3. Up to 40% of brown bullhead fish caught in South Bay, display dermal cancerous lesions as well as carcinomas in livers, an extremely rare phenomenon, not found in any other water body in Vermont. Sick fish result from chemically contaminated waters.
- 4.. Coventry landfill, Vermont's only permitted landfill. is adjacent to or extremely close on three sides to extensive -1,800 acres - of wetlands; lies within 600 feet of the Black River; and just over a half mile from Lake Memphremagog's south Bay, a northerly flowing international water body.
5. The study failed to note the ACT 250 and DUMP-mediated moratorium presently on the City of Newport WWTF against acceptance and treatment of landfill leachate at its WWTF. Yet alternative recommendations spoke of the Newport WWTF site. Disingenuous and opaque to reality.

To my knowledge, the appropriateness of the Coventry site has never been objectively evaluated by state government for geographic, geologic, hydrogeologic criteria including historic land-use, slope, erosion, fault zones, and proximity to wetlands. For ANR to claim it is not within rules and regulations to do so is unacceptable and a cop-out. Under current EPA rules the Coventry landfill site would not be permitted today. After 29 years, the time is overdue to evaluate this site, using quantitative matrices. The score would assuredly be failure. It is time for ANR to carry out what ACT 78 intended - to develop a comprehensive solid waste plan based upon distribution of landfill sites regionally, closer to population centers responsible for generation of the bulk of Vermont's waste. Please explain how the present Coventry site has been evaluated by ANR.

Please explain as well, if, as the draft permit explains that the Permittee is to select the site for the pilot project after a period of pre-planning, how is it that Casella engineers Nicolai and Gay, in answer to questions posed at the Nov. 15 recorded meeting of the Coventry Selectboard, had the temerity to identify the pilot project site to be 1. "at the landfill", and 2., to describe effluent from pre-treatment to be clear "like water" and would therefore not be called leachate and could be disposed of in the Black River? This corroborates with Joe Gay's earlier statement that "We'd like to get trucks off the road." It also corroborates with statements made by ANR Division of Watershed Management staff, received from FOIA requests, that river re-classification is being considered for the Black River in order to accept end-of-pipe release of pre-treated leachate effluent (presumably) from an on-site location at the nearby landfill. Evidence suggests that ANR staff appears to be working with the permit applicant to have "pre-selected" the pilot project site, in advance of a permit calling for evaluation of four alternative sites. It is my hope this is not the case, which if so, proves the entire permit public hearing process a farce. To even consider the lowering of river classification in order to accommodate the polluting activity of a landfill operator is contrary to the mission of ANR to protect and conserve our natural resources, and an affront to citizens on both sides of the border. Please answer if ANR is aware of, and/or has participated in answers to items 1. and 2. in this paragraph.

It must be admitted that successful examples of combined RO, GAC, with electrocoagulation, for removal of the full family of PFAS chemical toxins in the real world are few, and that treatment technologies are in their infancy and evolving, - most just "bench ready". Once the elephant's trunk is under the landfill tent, given the high probability of failure of the technology, now "experimental" and "speculative", the body of the elephant will nevertheless follow. Failure could prove disastrous if results are not as anticipated, or if volumes of leachate to be "pre-treated", are larger than those produced just at the Coventry landfill. What is the hurry to be first at a time of unknowns? Be precautionary when the effects of a supposed solution are not clearly known. Please withdraw this permit as premature. Part two of this draft permit, if not denied in its entirety, or withdrawn, must deny the importation to Coventry of toxic leachate from other closed landfills in Vermont, as well as from out of state landfill sources. An unintended consequence of this pilot project is that Casella could see this as a new revenue center, and would presumably argue for importation through the Interstate Commerce Clause. The State of Vermont must defend itself from such importation into the State of additional toxic waste, a threat to our groundwater and surface water natural resources, a legal argument with precedent.

In my view, the Coventry landfill site was the wrong site for Charlie Nadeau to start his junk and dump business some fifty years ago. I watched my own garbage be pushed by Charlie down the hill to the wetland reeds. Knowing I was helping to poison the Black River, I set up by own household dump in a dry gravel sag on my property, composted, and attempted to refuse and recycle what materials I could. The NEWSVT landfill, now 78 acres, soon to be an active 129 acres. is in the same location immediately adjacent, - zero feet - , from extensive wetlands and up-slope and perilously close to an international drinking water reservoir. No longer in existence is a valuable east-west wildlife corridor, the landfill now blocks. The variety and amount of mammalian, reptilian, and avian wildlife in the South Bay Wildlife area has greatly changed and diminished from the early 1970's.

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our atmospheric environment from diesel emissions as well as our ground and surface water environment from inevitable leakage and spills of toxic leachate. The time is past due for the State of Vermont to plan for and implement a system of regionally-based solid waste solutions. This permit must call for mandatory evaluation of alternative, geologically stable landfill and pre-treatment sites for toxic landfill leachate, not by the landfill owner-operator but by a third party commissioned by ANR.

Please deny the draft permit, No. 3-1406 before you, second part beginning at No. 5., p. 7. Above all, it is a moral imperative to do the right thing, enshrined in international law, not to pollute another country's drinking water reservoir. These are our Quebec neighbors. Respect their right to drink clean water, whose source is in the area of the Coventry landfill. Stop overloading Vermont's outhouse at the boundary of our neighbor. Keep any all toxic landfill leachate, treated or otherwise, or liquids of any kind, sourced at the landfill, out of the Memphremagog watershed forever.

Thank you for reading and reflecting.

Sincerely, Henry Coe, Danville, Vermont
November 23, 2021

From: PamLadds <laddspam@gmail.com>
Sent: Tuesday, November 23, 2021 5:23 PM
To: ANR - WSMD Wastewater
Subject: Comments Pretreatment Discharge Permit 3-1406
Attachments: Permit 3-1406.odt

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Public Comment

Draft Pretreatment Discharge Permit

Permit 3-1406

Submitted by Pam Ladds, 29 Stagecoach Drive, Newport, VT 05855

November 23, 2021

ANR.WSMDWastewater@vermont.gov

“Insanity is doing the same thing over and over and expecting different results.” **Albert Einstein.**

"These commitments made by some are based on technologies yet to be developed and this is at best reckless, and at worst, dangerous". Mia Mottley, Prime Minister of Barbados at the 2021 CAP conference in Glasgow.

<https://www.youtube.com/watch?v=PN6THYZ4ngM>

We have been offered opportunities to comment on Permit Application 3-1406, in-person at 2 oral sessions and in writing. We participated in good faith, assured at every step along the way that no decisions had been made and that our comments were important. We are disappointed to have learned from Casella employees and Peter Laflamme that this is not true, that some decisions had already been made. Specifically that the Pilot Program location, an experiment with unproven technology, will be in the Memphremagog Watershed. (Information from Casella employees directly at a Select Board Meeting 11/15/21 <https://www.youtube.com/watch?v=NdP5mk01awY>)

This information was confirmed at the meeting on 11/18/21 (Sherbrooke University QC/VT meeting. Chaired by Peter LaFlamme). We also learned from the Coventry video recording

that once leachate passes through the treatment process and meets "standards" it could then be considered "drinking water" and discharged into any body of water. This was in response to a question about the Black River, assurance was given by John Gay that the liquid remaining after treatment might no longer be leachate, it would magically become drinking water! There were no assurances that the treatment (as yet unproven and unclear) would remove anything other than the chemicals permitted, a pathetically inadequate list many years out-of-date. This is a blatant example of "Greenwashing", changing the language in order to mislead. Leachate will never be safe, it has no value to the environment and nor will it ever be drinking water. Not only are there many chemicals that may come through the scrubbing process intact, others may be changed, modified or simply unseen/unknown. We would love to see leachate turned to water or wine (at least that would be profitable!). Sorcery and alchemy may be wonderful tools but risking the drinking water of another country truly is insane.

We are living in a time of great uncertainty. Climate change, unpredictable weather events and a growing awareness that our most important resource – water, potable water, is endangered. Without water none of us will survive. As a resource, it must be protected as much as possible. We humans have created much of this situation but we do not have to continue this process. We have seen in other communities what happens when water supplies are contaminated. Prevention beats a cure every time. The Precautionary Principle has never been more important.

What lunacy would allow risking any body of water by siting the only landfill in the State of Vermont on its shores? An international lake where only a 5 mile "pond" is in VT. 75% belongs to Quebec, Canada and is a reservoir, for drinking water. The rivers flow north meaning that any pollution in our VT watershed reaches Canada. An unexpected or extreme weather

event, as we are seeing elsewhere, could mean that the landfill will leak directly into the wetlands, and Lake Memphremagog. I patrol (VIP) the lake for ANR, your own agency, have done for several years and can see the steady decline. As a kayaker and open water swimmer, who is on the lake most days, I see the changes. The lake this summer was visibly distressed, with lowered water levels, still nowhere near normal, frequent blue/green algae blooms, diseased and dead fish, invasive species and the strong "decay" odor that those of us who use the lake frequently associate with the end of summer. It was apparent from early June.

I have chosen not to respond to the permit point-by-point. This process allows comments on minutiae but disregards any questioning of the entire process. The presupposition is that the permit is going to happen, the pilot project is going to happen and that we can "nickel and dime" over small points but not discuss the process rationally or explore alternatives. It certainly does not address who controls the narrative – clearly a Corporation in this instance. When did ANR give away its power? And why? There are 2 separate applications wrapped into Permit 3-1406, which should be separated. Sliding the Pilot Project into a basic permit renewal is lazy thinking or very slick. What is implicit in the permitting document is that the writers believe the only way to proceed is by repeating a previously unsuccessful process. This misses an opportunity to rethink how solid waste as a whole is handled in this State and in others. Nor does it address an exploration of how, or if, leachate can be decontaminated, what technologies could be used and in what way. And it glides right over how the eventual leachate disposal will happen. What it does is use an old report and act as if that will work effectively.

This worldwide problem will not be solved by continuing to bury garbage and sending leachate down, or up, stream. The 21st

century requires different solutions from an underpopulated, relatively chemical free 19th century. Nor, given the levels of contaminants in other forms of solid waste, should they be freely released into bodies of water. The disposal/dispersal of effluent from Cities and towns needs to be rethought too. The chemicals in effluent are similar to those in leachate, pfas chemicals, pesticides and pharmaceutical products are flushed, run through WWTF that cannot even begin to remove them. Assuming that "dilution is the solution to pollution" is wishful thinking at best, gross negligence at worst. What is proposed in this document is not a solution for the environment or those of us living here, it is intended to benefit the permit holder and to allow Casella Waste to continue without change. Of course toxins need to be removed from leachate, expediently and efficiently. There is no dispute there. The differences in thinking are about how this happens, what happens to removed toxins and to the liquid that may have been partially scrubbed but is still a risky release proposition. It is also a debate about what happens to garbage, where it goes and how it is handled. Slings a couple of bags onto the sidewalk in Chittenden County, waving them off in a Casella truck may seem a solution. It is not. There is a karmic aspect to the leachate currently going to Montpelier, where it runs through a system totally unable to treat it for anything before sending it back to Chittenden and Lake Champlain via the Winooski river. We, who have lived with being poisoned for profit for decades, do not want this to happen to others. Ever.

We have listened to the Secretary of ANR, Julie Moore, remind us that we, the people, have the solutions. If only we recycled, repurposed, wasted less, reduced use etc then our landfills would last much longer. Problem solved. Nice story and another way to blame the victims. The landfill is permitted to take a specific tonnage each year. If we do the right things (and we certainly should) then NEWS-VT simply makes up the "shortfall" by

importing more poisons and garbage from other States. Their loyalty is to their Shareholders, not to the environment and certainly not to those of us who are being poisoned. It would be wonderful if toxic products were not sold, consumers can and should become better educated, but we have no control over packaging or secret ingredients. We do not decide what can and cannot be recycled. The State has a responsibility to take a powerful position on this, not just pass a watered-down piece of legislation that bans pfas chemicals in some products and ignores their existence in others. Pandering to lobbyists for the industries concerned certainly limited last year's S90. We are tired of hearing about "baby-steps", "readiness" and other code for doing nothing that will upset the industries involved. Meanwhile letting those industries grow and expand, and greenwash the rest of us. If you want to know what greenwashing looks like

<https://www.ecowatch.com/greenwashing-guide-2655331542.html> . In VT it looks like logos on sports shirts, it looks like supporting part of a flashy program for a town or community, it looks like going into schools teaching recycling "skills" and leaving name brand tchotchkes with every kid. It looks like rubbish bins with a brand name, and labeled haulage trucks.

If the State really wants to make change – get rid of the Commerce Clause. This clause is a gift to irresponsible and greedy companies that are happy to sacrifice the environment and the health of people for profit. Look at the convenient separations between agencies tasked with protecting us and the environment. It is no longer an acceptable excuse to claim that a different department of the same agency has jurisdiction over a potential crisis that impacts us all. Just because a landfill could take more should not mean it does. That is Poison for Profit.

We are outraged that those who purport to be environmentalists

by training and employment, are willing to sacrifice a beautiful area of the State of Vermont and all its inhabitants. We are appalled that a reservoir could be contaminated by the existence of a landfill in another country, apparently without concern. **For the benefit of a corporation.** We are glad to see the shock and disappointment from other parts of the State as they realize that their own garbage, and that from other States, is coming back to haunt them. And motivating them to fight back. We listened to the verbal comments at the hearings and at Montpelier's City Council meeting, nodding in recognition when speakers referenced their fears about exposure to toxins. Some of those who commented had heard us, isolated in the NEK, express the same concerns 3 years ago with minimal response. To you all we say "welcome to our world". Now please join us in this fight.

We do not want any community to be endangered in this way. We do not want the waterways, lakes, watersheds, wetlands, bodies of water on which our survival is dependent, to be risked by the discharge of any toxic waste. Ever. We expect a willingness to seek other solutions. "If we always do what we have always done, we will always get what we have always got." (John Grinder) An unacceptable outcome deserves new solutions, creative thinking, and a 21st century response recognizing the climate crisis. Not just the shrug of "it's ubiquitous".

We call on you, The Department of Environmental Conservation, the Agency of Natural Resources to do the right thing. You exist to **"preserve, enhance, restore and conserve Vermont's natural resources and protect human health for the benefit of this and future generations"**. We ask you to fulfill your mandate and ensure that the Northeast Kingdom, Lake Memphremagog and all of us who live here do so in safety and in harmony with our environment. We would like a future too.

Water is Life!

"When you drink water, think of its source"

Chinese Proverb

Pam Ladds

Public Comment

Draft Pretreatment Discharge Permit

Permit 3-1406

Submitted by Pam Ladds, 29 Stagecoach Drive, Newport, VT 05855

November 23, 2021

ANR.WSMDWastewater@vermont.gov

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This information was confirmed at the meeting on 11/18/21 (Sherbrooke University QC/VT meeting. Chaired by Peter LaFlamme). We also learned from the Coventry video recording that once leachate passes through the treatment process and meets “standards” it could then be considered “drinking water” and discharged into any body of water. This was in response to a question about the Black River, assurance was given by John Gay that the liquid remaining after treatment might no longer be leachate, it would magically become drinking water! There were no assurances that the treatment (as yet unproven and unclear) would remove anything other than the chemicals permitted, a pathetically inadequate list many years out-of-date. This is a blatant example of “Greenwashing”, changing the language in order to mislead. Leachate will never be safe, it has no value to the environment and nor will it

ever be drinking water. Not only are there many chemicals that may come through the scrubbing process intact, others may be changed, modified or simply unseen/unknown. We would love to see leachate turned to water or wine (at least that would be profitable!). Sorcery and alchemy may be wonderful tools but risking the drinking water of another country truly is insane.

We are living in a time of great uncertainty. Climate change, unpredictable weather events and a growing awareness that our most important resource – water, potable water, is endangered. Without water none of us will survive. As a resource, it must be protected as much as possible. We humans have created much of this situation but we do not have to continue this process. We have seen in other communities what happens when water supplies are contaminated. Prevention beats a cure every time. The Precautionary Principle has never been more important.

What lunacy would allow risking any body of water by siting the only landfill in the State of Vermont on its shores? An international lake where only a 5 mile “pond” is in VT. 75% belongs to Quebec, Canada and is a reservoir, for drinking water. The rivers flow north meaning that any pollution in our VT watershed reaches Canada. An unexpected or extreme weather event, as we are seeing elsewhere, could mean that the landfill will leak directly into the wetlands, and Lake Memphremagog. I patrol (VIP) the lake for ANR, your own agency, have done for several years and can see the steady decline. As a kayaker and open water swimmer, who is on the lake most days, I see the changes. The lake this summer was visibly distressed, with lowered water levels, still nowhere near normal, frequent blue/green algae blooms, diseased and dead fish, invasive species and the strong “decay” odor that those of us who use the lake frequently associate with the end of summer. It was apparent from early June.

I have chosen not to respond to the permit point-by-point. This process allows comments on minutiae but disregards any questioning of the entire process. The presupposition is that the permit is going to happen, the pilot project is going to happen and that we can “nickel and dime” over small points but not discuss the process rationally or explore alternatives. It certainly does not address who controls the narrative – clearly a Corporation in this instance. When did ANR give away its power? And why? There are 2 separate applications wrapped into Permit 3-1406, which should be separated. Sliding the Pilot Project into a basic permit renewal is lazy thinking or very slick. What is implicit in the permitting document is that the writers believe the only way to proceed is by repeating a

previously unsuccessful process. This misses an opportunity to rethink how solid waste as a whole is handled in this State and in others. Nor does it address an exploration of how, or if, leachate can be decontaminated, what technologies could be used and in what way. And it glides right over how the eventual leachate disposal will happen. What it does is use an old report and act as if that will work effectively.

This worldwide problem will not be solved by continuing to bury garbage and sending leachate down, or up, stream. The 21st century requires different solutions from an underpopulated, relatively chemical free 19th century. Nor, given the levels of contaminants in other forms of solid waste, should they be freely released into bodies of water. The disposal/dispersal of effluent from Cities and towns needs to be rethought too. The chemicals in effluent are similar to those in leachate, pfas chemicals, pesticides and pharmaceutical products are flushed, run through WWTF that cannot even begin to remove them. Assuming that "dilution is the solution to pollution" is wishful thinking at best, gross negligence at worst. What is proposed in this document is not a solution for the environment or those of us living here, it is intended to benefit the permit holder and to allow Casella Waste to continue without change. Of course toxins need to be removed from leachate, expediently and efficiently. There is no dispute there. The differences in thinking are about how this happens, what happens to removed toxins and to the liquid that may have been partially scrubbed but is still a risky release proposition. It is also a debate about what happens to garbage, where it goes and how it is handled. Slings a couple of bags onto the sidewalk in Chittenden County, waving them off in a Casella truck may seem a solution. It is not. There is a karmic aspect to the leachate currently going to Montpelier, where it runs through a system totally unable to treat it for anything before sending it back to Chittenden and Lake Champlain via the Winooski river. We, who have lived with being poisoned for profit for decades, do not want this to happen to others. Ever.

We have listened to the Secretary of ANR, Julie Moore, remind us that we, the people, have the solutions. If only we recycled, repurposed, wasted less, reduced use etc then our landfills would last much longer. Problem solved. Nice story and another way to blame the victims. The landfill is permitted to take a specific tonnage each year. If we do the right things (and we certainly should) then NEWS-VT simply makes up the "shortfall" by importing more poisons and garbage from other States. Their loyalty is to their Shareholders, not to the environment and certainly not to those of us who are being poisoned. It would be wonderful if

toxic products were not sold, consumers can and should become better educated, but we have no control over packaging or secret ingredients. We do not decide what can and cannot be recycled. The State has a responsibility to take a powerful position on this, not just pass a watered-down piece of legislation that bans pfas chemicals in some products and ignores their existence in others. Pandering to lobbyists for the industries concerned certainly limited last year's S90. We are tired of hearing about "baby-steps", "readiness" and other code for doing nothing that will upset the industries involved. Meanwhile letting those industries grow and expand, and greenwash the rest of us. If you want to know what greenwashing looks like <https://www.ecowatch.com/greenwashing-guide-2655331542.html> . In VT it looks like logos on sports shirts, it looks like supporting part of a flashy program for a town or community, it looks like going into schools teaching recycling "skills" and leaving name brand tchotchkes with every kid. It looks like rubbish bins with a brand name, and labeled haulage trucks.

If the State really wants to make change – get rid of the Commerce Clause. This clause is a gift to irresponsible and greedy companies that are happy to sacrifice the environment and the health of people for profit. Look at the convenient separations between agencies tasked with protecting us and the environment. It is no longer an acceptable excuse to claim that a different department of the same agency has jurisdiction over a potential crisis that impacts us all. Just because a landfill could take more should not mean it does. That is Poison for Profit.

We are outraged that those who purport to be environmentalists by training and employment, are willing to sacrifice a beautiful area of the State of Vermont and all its inhabitants. We are appalled that a reservoir could be contaminated by the existence of a landfill in another country, apparently without concern. **For the benefit of a corporation.** We are glad to see the shock and disappointment from other parts of the State as they realize that their own garbage, and that from other States, is coming back to haunt them. And motivating them to fight back. We listened to the verbal comments at the hearings and at Montpelier's City Council meeting, nodding in recognition when speakers referenced their fears about exposure to toxins. Some of those who commented had heard us, isolated in the NEK, express the same concerns 3 years ago with minimal response. To you all we say "welcome to our world". Now please join us in this fight.

We do not want any community to be endangered in this way. We do not want the waterways, lakes, watersheds, wetlands, bodies of water on which our

survival is dependent, to be risked by the discharge of any toxic waste. Ever. We expect a willingness to seek other solutions. "If we always do what we have always done, we will always get what we have always got." (John Grinder) An unacceptable outcome deserves new solutions, creative thinking, and a 21st century response recognizing the climate crisis. Not just the shrug of "it's ubiquitous".

We call on you, The Department of Environmental Conservation, the Agency of Natural Resources to do the right thing. You exist to **"preserve, enhance, restore and conserve Vermont's natural resources and protect human health for the benefit of this and future generations"**. We ask you to fulfill your mandate and ensure that the Northeast Kingdom, Lake Memphremagog and all of us who live here do so in safety and in harmony with our environment. We would like a future too.

From: studer001@comcast.net
Sent: Tuesday, November 23, 2021 9:29 AM
To: ANR - WSMD Wastewater
Subject: Public Comment on Draft Pretreatment Discharge Permit 3-1406
Attachments: VT Comment on ANR Permit.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Attached please find my comments re: the Draft Pretreatment Discharge Permit 3-1406

Thank you,
Linda Studer

1509 East Echo Lake Rd.

West Charleston, VT 05872

November 23, 2021

Public Comment to Draft Pretreatment Permit

Permit 3-1406

Submitted by: Linda Studer

Date: November 23, 2021

To: ANR.WSMDWastewater@vermont.gov

The following represent my intense concerns regarding the state's consideration of the Draft Pretreatment Discharge Permit 3-1406. To be true to the best interests of our residents, I urge those responsible for the decision on this permit to:

- Maintain the integrity of former state leaders' intent to protect the purity and beauty of Vermont's environment.
- Refuse to succumb to monetary and political pressures that will disregard the best interests of Vermonters.
- Say "NO" immediately to accepting out-of-state trash or leachate.
- Establish a secondary site in southern Vermont to accept local trash or leachate.
- Acknowledge the responsibility of Vermont to insure the purity of Canadian drinking water.
- Refuse to allow experimental practices in decontamination to jeopardize the health of people and living organisms in any part of our state.

Thank you for your serious consideration of these critical matters. I am hopeful that your decisions on this permit will enhance local confidence in the integrity of state decisions.

Linda Studer

Studer001@comcast.net

From: Teresa Gerade <tregerade@gmail.com>
Sent: Tuesday, November 23, 2021 5:44 PM
To: ANR - WSMD Wastewater
Subject: Gerade, Public Comment - Draft Pretreatment Discharge Permit 3-1406
Attachments: Gerade Comments_Permit 3-1406.pdf; Prioritizing Landfill Pollutants.pdf; Prioritizing Landfill Pollutants Supplement.pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please accept the attached comment for permit 3-1406 and the supporting referenced files.

Thank you.

Teresa and Jeff Gerade
Newport, VT

We thank the Agency of Natural Resources for developing this much needed renewal permit, and for taking the initiative to require a pilot study for a system to remove harmful contaminants from landfill leachate. However, we strongly oppose the draft 3-1406 Pretreatment Discharge Permit as written for the reasons stated below.

1) **Remove Condition 5 from the Draft Pretreatment Discharge Permit:**

No leachate should be treated in the Lake Memphremagog watershed and no leachate effluent, treated or untreated, should be disposed of in the Lake Memphremagog watershed.

While the draft permit does not state the location for the pilot study, it has been revealed that the site of the Coventry landfill has been selected for the study¹. This is a dangerous choice as we know that accidents can happen, and while the pilot project will not be disposing the treated leachate into the watershed, a fully implemented leachate treatment facility is planned to follow the pilot. This treatment facility will only remove a portion of the toxic chemicals contained in the anticipated volume of 100,000 gallons a month². Disposing that much only partially treated leachate into the Lake Memphremagog watershed via the Black River, which is evidently what the agency is considering³, will further pollute the lake and is irresponsible. The Agency of Natural Resources is responsible for protecting our natural resources, especially water. The Newport City municipal wells are a stone's throw from the Black River, which empties into the South Bay less than a mile downstream from the landfill. It is clear that the leachate must be treated and disposed of somewhere, but the Agency of Natural resources must use the precautionary principle and find a more suitable location for the study and the effluent discharge. Surely there are locations where the effluent can be discharged more than a mile from an International Lake that is a source of drinking water for our neighbors in Canada. For the reasons stated above, Condition 5 must be removed from this permit.

2) **Increase the list of contaminants to be monitored:**

Determine what contaminants are in the leachate, and expand the list of contaminants that are monitored to include all toxic substances that are harmful to lifeforms in the watershed and the lake.

There have been several scientific studies completed that identified contaminants found in landfill leachate. In a peer reviewed paper published February of 2021 by experts from the University of Missouri and the USDA Forest Service⁴

1- Stated by Joe Gay, Casella Corporation, at the Town of Coventry Select Board Meeting, 11/15/2021.

2- Stated by Joe Gay, Casella Corporation, at the Town of Coventry Select Board Meeting, 11/15/2021.

3- Discovered in emails between ANR staff members retrieved via a FOIA request, 4/2021.

4- A systematic approach for prioritizing landfill pollutants based on toxicity: Applications and Opportunities, Elizabeth R. Rogers^{a,b,c}, Ronald S. Zalesny Jr.^c, Chung-Ho Lin^{a,b,*}

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b School of Natural Resources, University of Missouri –Columbia, MO, USA

c Institute for Applied Ecosystem Studies, USDA Forest Service, Northern Research Station, 5985, Highway K, Rhinelander, WI, USA

combined the results of many independent studies to produce a list of 500 contaminants that were found in landfill leachate. The list of contaminants to be monitored per the draft permit consists of 26 PFAS compounds and another 126 contaminants that are listed as Priority Pollutants by the EPA in 40 CFR Part 423 Appendix A, published in 1979⁵, 42 years ago.

Without a determination of the current contaminants that exist in the leachate, using 42 year old EPA information is inadequate. Additionally, the University of Missouri/USDA Forest Service paper utilized scientific methods to prioritize contaminants in landfill leachate by their toxicity, resulting in a list of the 40 most toxic substances found in the leachate. 15 of these most toxic contaminants do not even appear on the EPA's priority pollutant list. I have attached the study and supplemental material to this email for your review. It is clear that the old EPA list is woefully inadequate.

Additionally, as far back as 2015, research from the US Geological Survey detailed⁶ that landfill leachate is host to numerous contaminants of emerging concern. Leachate samples were collected from 22 municipal solid waste landfills in 12 states, including Maine and Vermont. The leachate was analyzed for 190 chemicals of emerging concern, including pharmaceuticals, for which there is no known removal method. 101 of the 190 compounds were found in leachate. Many of these are not listed on the EPA's 42 year old priority pollutant list, but should be included in the current monitoring and in any plan for removal when present at detectable levels. The study is linked below.

https://www.usgs.gov/ecosystems/environmental-health-program/science/landfill-leachate-released-wastewater-treatment?qt-science_center_objects=0#qt-science_center_objects

Methods for monitoring water quality continue to advance, as is evidenced by the study linked below.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7126548/pdf/main.pdf>

The Agency of Natural Resources is required to perform due diligence and create a comprehensive list of priority pollutants to monitor and to remove from landfill leachate when detectable levels are present. When PFAS contaminants were found in the drinking water in North Bennington in 2018, the state of Vermont developed drinking water standards for PFAS that were more stringent than those recommended by the EPA. The state of Vermont must take the lead again, and prevent a for-profit corporation using a 42 year old list of pollutants, from determining what contaminants must be monitored and removed to protect the environment and public health. This would be a clear conflict of interest. The ANR must not abrogate its responsibilities and must follow the precedent they set

5- Title 40 Part 423 Appendix A, Priority Pollutants, EPA Clean Water Act, 1977.

6- Landfill Leachate Released to Wastewater Treatment Plants and other Environmental Pathways Contains a Mixture of Contaminants including Pharmaceuticals, USGS

in 2018.

3) **Develop a separate permit for a facility to treat landfill leachate:**

Evaluate current technologies and review advanced research

The “pilot study” to treat landfill leachate and remove PFAS and other toxins does not belong in this renewal of the Pretreatment Discharge permit. It should be handled as a separate project, and the ANR, not the permittee, should be researching and selecting the technology. The permittee is a corporation that is most concerned with making a profit for their shareholders, not protecting public health and the environment. The draft permit states that the Agency of Natural Resources will direct the permittee to select technology equivalent to those presented in a Brown Caldwell study published more than 2 years ago⁷. The body of knowledge and the technology for removing chemicals of emerging concern has significantly evolved in the last 2 years. Research, such as the article linked below from the University of Wisconsin - Milwaukee, demonstrate that work is currently in process to determine the most effective and sustainable methods to remove chemicals of emerging concern from landfill leachate.

“UWM researchers are developing innovative ways to filter contaminants from water, including insidious ‘forever pollutants.’ ”⁸

<https://uwm.edu/news/pure-solutions/>

It is the ethical and legal responsibility of the ANR to do the research and provide comprehensive requirements and specifications based on the current data and technologies, with full transparency to the public.

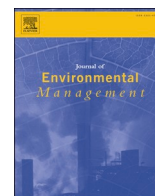
In conclusion, the Agency of Natural Resources primary and legal responsibility is to protect the natural resources of Vermont. It is not the responsibility of a for-profit waste management corporation to create rules that might be in their own self-interest.

Thank you for this opportunity to voice our strong objection to this draft permit as written.

Teresa and Jeff Gerade
Residents of Newport

7- Conceptual Leachate Treatment Scoping Study for New England Waste Services of Vermont (NEWSVT) Landfill, Brown and Caldwell, 10/11/2019

8- University of Wisconsin - Milwaukee Report, Making a splash, UWM researchers are developing innovative ways to filter contaminants from water, including insidious “forever pollutants.”, Tony Rehagen, 2/8/2021



A systematic approach for prioritizing landfill pollutants based on toxicity: Applications and opportunities

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ABSTRACT

Landfills in the United States are a significant source of pollution to ground and surface water. Current environmental regulations require detection and/or monitoring assessments of landfill leachate for contaminants that have been deemed particularly harmful. However, the lists of contaminants to be monitored are not comprehensive. Further, landfill leachate composition varies over space and time, and thus the contaminants, and their corresponding toxicity, are not consistent across or within landfills. One of the main objectives of this study was to prioritize contaminants found in landfill leachate using a systematic, toxicity-based prioritization scheme. A literature review was conducted, and from it, 484 landfill leachate contaminants with available CAS numbers were identified. *In vitro*, *in vivo*, and predicted human toxicity data were collected from ToxCast, ECOTOX, and CTV Predictor, respectively. These data were integrated using the Toxicological Priority Index (ToxPi) for the 322 contaminants which had available toxicity data from at least two of the databases. Four modifications to this general prioritization scheme were developed to demonstrate the flexibility of this scheme for addressing varied research and applied objectives. The general scheme served as a basis for comparison of the results from the modified schemes, and allowed for identification of contaminants uniquely prioritized in each of the schemes. The schemes outlined here can be used to identify the most harmful contaminants in environmental media in order to design the most relevant mitigation strategies and monitoring plans. Finally, future research directions involving the combination of these prioritization schemes and non-target global metabolomic profiling are discussed.

1. Introduction

Landfills in the United States are a significant source of water pollution. Though current comprehensive data do not exist, the U.S. Environmental Protection Agency (EPA) reported that the nearly 2000 active landfills in the U.S. generate leachate flows ranging from 3.8 to over 2 million L per day (U.S. EPA, 2000). Additionally, 163 landfills were identified as generating contaminated groundwater, with daily flows ranging from 22.7 to over 3.7 million L per day, and a median daily flow of about 48,000 L. The physicochemical and biological composition of landfill leachate varies widely, depending on waste characteristics, moisture content of the waste, hydrogeology of the site, and landfill age (Chu et al., 1994; Kulikowska and Klimiuk, 2008; Moody and Townsend, 2017). Landfill leachate composition is dynamic and fluctuates over time due to a combination of physical and societal

factors. Recently, growing awareness of contaminants of emerging concern [CECs, xenobiotic compounds such as personal care products, pharmaceuticals, and PFAS (per- and polyfluoroalkyl substances)] within the environment, and their harmful effects, have prompted research of their existence in landfill leachate (Masoner et al., 2016). Further research regarding the fate, degradation, and transport of CECs in landfill leachate is needed (Masoner et al., 2014).

Landfill pollutants pose an immediate threat to human health and the environment if leached offsite via groundwater or surface water flow. Human health risks from contaminated water sources are dictated by leachate composition and the extent of the exposure, and can include elevated cancer risk, acute toxicity, and genotoxicity (Mukherjee et al., 2015), though health risks from exposure to newer classes of pollutants like CECs have yet to be classified comprehensively (Ramakrishnan et al., 2015). Incidental ingestion, dermal contact, and inhalation of

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volatilized leachate contaminants from water contaminated with leachate (i.e., drinking water or recreational water sources), as well as consumption of fish and other aquatic organisms living in contaminated water are the main pathways of human exposure to landfill leachate contaminants (Schiopu and Gavrilescu, 2010). Older “historic” landfills which were not properly lined and/or were constructed in low-lying floodplains pose a particular pollution risk to surrounding communities (Brand et al., 2018).

Current Monitoring Guidelines under Code of Federal Regulations (CFR) Title 40, Part 258: Criteria for Municipal Solid Waste Landfills (MSWLFs) require MSWLFs to perform Detection Monitoring at all groundwater monitoring wells for the 62 compounds listed in Appendix I of Part 258 (Detection Monitoring Program, 1991). The chief administrative official responsible for implementing the state permitting program may modify the list of pollutants a site must test for, including deletion of Appendix I compounds or development of an alternative list. If a statistically significant increase over the background concentration for the site is detected for one or more of the compounds, the site manager must move into the Assessment Monitoring phase. In this phase, groundwater is sampled and analyzed for all 218 compounds listed in Appendix II of Part 258 (Assessment Monitoring Program, 1991). In addition, the Effluent Limitations stipulated in CFR Title 40, Part 445 require any wastewater discharged from non-hazardous waste landfills to meet maximum daily concentration requirements for nine physical and chemical parameters [Effluent limitations are selected based on ability to meet them with application of the best practicable control technology currently available (BPT), 2000].

Mitigation strategies for landfill water pollution depend on location of the polluted water (surface runoff, water in the vadose zone, or groundwater) and on the physical and chemical properties of the pollutants therein. In general, landfill pollution abatement has consisted of waste containment with barriers and liners and offsite treatment of leachate, with varying degrees of success (Allen, 2001). Increased interest in sustainability along with recent technological and scientific advancements in pollution remediation have led to changes in the design and remediation of landfills (Townsend et al., 2015). Many site managers have elected to implement onsite landfill remediation, which can take many forms, such as permeable reactive barriers, electrokinetic remediation, microbial remediation, or *in situ* injection treatments (Ye et al., 2019), in addition to the longer-scale phytoremediation (Nagendran et al., 2006; Tao et al., 2018). Onsite remediation efforts have typically adopted a target approach in which systems are designed to detect, quantify, and remediate pollutants of known existence at a site. Target approaches like these have often relied on: 1) speculation of most important pollutants to target based on word of mouth or anecdotal evidence, 2) limited groundwater and leachate composition information generated through landfill monitoring procedures, and 3) regulatory lists of monitored compounds developed by traditional targeted analytical approaches. Such methods have failed to consider all the potentially harmful contaminants at a site, especially the emerging contaminants that result from the modern lifestyle. Further, these methods do not quantitatively account for the potential risks the contaminants pose to human health and the environment.

A standardized method for pollutant prioritization, based on toxicity, does not exist but could help mitigation efforts target the most potentially harmful pollutants. Current methods of pollutant prioritization include health risk assessments (Hoang et al., 2016), as well as prioritization based on regulatory standards (Von der Ohe et al., 2011), degradation half-life (Gramatica and Papa, 2007), and signal intensities and frequency in high resolution mass spectrometry (HRMS) spectra (Park et al., 2018). In addition, toxicity data are housed in multiple databases and comprise an array of endpoints (Guillén et al., 2012). This mosaic of prioritization methodologies and toxicity information has led to fragmented, site-specific pollutant mitigation efforts, which discourages cross-study comparison and cohesivity. Here, we present the utility of the toxicity prioritization scheme outlined in Danforth et al. (2020),

and modifications thereof, in prioritizing landfill leachate contaminants based on available toxicity data. The original prioritization scheme presented in Danforth et al. (2020) prioritizes contaminants based on toxicity data from three databases: ECOTOX, ToxCast, and Conditional Toxicity Value (CTV) Predictor.

The objectives of the current study were to: 1) prioritize landfill leachate contaminants that have been reported in the literature using a prioritization scheme based on multiple toxicity endpoints; 2) describe possible modifications to the scheme, including the use of additional datasets and/or different weighting schemes, and; 3) provide recommendations on broader applications of the general scheme. The approach outlined here establishes the means for systematic prioritization of contaminants in landfill leachate or contaminated groundwater which can aid in subsequent monitoring, remediation and/or treatment, and research.

2. Materials and methods

2.1. A literature search for chemicals in landfill leachate

Literature regarding MSWLF leachate composition was reviewed, and a list of over 500 contaminants was compiled (Table S1). All contaminants that were detected at least once in landfill leachate, and with a reported concentration, were included. Basic descriptive information for the landfills in the identified studies is included in Table S2. This list is not intended to be all-inclusive, but rather serves as a starting point for further research involving landfill leachate contaminants. Contaminants that did not have available Chemical Abstracts Service (CAS) numbers were not included in further analysis. Therefore, toxicity data were collected for the 484 compounds with available CAS numbers (Table S1).

2.2. Collection and analysis of toxicity data for landfill leachate chemicals

The compound toxicity ranking schemes developed in the current study are based on the methods of Danforth et al. (2020), whereby compounds are prioritized according to toxicity values from three databases: ECOTOX, ToxCast, and the Conditional Toxicity Value (CTV) Predictor. These three databases provide a robust approach in covering the spectrum of toxicity data, including *in vivo* data, *in vitro* assay data, and predicted *in silico* human toxicity values, respectively. The predicted human toxicity values component is especially powerful, as it allows for the characterization of compounds that may not yet have regulatory standards.

2.2.1. ECOTOX database

ECOTOX is a U.S. EPA database that contains *in vivo* toxicity data (i.e., compound effects on a whole, live organism) for aquatic and terrestrial organisms, and is available at <https://cfpub.epa.gov/ecotox/> (U.S. EPA 2020a). Toxicity data for over 12,000 compounds and over 13,000 species of aquatic organisms and terrestrial plants and wildlife are reported in ECOTOX. As in Danforth et al. (2020), data for the half-maximal effective concentration (EC50, mg L⁻¹; the concentration of the toxicant that induces a response halfway between the baseline and maximum) were collected from ECOTOX, as this was the most data-rich endpoint. In the present study, the minimum EC50 value across all species in the database was collected for each compound. This approach, though conservative, accounts for sensitive species for which data are not reported, and for sensitive endpoints not represented in this scheme.

2.2.2. ToxCast screening library

The ToxCast library is another U.S. EPA database (Richard et al., 2016) and is housed under the CompTox Dashboard at https://comptox.epa.gov/dashboard/chemical_lists/toxcast (Williams et al., 2017). *In vitro* assay toxicity data from bioassays of varied types (e.g., cell type,

design, bioactivity type) are reported in ToxCast. Particularly, bioactivity (i.e., active or inactive) and half maximal activity concentration values (AC50, μM ; the concentration which gives 50% activation in a bioassay) are reported for 4746 compounds (U.S. EPA 2018; U.S. EPA 2020b). In the current study, the minimum AC50 value as well as the percentage of active assays for each compound were collected from CompTox. Like the approach of selecting the minimum EC50 values from ECOTOX, we recorded minimum AC50 values as a conservative way to account for sensitive species whose AC50 data are not reported in ToxCast.

2.2.3. CTV predictor

The CTV Predictor is a web-based tool that generates human health risk data through a quantitative structure activity relationship (QSAR) model-based *in silico* approach, and is available at <https://toxvalue.org/6-CTV/Cover.php> (Wignall et al., 2018). Briefly, the QSAR models employed by the CTV Predictor were developed using human health toxicity values publicly available by the US EPA or the California EPA. First, researchers calculated mathematical chemical descriptors based on compound structure for each chemical using the Chemistry Development Kit (CDK) in R (Wignall et al., 2018). Random forests machine learning models were implemented to predict toxicity values of compounds based on their CDK descriptors, and the resulting models were validated and cross-validated; it is these models that the CTV Predictor is based on. The toxicity predictions generated by the CTV Predictor were shown to have smaller deviations from regulatory values than predictions based on high-throughput screening (HTS) assays and *in vitro* to *in vivo* extrapolation (IVIVE) (Wignall et al., 2018). In the current study, data for the following toxicity parameters were collected from the CTV predictor: 1) reference dose (RfD, $\text{mg kg}^{-1} \text{day}^{-1}$; an estimate of the daily exposure to a compound that is likely to be without negative effects), 2) reference dose benchmark dose (BMD, $\text{mg kg}^{-1} \text{day}^{-1}$; dose of a compound which elicits a predetermined change in the response rate

of a negative effect), 3) reference dose benchmark dose lower limit (BMDL, $\text{mg kg}^{-1} \text{day}^{-1}$; the lower limit of a one-sided 95% confidence interval on the BMD), 4) reference dose no observed adverse effect level (NO(A)EL, $\text{mg kg}^{-1} \text{day}^{-1}$; the highest dose of a compound for which there are no observed negative effects), 5) oral slope factor (OSF, risk per $\text{mg kg}^{-1} \text{day}^{-1}$; an estimate of the increased cancer risk from oral exposure to a dose of $1 \text{ mg kg}^{-1} \text{day}^{-1}$ for a lifetime), and 6) cancer potency value (CPV, risk per $\text{mg kg}^{-1} \text{day}^{-1}$; a California EPA-specific OSF) (Danforth et al., 2020; U.S. EPA 2020c; Wignall et al., 2018). These parameters were selected because they involve oral exposure, and the primary means of potential exposure to the contaminants is through ingestion of contaminated water. Existing toxicity values were collected from CTV Predictor when possible, otherwise predicted toxicity values were collected.

2.2.4. Data integration and prioritization using ToxPi

All toxicity data were uploaded into the Toxicological Prioritization Index (ToxPi), a Java-based program that integrates multiple sources of toxicity data into one dimensionless index score (Marvel et al., 2018). ToxPi is a visualization software consisting of modified iconographic displays that were developed using the R packages *graphics*, *gdata*, and *lattice* (Reif et al., 2010). Index scores are calculated in ToxPi through the weighted or unweighted combination of data from multiple sources, and are represented as unit circles made up of slices of data from different domains (Fig. 1). The width of each slice corresponds to the user-defined weight of that domain, while the slice length represents how potent the toxic effect is of the domain, for the particular chemical (Reif et al., 2010). ToxPi was used to calculate a toxicity score for each compound by integrating toxicity data from the three databases described above (i.e., ECOTOX, ToxCast, and CTV Predictor). Higher toxicity scores generated by ToxPi correspond to greater potential toxicity relative to other compounds in the dataset. Data for some of the parameters were transformed to ensure that higher values represented

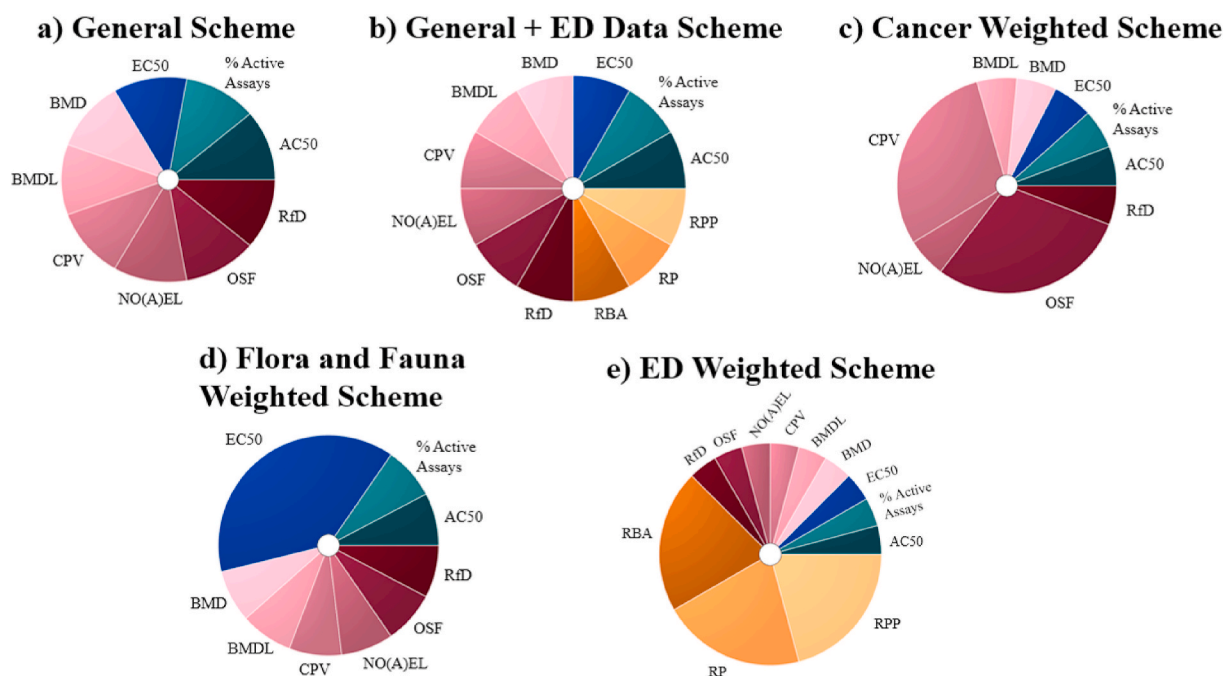


Fig. 1. ToxPi prioritization schemes. For definitions of each scheme, refer to Section 2.3. Each contaminant was analyzed using these combinations of data from multiple domains, which are represented by slices of a similar color: *in vivo* ecotoxicology endpoints (blue), *in vitro* high throughput screening assays (aqua), known or conditional human health toxicity values (red), and endocrine disruption assay data (gold). Individual slices represent data for the corresponding parameter. The distance of each slice from the center indicates the normalized value of the component. The angle of the slice represents how that component is weighted relative to the other components in the overall ToxPi calculation. BMD: reference dose benchmark dose; BMDL: reference dose benchmark dose lower limit; CPV: cancer potency value; NO(A)EL: reference dose no observed adverse effect level; OSF: oral slope factor; RfD: reference dose; RBA: relative binding activity; RP: relative potency; RPP: relative proliferation potency; AC50: half maximal activity concentration; % Active Assays: percentage of active assays; EC50: half-maximal effective concentration.

greater toxicity. The negative log was taken of EC50, AC50, RfD, BMD, BMDL, and NO(A)EL values, while remaining parameters (i.e., percentage of active assays, CPV, OSF) were linearly scaled. Toxicity profiles [i.e., visual representations of how each component (slice) influences the overall toxicity score] were generated in ToxPi for all compounds. Equal weights were given to all toxicity parameters (slices) in the analysis (Fig. 1a). Hereafter, this scheme is referred to as the “general prioritization scheme.” To summarize, the general prioritization scheme prioritizes chemicals based on all the following toxicity parameters: EC50, AC50, percentage of active assays, RfD, BMD, BMDL, NO(A)EL, OSF, and CPV.

This scheme is closely based on the scheme reported in Danforth et al. (2020), except that: 1) in the current study, the negative log is taken of toxicity parameters (EC50, AC50, RfD, BMD, BMDL, NO(A)EL) and others were linearly scaled (percentage of active assays, CPV, OSF) to aid in comparisons and interpretability of the effects of the parameters on the final ToxPi profiles, and 2) the minimum EC50 value across all species and the minimum AC50 values were used in the current study, rather than the Quantile 1 values used in Danforth et al. (2020), which provides a more conservative estimate of potential toxicity. The schemes in subsequent sections demonstrate other modifications which can be made to this general scheme.

An important consideration is that the databases utilized here consider contaminants in water. Therefore, the results presented here do not take into account all of the possible synergistic or antagonistic effects that could occur within the complex landfill leachate matrix. Such a comparison was out of the scope of the present study, though could be addressed in future research.

Only contaminants for which there were available toxicity data from at least two of the three toxicity databases (i.e., ECOTOX, ToxCast, CTV Predictor) were included in ToxPi analysis. Further, compound 2,3,7,8-TCDD was found to have significantly larger toxicity parameter values than all other contaminants (Figure S1). As ToxPi assigns relative scores for each parameter based on the values of the other contaminants in the dataset, the extremely high values of 2,3,7,8-TCDD led to artificially low toxicity scores for a majority of the contaminants. Upon further review of the literature, it was found that this contaminant is associated with landfills which largely accept incinerator fly ash, or industrial wastes (Murphy, 1989; Smith et al., 1983; Baderna et al., 2011; Choi and Lee, 2006), which is not representative of MSWLFs. For both of these reasons, 2,3,7,8-TCDD was removed from the analysis. Thus, 322 contaminants (those for which there were available toxicity data from at least two of the three databases and excluding 2,3,7,8-TCDD) were prioritized in ToxPi (Table S1).

2.3. Prioritization scheme customization

The general prioritization scheme outlined above can be customized according to applied and research objectives. Two options for customization include the incorporation of toxicity data from additional datasets and the application of weighting schemes in ToxPi analysis. The following sections detail how these options were implemented in the current study.

2.3.1. Incorporating additional datasets

To illustrate the option of prioritization scheme customization, endocrine disruption (ED) data from the Endocrine Disruptor Knowledge Base (EDKB) were collected for the 322 contaminants in this study. The EDKB is an online database developed by the U.S. Food and Drug Administration (FDA) National Center for Toxicological Research (NCTR), and is available for download at <https://www.fda.gov/science-research/endocrine-disruptor-knowledge-base/accessing-edkb-database> (U.S. FDA, 2019). Since its inception in 1997, the EDKB has been accessed by users from government, academic, and private sectors to fulfill a variety of compound evaluation- and prioritization-related objectives (Ding et al., 2010). Rat, mouse, and human assay data for over

1800 compounds are reported in EKDB. Specifically, data for three parameters are presented in the database: relative binding activity (RBA), relative potency (RP), and relative proliferation potency (RPP). The largest value for each parameter was collected for all 322 contaminants in the current study. Contaminants were then prioritized in ToxPi according to the general scheme with the additional ED parameters. Hereafter, this scheme will be referred to as the “general + ED data” scheme (Fig. 1B). All parameters were given equal weight, as the objective of this scheme was to demonstrate the utility of incorporating other data into the general scheme. Adding toxicity data from more domains, while keeping all weights constant, is the most basic form of scheme modification. To summarize, the general + ED data scheme prioritizes chemicals based on the following parameters: EC50, AC50, percentage of active assays, RfD, BMD, BMDL, NO(A)EL, OSF, CPV, RBA, RP, and RPP.

2.3.2. Applying weighting schemes

Different weighting schemes may be implemented to further customize the prioritization scheme in order to meet research and applied objectives. In the current study, we designed three example weighting schemes to demonstrate this option: 1) cancer risk [parameters OSF and CPV were given 5x weights (Fig. 1C)], 2) risk to flora and fauna [the EC50 parameter was given 5x weights (Fig. 1D)], and 3) endocrine disruption risk [endocrine parameters (RP, RPP, RBA) were given 5x weights (Fig. 1E)]. Hereafter, these schemes will be referred to as “cancer weighted scheme,” “flora and fauna weighted scheme,” and “endocrine disruption weighted scheme.”

2.4. Comparison to regulatory lists

There are certain regulatory standards that landfills in the United States must meet regarding monitoring of chemicals released. Title 40, Part 258 of the CFR establishes minimum criteria for all MSWLF units according to the Resource Conservation and Recovery Act (RCRA) (Purpose, Scope, and Applicability, 1991). These criteria serve to ensure protection of human health and the environment. Appendix I to Part 258, Constituents for Detection Monitoring, contains a list of 62 chemicals which must be monitored at all groundwater monitoring wells at all MSWLF units. If a statistically significant increase over the background level is detected for any of Appendix I chemicals, an assessment monitoring program must be established, in which chemicals listed in Appendix II to Part 258, List of Hazardous Inorganic and Organic Constituents, must be monitored (Assessment Monitoring Program, 1991). In the present study, both appendices were examined, and data were collected on whether each of the 322 landfill leachate contaminants was included.

3. Results and discussion

3.1. Availability of toxicity data

Toxicity data availability from each of the four databases (i.e., ECOTOX, ToxCast, CTV Predictor, and EDKB) for all compounds is summarized in Fig. 2. Toxicity data were available from all three databases (i.e., CTV Predictor, ToxCast, and ECOTOX) for a majority (>81%) of the 322 contaminants. Therefore, identifying contaminants for which toxicity data are available in at least two of the three major databases was an effective way to select data-rich contaminants. On the other hand, ED data from the EDKB were not as available. Each of the individual ED parameters (RP, RBA, RPP) had available data for less than 26% of the compounds. This low availability of ED data is likely due to the relative infancy of endocrine disruption characterization, testing, and reporting (Karthikeyan et al., 2019). In addition, not all the contaminants are EDs, and therefore do not have existing data.

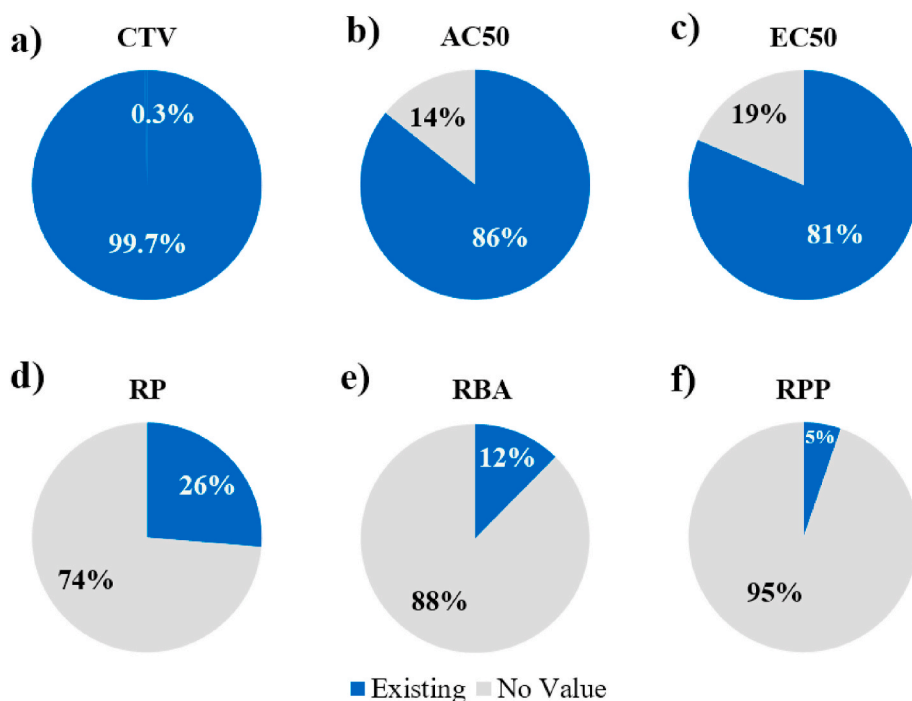


Fig. 2. Data availability for the 322 contaminants prioritized using ToxPi. (a) Availability of all parameters reported in the Conditional Toxicity Value (CTV) predictor. (b) Availability of the half-maximal activity concentrations (AC50) reported in ToxCast. (c) Availability of the half-maximal effective concentrations (EC50) reported in ECOTOX. (d), (e), and (f) were collected from the EDKB and are defined as follows: relative potency (RP), relative binding activity (RBA), and relative proliferation potency (RPP), respectively.

3.2. Data integration and prioritization using ToxPi

3.2.1. General scheme

Toxicity data from ECOTOX, ToxCast, and the CTV Predictor were integrated and prioritized using the ToxPi platform. It is important to note that ToxPi assigns relative toxicity rankings to compounds in a dataset according to the toxicity data that is input. This study focused on 322 contaminants identified in the literature; every possible landfill leachate contaminant was not investigated. The results of ToxPi analysis using the general prioritization scheme are displayed in Fig. 3. Toxicity profiles for the top 3 most toxic compounds (endrin, aldrin, and dieldrin) were very similar, exhibiting large scores for parameters BMD, BMDL, NO(A)EL, and RfD. For each of these three compounds, BMD scores were greater than 0.9373, BMDL scores were greater than 0.9493, NO(A)EL scores were greater than 0.8719, and RfD scores were greater than

0.8039 (with a value of 1 being the largest possible value). Clotrimazole, ranked 4th, demonstrated a balanced toxicity profile with relatively moderate scores for most parameters (each parameter besides BMD and BMDL had a score between 0.3827 and 0.6910), while oxytetracycline, ranked 5th, exhibited a toxicity profile dominated by the human toxicity values from CTV Predictor (BMD score = 0.8092, BMDL score = 0.8314, NO(A)EL score = 0.6180). Toxicity profiles for the top 40 contaminants according to the general scheme are listed in Table S3.

According to the general prioritization scheme, the 40 most toxic landfill leachate contaminants are listed in Table 1. The physicochemical properties of these toxic landfill leachate contaminants are listed in Table S4. The top 40 compounds are comprised of: 12 components of pesticides, fungicides, or their metabolites (endrin, dieldrin, aldrin, chlordane, heptachlor, p,p'-DDE, 4,4'-DDD, heptachlor epoxide, endosulfan I, endosulfan sulfate, lindane, tebuconazole); 8 pharmaceuticals

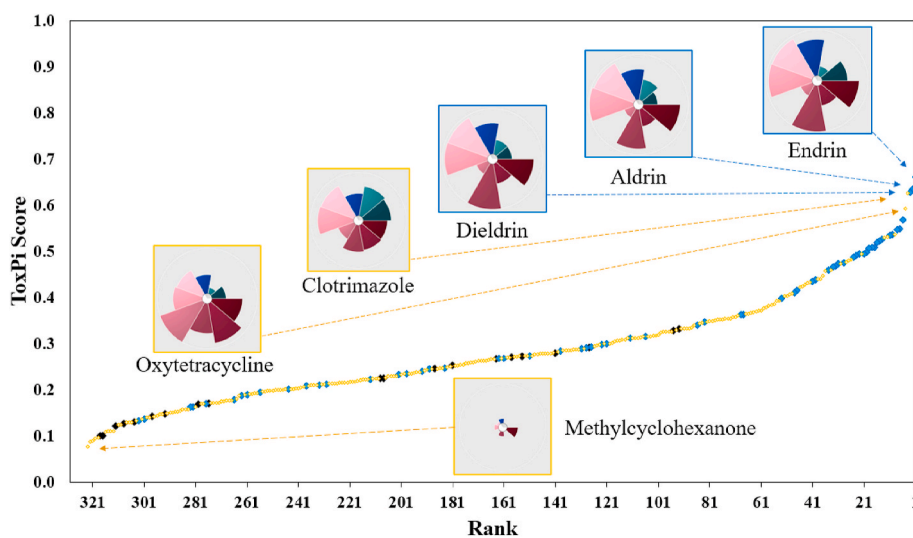


Fig. 3. Distribution dot plot of ToxPi Scores for all 322 contaminants using the general prioritization scheme. Dots represent individual contaminants. Black and blue dots represent contaminants listed in Appendices I and II of 40 C.F.R 258, respectively, while yellow dots represent contaminants that are not included in either Appendix. ToxPi toxicity profiles for the five most toxic contaminants and the least toxic contaminant are displayed in the insets.

Table 1

Uses, sources, and health impacts of compounds in landfill leachate ranked by their potential toxicity according to ToxPi analysis.

Rank	Contaminant	CASRN ^a	Uses/Sources ^b	Health Impacts ^c
1	Endrin	72-20-8	pesticide ^c	neurological, endocrine
2	Dieldrin	60-57-1	pesticide ^c	developmental, endocrine, hepatic, immunological, neurological
3	Aldrin	309-00-2	pesticide ^c	developmental, endocrine, hepatic, immunological, neurological
4	Clotrimazole	23,593-75-1	antifungal medication	potential endocrine disruptor
5	Oxytetracycline	79-57-2	antibiotic to treat bacterial infections	potential endocrine disruptor
6	Chlordane	12,789-03-6	pesticide ^c	endocrine disruption
7	Indeno (123cd)pyrene	193-39-5	industrial by-product; cigarette ingredient	animal carcinogen, possible human carcinogen
8	Heptachlor	76-44-8	insecticide ^c	developmental, reproductive, endocrine
9	Tetrabromobisphenol-A	79-94-7	flame retardant; epoxy resins of printed circuit boards	potential endocrine disruptor, neurotoxicity
10	p,p'-DDE	72-55-9	component of DDT; pesticide	developmental, endocrine, hepatic, neurological, reproductive
11	p,p'-DDT	50-29-3	component of DDT; pesticide; cigarette ingredient	developmental, endocrine, hepatic, neurological, reproductive
12	1,2,3,4,7,8-hexaCDD	39,227-28-6	industrial by-product ^c	probable carcinogen
13	Tetracycline	60-54-8	antibiotic to treat bacterial infections	endocrine disruption
14	4,4'-DDD	72-54-8	component of DDT; pesticide	developmental, endocrine, hepatic, neurological, reproductive
15	Benzo(a)pyrene	50-32-8	industrial by-product; cigarette ingredient	probable human carcinogen
16	Benzo (ghi)perylene	191-24-2	industrial by-product; cigarette ingredient	not classified
17	Benzo(b)fluoranthene	205-99-2	industrial by-product; cigarette ingredient	probable human carcinogen
18	Dibenz (ah)anthracene	53-70-3	industrial by-product; cigarette ingredient	probable human carcinogen
19	Heptachlor epoxide	1024-57-3	metabolite of heptachlor ^c	developmental, reproductive
20	PCB-187	52,663-68-0	coolants and lubricants in transformers	carcinogenic to humans, endocrine

Table 1 (continued)

Rank	Contaminant	CASRN ^a	Uses/Sources ^b	Health Impacts ^c
21	Benzo(k)fluoranthene	207-08-9	and capacitors ^c industrial by-product; cigarette ingredient	possible human carcinogen
22	Doxycycline	564-25-0	antibacterial drug; antimalarial	possible endocrine disruptor
23	Benz(a)anthracene	56-55-3	industrial by-product; cigarette ingredient	probable human carcinogen
24	Endosulfan I	959-98-8	insecticide ^d	possible human carcinogen, neurological
25	Endosulfan sulfate	1031-07-8	metabolite of endosulfan	neurological, possible carcinogen
26	2,3,7,8-TCDF	51,207-31-9	industrial by-product; insecticide	possible neurological
27	BDE-47	5436-43-1	flame retardant	neurotoxicity
28	Chlortetracycline	57-62-5	veterinary antibiotic ^d	possible endocrine disruptor
29	PCB-153	35,065-27-1	coolants and lubricants in transformers and capacitors ^c	carcinogenic to humans, endocrine
30	BDE-99	60,348-60-9	flame retardant	neurotoxicity
31	PCB-128	38,380-07-3	coolants and lubricants in transformers and capacitors ^c	endocrine
32	Lindane	58-89-9	insecticide	possible carcinogen, endocrine
33	PCB-105	32,598-14-4	coolants and lubricants in transformers and capacitors ^c	carcinogenic to humans, endocrine
34	Enrofloxacin	93,106-60-6	antibiotic to treat bacterial infections ^d	not classified
35	Pentachlorophenol	87-86-5	pesticide; wood preservative	developmental, endocrine, reproductive
36	Codeine	76-57-3	pain-relief; antidiarrheal; cough suppressant	not classified
37	Tebuconazole	80,443-41-0	fungicide ^d	possible human carcinogen
38	BDE-100	189,084-64-8	flame retardant	endocrine
39	Ofloxacin	82,419-36-1	antibiotic to treat bacterial infections ^d	toxic to mammalian cells in culture
40	Pentachlorobenzene	608-93-5	fungicide; flame retardant; industrial by-product ^d	hepatic, urinary

^a Chemical Abstracts Service Registry Number.

^b T3DB.

^c ATSDR.

^d Pubchem.

^e For details, see [Table S5](#).

(clotrimazole, oxytetracycline, tetracycline, doxycycline, chlortetracycline, enrofloxacin, codeine, ofloxacin); 8 industrial byproducts/cigarette ingredients (indeno (123cd)pyrene, 1,2,3,4,7,8-hexaCDD, benzo (a)pyrene, benzo (ghi)perylene, benzo(b)fluoranthene, dibenz (ah)anthracene, benzo(k)fluoranthene, benz(a)anthracene); 4 coolants and lubricants (PCB-187, PCB-153, PCB-128, PCB-105); 3 flame retardants (BDE-47, BDE-99, BDE-100); and 5 multi-use compounds (tetrabromobisphenol-A, p,p'-DDT, 2,3,7,8-TCDF, pentachlorophenol, pentachlorobenzene) (Table 1).

Health impacts are compound-specific, and many of the compounds can produce multiple negative effects (Table 1). Of the top 40 compounds, 21 were reported as potential or confirmed endocrine disruptors, 14 as potential or confirmed human carcinogens, and 12 as causing neurological impacts.

A wide range of concentrations in landfill leachate have been reported for these 40 contaminants (Table 2). Pesticides and their metabolites exhibited the largest reported concentrations of over 1×10^4 ng L⁻¹ (i.e., endrin, dieldrin, endosulfan I, and pentachlorophenol). However, the lowest concentrations of less than 1×10^{-1} ng L⁻¹ were reported for compounds with a range of sources and uses (i.e., p,p'-DDE [pesticide], endosulfan sulfate [metabolite of pesticide ingredient], BDE-47 [flame retardant], PCB-153 [coolant and lubricant in transformers], PCB-128 [coolant and lubricant in transformers], PCB-105 [coolant and lubricant in transformers], and pentachlorobenzene [fungicide, flame retardant, industrial by-product]). Within individual compounds, the range between minimum and maximum landfill leachate concentration varied from as low as 0.5 ng L⁻¹ (clotrimazole and tebuconazole) to greater than 1.3×10^5 ng L⁻¹ (dieldrin). Large variation in reported concentrations for landfill leachate contaminants is likely due to the inherent variability between landfills. Landfill age and design, as well as demographic, climatic, and geographic characteristics of the area, all impact the type and concentration of contaminants within leachate (Kjeldsen et al., 2002). Because of this natural variation, the 322 landfill leachate contaminants identified in the literature and analyzed here are not likely to be detected in every leachate or groundwater sample. Therefore, site-specific data including identified contaminants and their concentrations are crucial to accurate, relevant prioritization.

This general scheme is widely applicable for diverse environmental applications as it includes *in vivo* assay data, *in vitro* assay data, and *in silico* human toxicity data. Such an integration of toxicity data allows for the identification of contaminants that pose the greatest possible threats to surrounding human and wildlife populations. Landfill site managers and researchers can take advantage of this robust method of prioritization when determining contaminants to target with remediation efforts. It should be noted, however, that the occurrence of contaminants with extremely large toxicity parameters (such as 2,3,7,8-TCDD) can influence the relative toxicity values of the rest of the dataset. Such compounds may be removed from analysis so as not to skew the final results, yet should be recognized if prioritization is being done in the interest of selecting compounds to remediate.

3.2.2. General + ED data scheme

Table 3 lists the top 40 most toxic compounds according to the general + ED data scheme. Thirty-nine compounds were found in the top 40 of both the general and the +ED schemes; bisphenol A was the only compound unique to the top 40 of the general + ED data scheme. The average change in rank between the top 40 of the general scheme and that of the general + ED data scheme was ± 3.2 . A majority of the compounds in the top 40 (i.e., 95%) exhibited a change in toxicity rank of less than 7 places. p,p'-DDT and bisphenol A had rank changes of 10 and 58 places, respectively. As the only difference between the two schemes is the addition of ED data in the general + ED data scheme, it can be concluded that these changes in rank are due to p,p'-DDT and bisphenol A having endocrine disruption activity. This is not unexpected; both compounds have been reported as endocrine disruptors

Table 2

Concentration range of compounds in landfill leachate ranked by their potential toxicity according to ToxPi analysis.

Rank	Contaminant	CASRN ^a	Concentration Range ^b (ng L ⁻¹)	References
1	Endrin	72-20-8	7–50000	Assmuth (1996); Chilton and Chilton (1992); Palma-Fleming et al. (2000)
2	Dieldrin	60-57-1	5–130,600	Argun et al. (2017); Assmuth (1996); Murray and Beck (1990)
3	Aldrin	309-00-2	3–333	Assmuth (1996); Murray and Beck (1990); Palma-Fleming et al. (2000)
4	Clotrimazole	23,593-75-1	1–1.5	Peng et al. (2014); Shi et al. (2020)
5	Oxytetracycline	79-57-2	0.7–1070	Andrews et al. (2011); Wu et al. (2015); Wu et al. (2017)
6	Chlordane	12,789-03-6	15–40	Andrews et al. (2011); Ferrell and Smith (1995); Kadlec and Zmarthie (2010)
7	Indeno (123cd)pyrene	193-39-5	2–50	Öman and Junestedt (2008); Oturan et al. (2015); Smol et al. (2016)
8	Heptachlor	76-44-8	6–350	Kadlec and Zmarthie (2010); Palma-Fleming et al. (2000); Reinhart and Grosh (1998)
9	Tetrabromobisphenol-A	79-94-7	4.5–1227	Öman and Junestedt (2008); Osako et al. (2004); Zhou et al. (2013)
10	p,p'-DDE	72-55-9	0.01–13.2	Palma-Fleming et al. (2000); Wang and Kelly (2017); Xu et al. (2008)
11	p,p'-DDT	50-29-3	22–220	Assmuth (1996); Chilton and Chilton (1992); Xu et al. (2008)
12	1,2,3,4,7,8-hexaCDD	39,227-28-6	1–47	Dudzinska et al. (2004); Dudzinska et al. (2008); Wenzel et al. (1999)
13	Tetracycline	60-54-8	50–2470	Andrews et al. (2011); Fang et al. (2020); Topal and Arslan Topal, 2015
14	4,4'-DDD	72-54-8	40–130	Assmuth (1996); Denton et al. (2005); Kadlec and Zmarthie (2010)
15	Benzo(a)pyrene	50-32-8	1–200	

(continued on next page)

Table 2 (continued)

Rank	Contaminant	CASRN ^a	Concentration Range ^b (ng L ⁻¹)	References
16	Benzo (ghi)perylene	191-24-2	10–120	Andrews et al. (2011); Xu et al. (2008); Oturan et al. (2015); Welander and Henrysson (1998); Xu et al. (2008)
17	Benzo(b)fluoranthene	205-99-2	11–2050	Smol et al. (2016); Welander and Henrysson (1998); Xu et al. (2008)
18	Dibenz (ah) anthracene	53-70-3	1–200	Koc-Jurczyk (2014); Öman and Junestedt (2008); Smol et al. (2016)
19	Heptachlor epoxide	1024-57-3	0.2–<50	Gardiner et al. (2002); Oturan et al. (2015); Palma-Fleming et al. (2000)
20	PCB-187	52,663-68-0	0.1407	Körgmaa et al. (2011)
21	Benzo(k)fluoranthene	207-08-9	<3-2000	Klimiuk and Kulikowska (2004); Smol et al. (2016); Welander and Henrysson (1998)
22	Doxycycline	564-25-0	6–541.9	Andersson et al. (2006); Andrews et al. (2011); Qi et al. (2018)
23	Benz(a)anthracene	56-55-3	1–960	Kadlec and Zmarthie (2010); Oturan et al. (2015); Xu et al. (2008)
24	Endosulfan I	959-98-8	18–760,400	Argun et al. (2017); Palma-Fleming et al. (2000); Wang and Kelly (2017)
25	Endosulfan sulfate	1031-07-8	0.044–190	Körgmaa et al. (2011); Palma-Fleming et al. (2000); Wang and Kelly (2017)
26	2,3,7,8-TCDF	51,207-31-9	2–111.15	Dudzinska et al. (2004); Dudzinska et al. (2008); Wenzel et al. (1999)
27	BDE-47	5436-43-1	0.041–6750	Daso et al. (2017); Wang and Kelly (2017); Zhou et al. (2013)
28	Chlortetracycline	57-62-5	12.6–912	Andrews et al. (2011); Fang et al. (2020); Wu et al. (2015)
29	PCB-153	35,065-27-1	0.012–24	Körgmaa et al. (2011); Oturan et al. (2015);

Table 2 (continued)

Rank	Contaminant	CASRN ^a	Concentration Range ^b (ng L ⁻¹)	References
30	BDE-99	60,348-60-9	3.41–14620	Wang and Kelly (2017); Daso et al. (2017); Körgmaa et al. (2011); Zhou et al. (2013)
31	PCB-128	38,380-07-3	0.1–2	Kängsepp (2008); Körgmaa et al. (2011)
32	Lindane	58-89-9	5–950	Andrews et al. (2011); Chilton and Chilton (1992); Oturan et al. (2015)
33	PCB-105	32,598-14-4	0.003–0.5105	Körgmaa et al. (2011); Wang and Kelly (2017)
34	Enrofloxacin	93,106-60-6	17.95–4026.67	Andrews et al. (2011); Wu et al. (2015); You et al. (2018)
35	Pentachlorophenol	87-86-5	200–470,000	Assmuth (1996); Chilton and Chilton (1992); Masoner et al. (2014)
36	Codeine	76-57-3	44.9–728	Andrews et al. (2011); Lu et al. (2016); Masoner et al. (2014)
37	Tebuconazole	80,443-41-0	0.3–0.8	Peng et al. (2014)
38	BDE-100	189,084-64-8	<0.15–1590	Daso et al. (2017); Körgmaa et al. (2011); Zhou et al. (2013)
39	Ofloxacin	82,419-36-1	9.1–79.5	Peng et al. (2014)
40	Pentachlorobenzene	608-93-5	0.042–56	Matejczyk et al. (2011); Wang and Kelly (2017)

^a Chemical Abstracts Service Registry Number.

^b Concentration range in landfill leachate reported in the literature.

(Rubin, 2011; Munier et al., 2016).

The incorporation of other toxicity datasets in addition to those implemented in the general prioritization scheme provides another layer of specificity in meeting specific research and community objectives. For example, specific toxicity endpoints may be included (e.g., reproductive toxicity, developmental toxicity) if certain health problems are of particular concern in a community. However, as evidenced by the minimal changes in rank between the general scheme and the general + ED data scheme, weighting may need to be applied in order to identify a greater number of compounds that exhibit the toxic effects of interest.

3.2.3. Different weighting schemes

Cancer Weighted Scheme

Table 4 lists the top 40 most toxic landfill leachate contaminants according to the cancer weighted sche. 1, 2,3,7,8-pentaCDD, ampicillin, fluoranthene, and amoxicillin were in the top 40 of the cancer weighted scheme, but not the general scheme. The average change in toxicity rank between the general scheme and the cancer weighted scheme was 12.7. Twenty contaminants in the top 40 of the cancer weighted scheme exhibited a change in rank of over 10 places, while 9 contaminants had a

Table 3

Top 40 most toxic chemicals found in landfill leachate according to the general + endocrine disruption data prioritization scheme. Bolded chemicals exhibited a change in rank between the general and the general + ED scheme of 10 or more.

General + ED Data Rank ^a	General Rank ^b	Contaminant	CASRN
1	11	p,p'-DDT	50-29-3
2	1	Endrin	72-20-8
3	10	p,p'-DDE	72-55-9
4	2	Dieldrin	60-57-1
5	3	Aldrin	309-00-2
6	4	Clotrimazole	23,593-75-1
7	65	Bisphenol A	80-05-7
8	5	Oxytetracycline	79-57-2
9	6	Chlordane	12,789-03-6
10	8	Heptachlor	76-44-8
11	7	indeno (123cd)pyrene	193-39-5
12	9	Tetrabromobisphenol-A	79-94-7
13	12	1,2,3,4,7,8-hexaCDD	39,227-28-6
14	14	4,4'-DDD	72-54-8
15	13	Tetracycline	60-54-8
16	15	Benzo (a) pyrene	50-32-8
17	16	Benzo (ghi)perylene	191-24-2
18	17	Benzo(b)fluoranthene	205-99-2
19	18	dibenz (ah)anthracene	53-70-3
20	19	Heptachlor epoxide	1024-57-3
21	20	PCB-187	52,663-68-0
22	21	benzo(k)fluoranthene	207-08-9
23	22	Doxycycline	564-25-0
24	23	Benz(a)anthracene	56-55-3
25	24	Endosulfan I	959-98-8
26	25	Endosulfan sulfate	1031-07-8
27	26	2,3,7,8-TCDF	51,207-31-9
28	29	PCB-153	35,065-27-1
29	29	BDE-47	5436-43-1
30	28	Chlorotetracycline	57-62-5
31	30	BDE-99	60,348-60-9
32	31	PCB-128	38,380-07-3
33	32	Lindane	58-89-9
34	33	PCB-105	32,598-14-4
35	34	Enrofloxacin	93,106-60-6
36	35	Pentachlorophenol	87-86-5
37	36	Codeine	76-57-3
38	37	Tebuconazole	80,443-41-0
39	38	BDE-100	189,084-64-8
40	39	Ofloxacin	82,419-36-1

^a Toxicity rankings according to the general + endocrine disruption data prioritization scheme.

^b Toxicity rankings according to the general prioritization scheme.

rank change of over 20 places. The largest rank changes were exhibited by codeine (32 places) and fluoranthene (51 places). Those contaminants that exhibit large changes in rank have an enhanced risk of cancer compared to their overall general toxicity. Site managers could use a combination approach when determining which chemicals to target with remediation efforts, by choosing to target compounds with large rank changes like codeine and fluoranthene (greater risk of cancer), as well as those that rank highly in both the general and the cancer weighted schemes, such as oxytetracycline, clotrimazole, and indeno (123cd)pyrene (they represent both large cancer risk and large toxicity risks overall).

ED Weighted Scheme

Table 5 lists the top 40 most toxic landfill leachate contaminants according to the ED weighted scheme. Three contaminants were in the top 40 of the ED weighted scheme, but not that of the general scheme: bisphenol A, octyl phenol, and butylparaben. For the top 40, the average change in toxicity rank between the general scheme and the ED weighted scheme was 10.4, and 93% of contaminants exhibited a change in rank of 10 or less places. The three largest rank changes were

Table 4

Top 40 most toxic chemicals found in landfill leachate according to the cancer weighted prioritization scheme. Bolded chemicals exhibited a change in rank between the general scheme and the cancer weighted scheme of 10 or more.

Weighted Rank ^a	General Rank ^b	Contaminant	CASRN
1	5	Oxytetracycline	79-57-2
2	22	Doxycycline	564-25-0
3	13	Tetracycline	60-54-8
4	36	Codeine	76-57-3
5	4	Clotrimazole	23,593-75-1
6	7	Indeno (123cd)pyrene	193-39-5
7	16	Benzo (ghi)perylene	191-24-2
8	28	Chlorotetracycline	57-62-5
9	18	Dibenz (ah)anthracene	53-70-3
10	1	Endrin	72-20-8
11	2	Dieldrin	60-57-1
12	3	Aldrin	309-00-2
13	17	Benzo(b)fluoranthene	205-99-2
14	15	Benzo (a) pyrene	50-32-8
15	23	Benz(a)anthracene	56-55-3
16	21	Benzo(k)fluoranthene	207-08-9
17	39	Ofloxacin	82,419-36-1
18	34	Enrofloxacin	93,106-60-6
19	12	1,2,3,4,7,8-hexaCDD	39,227-28-6
20	44	1,2,3,7,8-pentaCDD	40,321-76-4
21	31	PCB-128	38,380-07-3
22	29	PCB-153	35,065-27-1
23	26	2,3,7,8-TCDF	51,207-31-9
24	20	PCB-187	52,663-68-0
25	33	PCB-105	32,598-14-4
26	10	p,p'-DDE	72-55-9
27	8	Heptachlor	76-44-8
28	27	BDE-47	5436-43-1
29	11	p,p'-DDT	50-29-3
30	9	Tetrabromobisphenol-A	79-94-7
31	14	4,4'-DDD	72-54-8
32	19	Heptachlor epoxide	1024-57-3
33	46	Ampicillin	69-53-4
34	6	Chlordane	12,789-03-6
35	86	Fluoranthene	206-44-0
36	30	BDE-99	60,348-60-9
37	24	Endosulfan I	959-98-8
38	25	Endosulfan sulfate	1031-07-8
39	38	BDE-100	189,084-64-8
40	66	Amoxicillin	26,787-78-0

^a Toxicity rankings according to the cancer weighted prioritization scheme.

^b Toxicity rankings according to the general prioritization scheme.

64 (bisphenol A), 91 (octyl phenol), and 113 places (butylparaben). These three contaminants have much greater potential to negatively impact organisms' endocrine systems compared to their overall toxicity (i.e., their ranks are closer to "1" in the ED weighted scheme than the general scheme). Further, this weighted scheme has proven to be more effective in identifying endocrine-disrupting contaminants in leachate than the general + ED data scheme, based on the greater magnitude of change in rank between the ED weighted scheme and the general scheme than that of the general + ED data scheme.

Flora and Fauna Weighted Scheme

Table 6 lists the top 40 most toxic landfill leachate contaminants according to the flora and fauna weighted scheme. Nine contaminants were in the top 40 of the flora and fauna weighted scheme, but not of the general scheme (naphthalene, atrazine, propiconazole, triclocarban, hexachlorobenzene, triclosan, MCPA, hexazinone, and dichlorobenzene). The average change in toxicity rank between the general scheme and the flora and fauna weighted scheme for these 40 compounds was 14 places. 43% of compounds exhibited a change in rank of 10 or more places, while 5 compounds had a change in rank of 20 or more. Naphthalene, atrazine, hexazinone, and dichlorobenzene all exhibited a change in rank of over 50 places, suggesting that these four contaminants all have large potential to negatively impact the flora and fauna of

Table 5

Top 40 most toxic chemicals found in landfill leachate according to the endocrine disruption weighted prioritization scheme. Bolded chemicals exhibited a change in rank between the general scheme and the weighted scheme of 10 or more.

Weighted Rank ^a	General Rank ^b	Contaminant	CAS
1	65	Bisphenol A	80-05-7
2	11	p,p'-DDT	50-29-3
3	10	p,p'-DDE	72-55-9
4	95	Octyl phenol	1806-26-4
5	1	Endrin	72-20-8
6	2	Dieldrin	60-57-1
7	3	Aldrin	309-00-2
8	4	Clotrimazole	23,593-75-1
9	5	Oxytetracycline	79-57-2
10	8	Heptachlor	76-44-8
11	6	Chlordane	12,789-03-6
12	7	Indeno (123cd)pyrene	193-39-5
13	14	4,4'-DDD	72-54-8
14	9	Tetrabromobisphenol-A	79-94-7
15	12	1,2,3,4,7,8-hexaCDD	39,227-28-6
16	13	Tetracycline	60-54-8
17	15	Benzo(a)pyrene	50-32-8
18	16	Benzo (ghi)perylene	191-24-2
19	29	PCB-153	35,065-27-1
20	133	Butylparaben	94-26-8
21	17	Benzo(b)fluoranthene	205-99-2
22	18	Dibenz (ah)anthracene	53-70-3
23	19	Heptachlor epoxide	1024-57-3
24	20	PCB-187	52,663-68-0
25	24	Endosulfan I	959-98-8
26	21	Benzo(k)fluoranthene	207-08-9
27	22	Doxycycline	564-25-0
28	23	Benz(a)anthracene	56-55-3
29	25	Endosulfan sulfate	1031-07-8
30	26	2,3,7,8-TCDF	51,207-31-9
31	27	BDE-47	5436-43-1
32	28	Chlorotetracycline	57-62-5
33	32	Lindane	58-89-9
34	30	BDE-99	60,348-60-9
35	31	PCB-128	38,380-07-3
36	33	PCB-105	32,598-14-4
37	34	Enrofloxacin	93,106-60-6
38	35	Pentachlorophenol	87-86-5
39	36	Codeine	76-57-3
40	37	Tebuconazole	80,443-41-0

^a Toxicity rankings according to the endocrine disruption weighted prioritization scheme.

^b Toxicity rankings according to the general prioritization scheme.

a site and a relatively lower overall toxicity risk (according to the general prioritization scheme).

Weighted prioritization schemes such as those outlined above add another dimension of selectivity in meeting site objectives. These or similar weighting schemes are particularly useful to communities in which there are defined health concerns or priorities. For example, a scheme like the cancer weighted scheme would best be implemented in an area where cancer was of greater concern, such as "Cancer Alley" in the Southern United States (Singer, 2011). On the other hand, if a community was experiencing high rates of infertility or other problems related to the endocrine system, a scheme like the ED weighted scheme would be the most prudent. The flora and fauna weighted scheme lends itself well to implementation in an area where animal and plant life is of high concern or value, for example: pristine natural areas, locations with endangered species, or places where human consumption of animals (through hunting or fishing) is common.

Comparison of the most toxic compounds identified by both the general scheme and weighted schemes can aid in determining those that are most harmful according to research and community objectives. Compounds that exhibit a large change in rank between schemes, as well as those that exhibit low ranks across schemes, should then be targeted for further research on potential and known impacts to the health of

Table 6

Top 40 most toxic chemicals found in landfill leachate according to the flora and fauna weighted prioritization scheme. Bolded chemicals exhibited a change in rank between the general scheme and the weighted scheme of 10 or more.

Weighted Rank ^a	General Rank ^b	Contaminant	CAS
1	1	Endrin	72-20-8
2	2	Dieldrin	60-57-1
3	3	Aldrin	309-00-2
4	12	1,2,3,4,7,8-hexaCDD	39,227-28-6
5	15	Benzo (a) pyrene	50-32-8
6	11	p,p'-DDT	50-29-3
7	8	Heptachlor	76-44-8
8	4	Clotrimazole	23,593-75-1
9	26	2,3,7,8-TCDF	51,207-31-9
10	10	p,p'-DDE	72-55-9
11	7	Indeno (123cd)pyrene	193-39-5
12	14	4,4'-DDD	72-54-8
13	16	Benzo (ghi)perylene	191-24-2
14	6	Chlordane	12,789-03-6
15	18	Dibenz (ah)anthracene	53-70-3
16	9	Tetrabromobisphenol-A	79-94-7
17	5	Oxytetracycline	79-57-2
18	17	Benzo(b)fluoranthene	205-99-2
19	23	Benz(a)anthracene	56-55-3
20	32	Lindane	58-89-9
21	24	Endosulfan I	959-98-8
22	111	Naphthalene	91-20-3
23	77	Atrazine	1912-24-9
24	21	Benzo(k)fluoranthene	207-08-9
25	13	Tetracycline	60-54-8
26	30	BDE-99	60,348-60-9
27	33	PCB-105	32,598-14-4
28	38	BDE-100	189,084-64-8
29	42	Propiconazole	60,207-90-1
30	35	Pentachlorophenol	87-86-5
31	27	BDE-47	5436-43-1
32	51	Triclocarban	101-20-2
33	48	Hexachlorobenzene	118-74-1
34	49	Triclosan	3380-34-5
35	55	MCPA	94-74-6
36	137	Hexazinone	51,235-04-2
37	92	Dichlorobenzene	106-46-7
38	25	Endosulfan sulfate	1031-07-8
39	40	Pentachlorobenzene	608-93-5
40	22	Doxycycline	564-25-0

^a Toxicity rankings according to the flora and fauna weighted prioritization scheme.

^b Toxicity rankings according to the general prioritization scheme.

humans and/or flora and fauna.

3.3. Comparison to regulatory lists

Interestingly, only one contaminant identified in the top 40 by one of the prioritization schemes in the current study is listed in Appendix I of 40 C.F.R 258: dichlorobenzene (flora and fauna weighted scheme, Table S6). Between 60 and 63% of the top 40 contaminants from each scheme are included in Appendix II of 40 C.F.R. 258 (see Table 7 and Tables S7-9). Generally, Appendix II compounds are not expected to be monitored unless detection of an Appendix I compound permits it. Neither appendix has been modified since 2005, and accordingly, more recently recognized CECs are not represented therein. Further, traditional regulations which target industrial compounds and related carcinogens may not address the complexity of emerging contaminants. While traditional industrial carcinogens commonly exhibit a linear relationship between level of exposure and toxicity, some CECs and EDs cause deleterious effects at much lower concentrations or exhibit nonlinear, or even nonmonotonic dose responses (Lagarde et al., 2015; US EPA, 2017; Vandenberg et al., 2013). The results of the prioritizations in this study suggest that updating landfill groundwater monitoring requirements to reflect the evolving understanding of landfill leachate composition (and toxicity of the pollutants within it) could be

Table 7

Top 40 most toxic chemicals found in landfill leachate according to the general prioritization scheme.

Rank	CAS	Contaminant	40 C.F.R. 258. App. I ^a	40 C.F.R. 258. App. II ^b
1	72-20-8	Endrin		*
2	60-57-1	Dieldrin		*
3	309-00-2	Aldrin		*
4	23,593-75-1	Clotrimazole		
5	79-57-2	Oxytetracycline		
6	12,789-03-6	Chlordane		*
7	193-39-5	Indeno (123cd)pyrene		*
8	76-44-8	Heptachlor		*
9	79-94-7	Tetrabromobisphenol-A		
10	72-55-9	p,p'-DDE		*
11	50-29-3	p,p'-DDT		*
12	39,227-28-6	1,2,3,4,7,8-hexaCDD		
13	60-54-8	Tetracycline		
14	72-54-8	4,4'-DDD		*
15	50-32-8	Benzo(a)pyrene		*
16	191-24-2	Benzo (ghi)perylene		*
17	205-99-2	Benzo(b)fluoranthene		*
18	53-70-3	Dibenz (ah)anthracene		*
19	1024-57-3	Heptachlor epoxide		*
20	52,663-68-0	PCB-187		*
21	207-08-9	Benzo(k)fluoranthene		*
22	564-25-0	Doxycycline		
23	56-55-3	Benz(a)anthracene		*
24	959-98-8	Endosulfan I		*
25	1031-07-8	Endosulfan sulfate		*
26	51,207-31-9	2,3,7,8-TCDF		*
27	5436-43-1	BDE-47		
28	57-62-5	Chlortetracycline		
29	35,065-27-1	PCB-153		
30	60,348-60-9	BDE-99		*
31	38,380-07-3	PCB-128		
32	58-89-9	Lindane		*
33	32,598-14-4	PCB-105		*
34	93,106-60-6	Enrofloxacin		*
35	87-86-5	Pentachlorophenol		
36	76-57-3	Codeine		*
37	80,443-41-0	Tebuconazole		
38	189,084-64-8	BDE-100		
39	82,419-36-1	Ofloxacin		
40	608-93-5	Pentachlorobenzene		

^a A star indicates inclusion in [Appendix I](#), 40 C.F.R. § 258.

^b A star indicates inclusion in [Appendix II](#), 40 C.F.R. § 258.

useful and effective, as this leachate may pose risks to groundwater through offsite transport.

3.4. Scheme application with modern metabolomics

Incorporating site-specific contaminant data when applying the prioritization schemes outlined in this study will provide the most accurate and applicable results. Site-specific contaminant data can be effectively generated using the combination of non-target global profiling analysis and modern metabolomics. Traditional target approaches are inferior to non-target approaches in multiple ways. Target approaches [e.g., sample analysis using low-resolution mass spectrometry (LRMS)] have relied heavily on reference analytical standards with

limited commercial availability and low-resolution mass spectral libraries [e.g., those developed by the National Institute of Standards and Technology (NIST)]. Further, target approaches require lists of potential contaminants to analyze for, which are often generated by reviewing literature in scientific journals or information from regulatory agencies, and may not reflect the exact conditions at a site. Non-target approaches that implement modern high-resolution mass spectrometry (HRMS) such as time-of-flight (TOF), Orbitrap, and Fourier transform ion cyclotron resonance (FT-ICR) instrumentation, are superior to LRMS target approaches in analyzing environmental samples. Not only is mass accuracy of identified molecules greatly improved in HRMS (precision of exact mass down to four to six decimal places), but operating HRMS instruments in full scan mode with modern deconvolution algorithms allows for global metabolomic profiling ([Arrebola-Liébanas et al., 2017](#)). The use of structural fragmentation data collected through high-resolution tandem mass spectrometry (MS/MS or MS2) will further increase the confidence in compound identifications.

Following non-target analysis, metabolomics platforms such as XCMS Online can then be used to process full-scan HRMS data without the need for reference standards; XCMS Online automatically detects, integrates and annotates the signals (peaks) according to METLIN, the largest mass spectral reference database for organic molecules in the world, using novel nonlinear retention time alignment ([Domingo-Almenara et al., 2018](#); [Smith et al., 2006](#)). Identified contaminants can be prioritized using output parameters like relative peak intensity or fold change between samples. While this approach is effective in identifying compounds with significant presence in samples, it does not integrate any health nor toxicity information. The prioritization scheme described in this paper can be integrated seamlessly into existing modern metabolomic platforms to prioritize contaminants identified in non-target analysis based on their toxicity. In this manner, both relative concentration data and potential health risks of contaminants identified at a site are taken into account. Mitigation efforts can then be designed accordingly to target contaminants which are not only the most abundant, but the most harmful as well.

4. Conclusion

Landfills contain many harmful chemicals which may leach offsite into groundwater. It is not feasible nor economically viable to monitor and remediate all possible contaminants. Prioritization schemes that incorporate numerous sources of toxicity data, such as those described here, provide the means for cost-effective identification of contaminants most relevant to community priorities and concerns. The general prioritization scheme depicted here is also highly flexible and can be easily customized. Included parameters can be modified and weighting schemes can be added or adjusted to best meet diverse media and objectives, as shown by the four modified schemes presented here. Out of the original 322 contaminants analyzed in this study, 56 were identified in the top 40 most toxic contaminants of all five schemes. The flora and fauna weighted scheme had the largest average change in rank (± 14 places) when compared to the general scheme, and the general + ED data scheme had the smallest average rank change (± 3.2 places). A combination of rank and change in rank can be implemented when deciding which contaminants to target with remediation efforts. Further, though the original scheme was designed particularly for pollutants in aqueous solutions, it can be modified for applications with air pollutants as well. This method holds promise for implementation in environmental pollutant mitigation, especially when used to prioritize global metabolomic data generated through HRMS non-target analysis. Landfill leachate is a continuously evolving media, both due to internal processes (e.g., waste decomposition) and external factors, such as societal change, which alter the composition of waste deposited in landfills. Future research directions, therefore, include comprehensive assessments of CECs and their impacts on human health and the environment, and implementation of the prioritization schemes defined here

to monitor landfill leachate toxicity as a function of time.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jenvman.2021.112031>.

Credit author statement

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Supplementary Materials

A systematic approach for prioritizing landfill pollutants based on toxicity: Applications and opportunities

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Table S1. Landfill leachate contaminants identified in a literature review. Of the 584 contaminants, 484 had existing CAS numbers. The 322 contaminants with existing toxicity data from at least two of the following databases: ECOTOX, ToxCast, and CTV Predictor, were prioritized in ToxPi analysis (bolded).

Contaminant	CASRN	Contaminant	CASRN
4-Nitrophenol	100-02-7	Fumaric acid	110-17-8
Methylhydroxybenzoic acid	100-09-4	Pyridine	110-86-1
Terephthalic acid	100-21-0	Glutaric acid	110-94-1
Ethylbenzene	100-41-4	Branched heptanoic acid	111-14-8
Styrene	100-42-5	Pimelic acid	111-16-0
Triclocarban	101-20-2	Sebacic acid	111-20-6
Chlorpropham	101-21-3	Heptanol	111-70-6
Diphenylether	101-84-8	Pelargonic acid	112-05-0
Heptachlor epoxide	1024-57-3	Oleic acid	112-80-1
Endosulfan sulfate	1031-07-8	Erythromycin	114-07-8
Bis(2-ethylhexyl)adipate	103-23-1	Propoxur	114-26-1
n-Propylbenzene	103-65-1	Phosphoric acid, triphenyl ester	115-86-6
Phenylacetic acid	103-82-2	Tris(2-chloroethyl)phosphate	115-96-8
Nonylphenol	104-40-5	BDE-209	1163-19-5
2,4-Dimethylphenol	105-67-9	Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7
p-Xylene	106-42-3	Bis(2-methoxyethyl)phthalate	117-82-8
p-Cresol	106-44-5	Bis(2-butoxyethyl)phthalate	117-83-9
Dichlorobenzene	106-46-7	Di-n-octyl phthalate	117-84-0
4-Chloroaniline (p-chloroaniline)	106-47-8	Hexachlorobenzene	118-74-1
4-Chlorophenol	106-48-9	Dichlobenil	1194-65-6
p-Toluidine	106-49-0	Benzophenone	119-61-9
1,2-Dibromoethane	106-93-4	2,3,4-tetrahydronaphthalene	119-64-2
Glyphosate	1071-83-6	Anthracene	120-12-7
Glycol	107-21-1	2,4-DP (Dichloroprop)	120-36-5
Di-n-butyl phosphate	107-66-4	Ethylparaben	120-47-8
Butyric acid	107-92-6	1H-Indole	120-72-9
m-Xylene	108-38-3	2,4-Dichlorophenol	120-83-2
m-Cresol	108-39-4	Isophthalic acid	121-91-5
3-Chlorophenol	108-43-0	Iso-Propylbenzaldehyde	122-03-2
m-Toluidine	108-44-1	Simazine	122-34-9
1,3,5-Trimethylbenzene	108-67-8	Azelaic acid	123-99-9
3,5-Dimethylphenol	108-68-9	Adipic acid	124-04-9
Toluene	108-88-3	Branched octanoic acid	124-07-2
Chlorobenzene	108-90-7	Tri-(2-methylpropyl)-phosphate	126-71-6
Phenol	108-95-2	Phosphoric acid, tributyl ester	126-73-8
Thiophenol	108-98-5	Tetrachloroethylene	127-18-4
Valeric acid	109-52-4	Diphenylsulfone	127-63-9
Tetrahydrofuran	109-99-9	Sulfamerazine	127-79-7
Furan	110-00-9	Chlordane	12789-03-6
Succinic acid	110-15-6	Ionol	128-37-0

Contaminant	CASRN	Contaminant	CASRN
Pyrene	129-00-0	Tridemorph	24602-86-6
Dimethyl phthalate	131-11-3	Bentazone	25057-89-0
Di-n-amyl phthalate	131-18-0	Monobenzylphthalate (MbenzP)	2528-16-7
Monobutylphthalate (MbutP)	131-70-4	Gemfibrozil	25812-30-0
Dibenzofuran	132-64-9	Amoxicillin	26787-78-0
Diethyltoluamide (DEET)	134-62-3	Perfluoropentanoic acid	2706-90-3
Tris(1-chloropropan-2-yl)phosphate	13674-84-5	2-perfluorooctylethanoic acid	27854-31-5
Tris(1,3-dichloropropan-2-yl)phosphate	13674-87-8	Pyrazine	290-37-9
Limonene	138-86-3	Atenolol	29122-68-7
Menthone	14073-97-3	Bis(2-ethylhexyl)phosphate	298-07-7
Malonic acid	141-82-2	Carbamazepine	298-46-4
Hexanoic acid	142-62-1	Perfluorohexanoic acid	307-24-4
Lauric acid	143-07-7	Perfluorododecanoic acid	307-55-1
Sulfamethizole	144-82-1	Aldrin	309-00-2
Sulfapyridine	144-83-2	Octabromodiphenyl ether	32536-52-0
Diclofenac	15307-86-5	PCB-105	32598-14-4
1,2-Dichloroethene	156-59-2	Decanoic acid	334-48-5
Sulpiride	15676-16-1	Perfluorooctanoic acid	335-67-1
Cephalexin	15686-71-2	Perfluorodecanoic acid	335-76-2
Ibuprofen	15687-27-1	Triclosan	3380-34-5
2-Methyl-4-chlorophenol	1570-64-5	Isoproturon	34123-59-6
Chloridazon	1698-60-8	PCB-153	35065-27-1
2,3,7,8-TCDD	1746-01-6	N-Butylbenzenesulfonamide	3622-84-2
Perfluorooctanesulfonic acid	1763-23-1	Perfluorobutanoic acid	375-22-4
Octyl phenol	1806-26-4	Perfluorobutane sulfonamido acetic acid	375-73-5
BDE-100	189084-64-8	Perfluoroheptanoic acid	375-85-9
Atrazine	1912-24-9	Perfluorononanoic acid	375-95-1
Benzo(ghi)perylene	191-24-2	Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Indeno(123cd)pyrene	193-39-5	PCB-128	38380-07-3
2,6-dichlorobenzamide (BAM)	2008-58-4	1,2,3,4,7,8-hexaCDD	39227-28-6
Perfluoroundecanoic acid	2058-94-8	1,2,3,7,8-pentaCDD	40321-76-4
Benzo(b)fluoranthene	205-99-2	BDE-28	41318-75-6
Fluoranthene	206-44-0	Bezafibrate	41859-67-0
Benzo(k)fluoranthene	207-08-9	Monoethylhexylphthalate (MEHP)	4376-20-9
Acenaphthylene	208-96-8	Branched hexanoic acid	4536-23-6
Hydroxyatrazine	2163-68-0	Camphorquinone	465-29-2
Chrysene	218-01-9	1,8-Cineole	470-82-6
Ketoprofen	22071-15-4	Cotinine	486-56-6
Naproxen	22204-53-1	Tetrachlorophenol	4901-51-3
Miconazole	22916-47-8	Indane	496-11-7
Monoethylphthalate (MEP)	2306-33-4	p,p'-DDT	50-29-3
Clotrimazole	23593-75-1	Benzo(a)pyrene	50-32-8
Methyl-6,7-dihydro-5H-cyclopentapyrazine	23747-48-0	2,3,7,8-TCDF	51207-31-9

Contaminant	CASRN	Contaminant	CASRN
Hexazinone	51235-04-2	Pentachlorobenzene	608-93-5
Trimethyl phosphate	512-56-1	2-Ethyltoluene	611-14-3
2,4-Dinitrophenol	51-28-5	Methylbenzamide	613-93-4
Tripropyl phosphate	513-08-6	2-Phenylpropan-2-ol	617-94-7
Metoprolol	51384-51-1	4-Ethyltoluene	622-96-8
Sulfisomidine	515-64-0	Aniline	62-53-3
5 β -Cholestan-3 α -ol	516-92-7	Sulfanilamide	63-74-1
Propranolol	525-66-6	Branched pentanoic acid	646-07-1
PCB-187	52663-68-0	Benzoic acid	65-85-0
1,2,3-Trimethylbenzene	526-73-8	Ketamine	6740-88-1
2,3-Dimethylphenol	526-75-0	Fenpropimorph	67564-91-4
Dibenz(ah)anthracene	53-70-3	Acetone	67-64-1
2-perfluorohexylethanoic acid	53826-12-3	Chloroform (trichloromethane)	67-66-3
Indomethacin	53-86-1	Palmitic acid	67701-03-5
Decamethylcyclotetrasiloxane	541-02-6	Sulfadiazine	68-35-9
Nicotine	54-11-5	BDE-153	68631-49-2
BDE-47	5436-43-1	Ampicillin	69-53-4
Myristic acid	544-63-8	Chloromethylpyridine	6959-47-3
Octamethylcyclotetrasiloxane	556-67-2	Salicylic acid	69-72-7
Tetrachloromethane	56-23-5	Norfloxacin	70458-96-7
Doxycycline	564-25-0	2H-perfluoro-2-decenoic acid	70887-84-2
Benz(a)anthracene	56-55-3	2H-perfluoro-2-octenoic acid	70887-88-6
Chloramphenicol	56-75-7	Benzene	71-43-2
Stearic acid	57-11-4	1,1,1-Trichloroethane	71-55-6
Chlorotetracycline	57-62-5	2,6-Di-tert-butylchinone	719-22-2
2,6-Dimethylphenol	576-26-1	Sulfathiazole	72-14-0
Sulfaguanidine	57-67-0	Endrin	72-20-8
Sulfadimidine (Sulfamethazine)	57-68-1	Sulfamethoxazole	723-46-6
Caffeine	58-08-2	4,4'-DDD	72-54-8
Di-methyl-naphthalene	581-42-0	p,p'-DDE	72-55-9
Methylcyclohexanone	583-60-8	Florfenicol	73231-34-2
2,5-Dichlorophenol	583-78-8	Trimethoprim	738-70-5
Lindane (γ -HCH)	58-89-9	4-Chlorobenzoic acid	74-11-3
3,5-dichlorophenol	591-35-5	Dichloromethane (methylene chloride)	75-09-2
Acyclovir	59277-89-3	1,1-Dichloroethene	75-35-4
Sulfaquinoxaline	59-40-5	Camphor	76-22-2
4-Chlor-o/m-cresol	59-50-7	Heptachlor	76-44-8
Propiconazole	60207-90-1	Codeine	76-57-3
Linoleic acid	60-33-3	Phosphoric acid	7664-38-2
BDE-99	60348-60-9	Triethyl phosphate	78-40-0
Tetracycline	60-54-8	Tris(2-ethylhexyl)phosphate	78-42-2
Dieldrin	60-57-1	1,2-Dichloropropane	78-87-5
2,6-Dinitrotoluene	606-20-2	Glycolic acid	79-14-1

Contaminant	CASRN	Contaminant	CASRN
Branched butyric acid	79-31-2	Enrofloxacin	93106-60-6
Oxytetracycline	79-57-2	Benzothiazolone	934-34-9
Tetrabromobisphenol-A	79-94-7	MCPPP (Mecoprop)	93-65-2
Bisphenol A	80-05-7	2,4,5-Trichlorophenoxyacetate (2,4,5-Trichlorophenoxyacetic acid)	93-76-5
Roxithromycin	80214-83-1	Phenylbenzoate	93-99-2
Sulfamethoxy pyridazine	80-35-3	Propylparaben	94-13-3
n-Ethyl-p-toluenesulfonamide	80-39-7	Butylparaben	94-26-8
Tebuconazole	80443-41-0	MCPA	94-74-6
Clarithromycin	81103-11-9	2,4-Dichlorophenoxyacetic acid	94-75-7
3-Perfluoroheptyl propanoic acid	812-70-4	Benzothiazole	95-16-9
Ganciclovir	82410-32-0	o-Xylene	95-47-6
Ofloxacin	82419-36-1	o-Cresol	95-48-7
Acenaphthene	83-32-9	1,2-Dichlorobenzene	95-50-1
3-Methylindole, skatole	83-34-1	o-Chloroaniline	95-51-2
Ametryn	834-12-8	o-Toluidine	95-53-4
24-Ethyl-cholest-5,22-dien-3 β -ol	83-48-7	2-Chlorophenol	95-57-8
Di-cyclohexyl phthalate	84-61-7	Monochlorophenol	95-57-8
Diethyl phthalate	84-66-2	1,2,4-Trimethylbenzene	95-63-6
Di-isobutyl phthalate	84-69-5	3,4-Dimethylphenol	95-65-8
Dibutyl phthalate (di-n-butyl phthalate)	84-74-2	3,4-Dichlorophenol	95-77-2
Di-n-hexyl phthalate	84-75-3	2,5-Dimethylphenol	95-87-4
Di-n-nonyl phthalate	84-76-4	Trichloro-phenol	95-95-4
Phenanthrene	85-01-8	Endosulfan I	959-98-8
Benzylbutylphthalate (BBP)	85-68-7	t-Butylbenzene	98-06-6
Fluconazole	86386-73-4	Lomefloxacin	98079-51-7
Fluorene (9H Fluorene)	86-73-7	Boronic acid	98-80-6
3,3,5-Trimethylcyclohexanone	873-94-9	Isopropylbenzene (cumene)	98-82-8
1H-Indoleacetic acid	87-51-4	Acetophenone	98-86-2
2,6-Dichlorophenol	87-65-0	Nitrobenzene	98-95-3
Pentachlorophenol	87-86-5	Methylparaben	99-76-3
Clofibric acid	882-09-7	Perfluorohexane sulfonamido acetic acid (FHxSAA)	1003193-99-4
2-Nitrophenol	88-75-5	Perfluoroheptane sulfonamido acetic acid	1003194-00-0
Phthalic acid	88-99-3	Methylperfluoropentane sulfonamido acetic acid	1003194-04-4
Thymol	89-83-8	Methyl perfluoroheptane sulfonamido acetic acid	1003194-05-5
2-Methoxyphenol	90-05-1	Nonylphenol-monoethoxylate	104-35-8
1-Methyl-naphthalene	90-12-0	n-Ethyl-o-toluene-sulfonamide	1077-56-1
2-Hydroxybiphenyl (2-phenylphenol)	90-43-7	Perfluorohexane sulfonate	108427-53-8
Naphtalene	91-20-3	Methylpyridine	109-06-8
3-Perfluoropentyl propanoic acid	914637-49-3	Thiophene	110-02-1
2-Methyl-naphthalene	91-57-6	Squalene	111-02-4
Biphenyl (1,1'-Biphenyl)	92-52-4	8:2/10:2 disubstituted polyfluoroalkyl phosphate	1158182-60-5

Contaminant	CASRN	Contaminant	CASRN
Octylfenol-diethoxylate	1173020-69-3	PCB-8	34883-43-7
Fenchone	1195-79-5	PCB-138	35065-28-2
Sulfanilic acid	121-57-3	PCB-180	35065-29-3
Sulfamonomethoxine	1220-83-3	PCB-170	35065-30-6
Monomethylphthalate (MMP)	1276197-40-0	3-Perfluoropropyl propanoic acid	356-02-5
Xylene	128686-03-3	PCB-52	35693-99-3
Carvomenthone	13163-73-0	1,2,3,4,6,7,8-heptaCDD	35822-46-9
4:2 disubstituted polyfluoroalkyl phosphate	135098-69-0	Perfluoroheptane sulfonate	375-92-8
3-Perfluorononyl propanoic acid (9:3)	143260-97-3	PCB-18	37680-65-2
Methyl perfluorobutane sulfonamido acetic acid	159381-10-9	PCB-101	37680-73-2
Hydroxy-iso-propyl-acetophenone	1634-36-2	Norborn-5-ene-2,3-dicarboxylic acid	3813-52-3
Perfluorooctadecanoic acid	16517-11-6	Dimethyl-6,7-dihydro-5H-cyclopentapyrazine	38917-61-2
n-Phenylbenzenesulfonamide	1678-25-7	1,2,3,4,6,7,8-heptaCDF	38998-75-3
Dehydroabietinic acid	1740-19-8	OctaCDF	39001-02-0
Perfluoropentane sulfonate	175905-36-9	PCB-206	40186-72-9
Pentabromodiphenyl ether	182346-21-0	PCB-44	41464-39-5
1,2,3,7,8,9-hexaCDD	19408-74-3	MDMA	42542-10-9
PCB-209	2051-24-3	Hexabromodiphenyl ether	446255-03-4
BDE-154	207122-15-4	m-Aminobenzoate	4518-10-9
BDE-183	207122-16-5	Perfluorobutane sulfonate	45187-15-3
Tri-methyle-naphthalene	2245-38-7	Perfluorononane sulfonate	474511-07-4
Trans-1,2-Cyclohexanedicarboxylic acid	2305-32-0	Propyphenazone	479-92-5
Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	2355-31-9	Biphenyl-2,2-dicarboxylic acid	482-05-3
Nopinone	24903-95-5	Hydroxypivalinic acid	4835-90-9
Branched heptanoic acid	25103-52-0	Methylisophthalic acid	499-49-0
2,6-dichlorophenoxypropionic acid	25140-90-3	Bis(perfluorooctyl)phosphinate	500776-69-2
Hydroxysimazine	2599-11-3	Borneol	507-70-0
Econazole	27220-47-9	2,4-Dichlorobenzoic acid	50-84-0
Perfluorooctane sulfonamido acetic acid	2806-24-8	Bis(perfluorobutyl)phosphinate	52299-25-9
p-Aminobenzoate	2906-28-7	5,5-Diallylbarbituric acid	52-43-7
Ethylperfluorooctane sulfonamido acetic acid	2991-50-6	3,3-Dimethylnorbornane-2-carboxylic acid	52557-97-8
Ephedrine	299-42-3	PCB-195	52663-78-2
Amphetamine	300-62-9	1,2,4-Benzenetricarboxylic acid	528-44-9
Chloromethylphenol	30915-79-8	Cyclohexylacetic acid	5292-21-7
PCB-118	31508-00-6	Methamphetamine	537-46-2
PCB-66	32598-10-0	Dichloroethylene	540-59-0
OctaCDD	3268-87-9	Dodecamethylcyclohexasiloxane	540-97-6
4-chlorophenoxypropionic acid	3307-39-9	Benzamide	55-21-0
Perfluorodecane sulfonate	335-77-3	Coumaranone	553-86-6
Cyclopentane carboxylic acid	3400-45-1	1,2,3,4,7,8,9-heptaCDF	55673-89-7

Contaminant	CASRN	Contaminant	CASRN
Heroin	561-27-3	Pefloxacin	70458-92-3
2,3,4,7,8-pentaCDF	57117-31-4	Bis(perfluorohexyl)phosphinate	70609-44-8
1,2,3,7,8-pentaCDF	57117-41-6	1,2,3,4,7,8-hexaCDF	70648-26-9
1,2,3,6,7,8-hexaCDF	57117-44-9	Methyl perfluorohexane sulfonamido acetic acid	715646-50-7
Perfluoroheptadecanoic acid	57475-95-3	Bis(1,3-dichloropropan-2-yl)phosphate	72236-72-7
Methyl-1,2-cyclohexane dicarboxylic acid	57567-84-7	Perfluorotridecanoic acid (PFTTrDA)	72629-94-8
1,2,3,6,7,8-hexaCDD	57653-85-7	1,2,3,7,8,9-hexaCDF	72918-21-9
6:2 disubstituted polyfluoroalkyl phosphate	57677-95-9	Branched nonanoic acid	7540-70-7
24-Ethyl-cholest-5-en-3 β -ol	5779-62-4	Hexyl 2-ethylhexyl phthalate	75673-16-4
Cholest-5-en-3 β -ol	57-88-5	α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA)	77521-29-0
n-Heptacosane	593-49-7	2-Methyl-2-n-propyl-1,3-propanediol	78-26-2
Podocarpic acid	5947-49-9	Tricresyl phosphate	78-32-0
N,N;4-Trimethylbenzenesulfonamide	599-69-9	Tris (2-butoxyethyl) phosphate	78-51-3
5 β -Cholestan-3-one	601-53-6	Trichloroethylene	79-01-6
Bis(2-ethoxyethyl)phthalate	605-54-9	Levopimaric acid	79-54-9
2,3,4,6,7,8-hexaCDF	60851-34-5	5 α -Cholestan-3 β -ol	80-97-7
Cis-1,2-Cyclohexanedicarboxylic acid	610-09-3	Bicyclo[2.2.1]heptenedicarboxylic acid	824-62-4
Perfluorohexylperfluorooctyl phosphinate	610800-34-5	Bis(4-methyl-2-pentyl)phthalate	84-63-9
Dimethylbenzamide	611-74-5	Thiamphenicol	847-25-6
p-Toluamide	619-55-6	6-Cl-o-cresol	87-64-9
n-Pentacosane	629-99-2	Benzyl succinic acid	884-33-3
n-Hexacosane	630-01-3	o-Aminobenzoate	9031-59-8
n-Octacosane	630-02-4	Cholest-5,22-dien-3 β -ol	92218-20-7
n-Nonacosane	630-03-5	Propiophenone	93-55-0
Di-iso-butyl phosphate	6303-30-6	Hydroxyphenylpropionic acid	938-96-5
Nonabromodiphenyl ether	63387-28-0	Phenoxypropionic acid	940-31-8
Phenylsuccinic acid	635-51-8	6:2/8:2 disubstituted polyfluoroalkyl phosphate	943913-15-3
n-Tricosane	638-67-5	7-Acetyl-2-hydroxy-2-methyl-5-iso-propylbicyclo[4.3.0.]nonane	96093-81-1
n-Triacontane	638-68-6	Cyclohexane carboxylic acid	98-89-5
iso-Propylacetophenone	645-13-6	Σ 12PAHs	
n-Tetracosane	646-31-1	Σ 16PAHs	
Perfluoropentane sulfonamido acetic acid	647-43-8	Σ 20 Sterol	
8:2 disubstituted polyfluoroalkyl phosphate	678-41-1	Σ 8PAEs	
Perfluorohexadecanoic acid	67905-19-5	Σ 8PBDEs	
Heptabromodiphenyl ether	68928-80-3	1-(1-Ethoxyisopropoxy)-2-propanol	
Ethylperfluoropentane sulfonamido acetic acid	68957-31-3	1,3-Dichlorobenzene	
Ethylperfluorohexane sulfonamido acetic acid	68957-32-4	1,4-Dimethylnaphthalene	
Ethylperfluorobutane sulfonamido acetic acid	68957-33-5	10:2 disubstituted polyfluoroalkyl phosphate	
Ethylperfluoroheptane sulfonamido acetic acid	68957-63-1	10:2 fluorotelomer mercaptoalkyl phosphate diester	
PCB-28	7012-37-5	1-hydroxy-nonamethylcyclopentasiloxane	

Contaminant	CASRN	Contaminant	CASRN
1-hydroxy-undecamethylcyclohexasiloxane		C4-Pyrazine	
2-(2-Hydroxyphenyl)-2-(4-hydroxyphenyl)propane		C5-Pyrazine	
2,4-Dichlorobenzene		Cyclohexane dicarboxylic acid	
24-Ethyl-5 α -cholest-22-en-3 β -ol		Dichloroaniline	
24-Ethyl-5 α -cholestan-3 β -ol		Dihydroxybutyric acid	
24-Ethyl-5 β -cholestan-3 α -ol		Dihydroxydihydrocinnamic acid	
24-Methylcholest-5-en-3 β -ol		FM2	
24-Ethyl-5 β -cholestan-3 β -ol		Hydroxybutyric acid	
24-Ethyl-5 β -cholestan-22-en-3 α -ol		Hydroxycinnamic acid	
24-Ethyl-5 β -cholestan-22-en-3 β -ol		Hydroxycyclohexane carboxylic acid	
24-Methyl-5 α -cholestan-3 β -ol		Hydroxyheptanoic acid	
27-Nor-24-methyl-cholesta-5,22-dien-3 β -ol		Hydroxyindolecarboxylic acid	
2H-Perfluoro-2-dodecenoic acid		Hydroxypentanoic acid	
2H-Perfluoro-2-hexenoic acid		Hydroxyphenylacetic acid	
2-Perfluorobutylethanoic acid		Hydroxyphenylbutyric acid	
2-Perfluorodecylethanoic acid		Methylnopinone	
4,6-Dichlorocresol		Methylphenylbutyric acid	
4:2 Fluorotemomer sulfonate		NEtFOSAA	
4:2/6:2 disubstituted polyfluoroalkyl phosphate		N-ethyl perfluorooctane-sulfonamido-ethanol-based phosphate diester	
4 α ,23,24-Trimethyl-5 α -cholest-22-en-3 α -ol		Nonchlorinated carbanilide	
6:2 Fluorotelomer mercaptoalkyl phosphate diester		Perfluorobutyl perfluorohexyl phosphinate	
6:2 Fluorotemomer sulfonate		Perfluoropentadecanoic acid	
6:2/8:2 Fluorotelomer mercaptoalkyl phosphate diester		PFBA	
8:2 Fluorotelomer mercaptoalkyl phosphate diester		PFBS	
8:2 Fluorotemomer sulfonate		PFDA	
8:2/10:2 Fluorotelomer mercaptoalkyl phosphate diester		PFDoA	
α -Campholenic acid		PFHpA	
C1-Benzoic acid		PFHxA	
C2-Benzoic acid		PFHxS	
C2-Hydroxybutyric acid		PFNA	
C2-Phenol		PFOA	
C3-Benzene		PFOS	
C3-Benzoic acid		PFPeA	
C3-Phenol		PFPrA	
C3-Pyrazine		PFUnA	
C4-Benzene		Phenylbutyric acid	
C4-Benzoic acid		Phenylpropionic acid	
C4-Phenol		Propylphenazone	

Contaminant	CASRN	Contaminant	CASRN
Sulfonamide		Toluenesulfonamide	
Terpineol		Trichlorobenzenes	
Tetrabromodiphenyl ethers		Trichloroethene	
Tetrahydrohydroxynaphthoic acid		Trimethyl-6,7-dihydro-5H-cyclopentapyrazine	
Tetrahydroretene		Trimethylbenzenes	
Thiocresol		Trimethyltetralin	
Thiophencarboxylic acid			

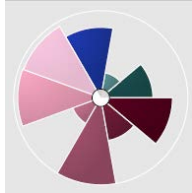
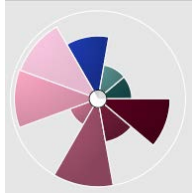
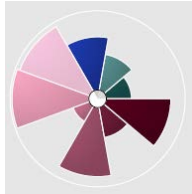

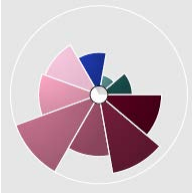
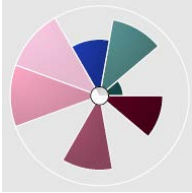

Table S2. Landfill information for studies that reported leachate contaminant concentrations.





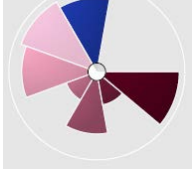
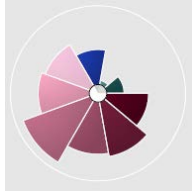

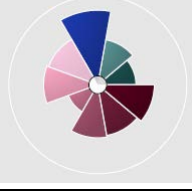
Source	Location	Description
Andersson et al., 2006	Sweden	9 landfills
Andrews et al., 2011	Oklahoma, USA	2 landfills: one closed (in operation early 1900s-1985, served 100,000), one active (Oklahoma City metropolitan area)
Argun et al., 2017	Konya Region, Turkey	Samples collected from active detention pond, municipal landfill receives 706 tons of waste per year
Assmuth, 1996	Finland	43 waste sites, operational and closed municipal mixed-waste landfills, 23-year average length of period of use
Baun et al., 2003	Vejen, Denmark	Closed landfill, operated 1962-1981, 4×10^5 tons of waste
Baun et al., 2004	Denmark	10 landfills: 6 active, 4 closed, 1.5×10^5 - 50×10^5 m ³ of waste
Chilton and Chilton, 1992	United States	Summary reports of average concentrations of harmful substances in municipal solid waste landfill leachate
Daso et al., 2017	Guauteng Province, South Africa	8 landfills
Denton et al., 2005	Ordot, Guam	Active landfill, over 50 years old, 24 ha, receives 71 m ³ of waste per day
Dudzinska et al., 2004	Lublin, Poland	Active landfill constructed in 1994, 39.19 ha, population served: 400,000
Dudzinska et al., 2008	Lublin, Poland	Active landfill constructed in 1994, 39.19 ha, population served: 400,001
Fang et al., 2020	Northern Zhejiang Province, China	3 landfills: 2 active, 1 closed
Ferrell and Smith, 1995	Mecklenburg County, North Carolina, USA	5 active and closed landfills, 4-30 years old, 11.33-151.76 ha
Gardiner et al., 2002	Selma, Virginia, USA	Closed landfill, operated 1972-1990, 10 ha, 860,000 tons total waste
Holm et al., 1995	Grindsted, Denmark	Closed landfill, active from 1930-1977
Kadlec and Zmarthie, 2010	Saginaw, MI, USA	12 ha landfill, closed in early 1980s
Kängsepp, 2008	Sweden and Estonia	4 landfills: two in Sweden, 2 in Estonia
Klimiuk and Kulikowska, 2004	Wysieka, Poland	Mature, active landfill

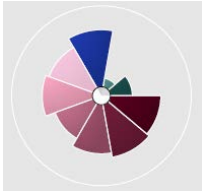
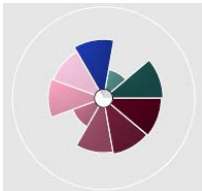
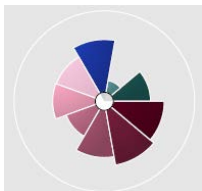
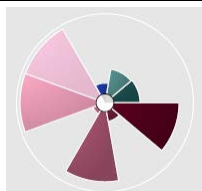
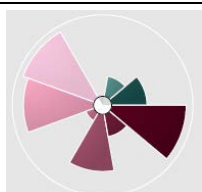
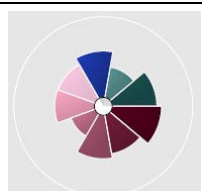
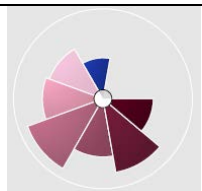
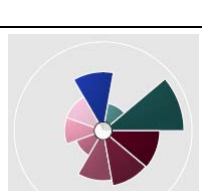
Source	Location	Description
Koc-Jurczyk, 2014	Northeastern Poland	Closed landfill that had operated for 7 years
Kõrgmaa et al., 2011	Estonia	Active landfill, 4,300 m ³ leachate/year, population served: 100,000
Kulikowska and Klimiuk, 2008	Wysieka, Poland	Active landfill operated since 1996, 22 ha, over 7,000 tons of waste per year
Lang et al., 2017	United States	18 landfills: 1 closed, 17 active, 8-24 years old
Lu et al., 2016	Central Taiwan	4 landfills: two in urban areas (population served: 830,000 and 1,050,000), one rural area (population served: 56,000) and one suburb (population served: 87,000)
Marttinen et al., 2003	Finland	11 landfills: 8 active, 3 closed, 2-52 ha, 0.3-5 Mm ³ waste per year
Masoner et al., 2014	United States	19 active landfills: 12 municipal and 7 private, range in waste loads (1,000 to over 1,000,000 tons annually)
Matejczyk et al., 2011	Southern Poland	22 landfills, 1-22 years old, 1.92-128 ha, 1,800-200,000 Mg waste/year
Murray and Beck, 1990	Lake Charles, Louisiana, USA	Closed, received municipal waste from 1979-1985
Öman and Junestedt, 2008	Sweden	12 landfills, 2-50 years, 10-50 ha
Osako et al., 2004	Japan	7 landfills (active and closed)
Oturan et al., 2015	France	8 landfills
Palma-Fleming et al., 2000	Valdivia, Los Ríos, Chile	Landfill in operation since 1980, closed (113,920 m ³ of waste) and active sections (81,845 m ³ of waste)
Paxéus, 2000	Western Sweden	3 landfills: 2 active (each 8 ha), 1 closed (25 ha)
Peng et al., 2014	Guangzhou, China	2 municipal solid waste landfills: one small, old, and closed (5 million tons), one large, new, and open (opened in 2002, accepting 7,000-9,000 tons per day)
Qi et al., 2018	China	Over 40 landfills
Reinhart and Grosh, 1998	Florida, USA	39 lined landfills
Schwarzbauer et al., 2002	Germany	NA

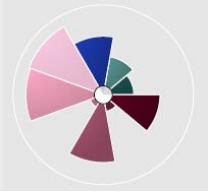
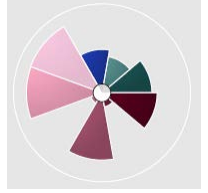
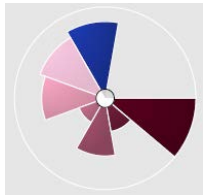
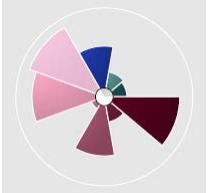
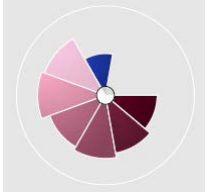
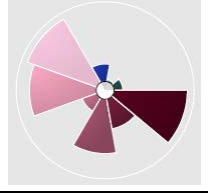
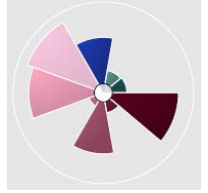
Source	Location	Description
Shi et al., 2020	Chongqing, China	2 landfills: one large and new that receives urban waste materials, one small and older
Smol et al., 2016	Częstochowa, Poland	Municipal landfill in operation since 1987, 128.4 ha
Topal and Topal, 2015	Elazığ City, Turkey	Active landfill, 80 ha, 97,000 tons/year, population served: 266,000
Wang and Kelly, 2017	Singapore	Sampling from leachate treatment wetland, original landfill: closed, capacity: 3,000 m ³ /day
Welander and Henrysson, 1998	Hyllstofta, Sweden	Active landfill, conventional mixed landfill (1,322,000 total tons of waste at time of sampling)
Wenzel et al., 1999	Germany	N/A
Wu et al., 2015	Shanghai, China	3 active sites (capacity: 1,700 tons/day, 1,500 tons/day, 10,000 tons/day)
Wu et al., 2017	Shanghai, China	Active, receives about 12,000 tons/day
Xu et al., 2008	Beijing, China	Municipal landfill in operation since 1996
You et al., 2018	China	7 active landfills, range of 2,200-10,000 t/d
Zhou et al., 2013	Shanghai, China	Urban landfill, receives around 10,000 tons/day

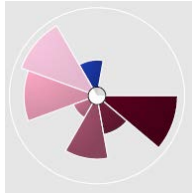
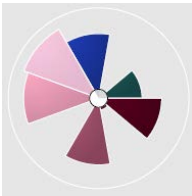
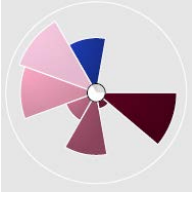
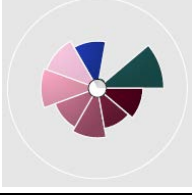
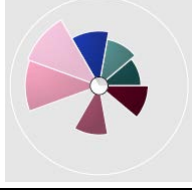
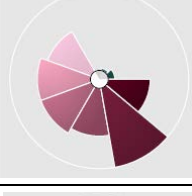
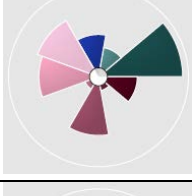
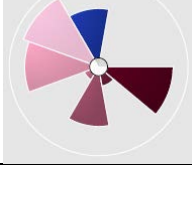
Table S3. Toxicity profiles generated in ToxPi of the 40 most toxic contaminants in landfill leachate according to the general prioritization scheme. For details on the scheme, refer to Section 2.2.4 and Figure 1 of the main text.

Rank	Compound	CASRN	Toxicity Profile
1	Endrin	72-20-8	
2	Dieldrin	60-57-1	
3	Aldrin	309-00-2	
4	Clotrimazole	23593-75-1	
5	Oxytetracycline	79-57-2	
6	Chlordane	12789-03-6	
7	Indeno(123cd)pyrene	193-39-5	

Rank	Compound	CASRN	Toxicity Profile
8	Heptachlor	76-44-8	
9	Tetrabromobisphenol-A	79-94-7	
10	p,p'-DDE	72-55-9	
11	p,p'-DDT	50-29-3	
12	1,2,3,4,7,8-hexaCDD	39227-28-6	
13	Tetracycline	60-54-8	
14	4,4'-DDD	72-54-8	
15	Benzo(a)pyrene	50-32-8	

Rank	Compound	CASRN	Toxicity Profile
16	Benzo(ghi)perylene	191-24-2	
17	Benzo(b)fluoranthene	205-99-2	
18	Dibenz(ah)anthracene	53-70-3	
19	Heptachlor epoxide	1024-57-3	
20	PCB-187	52663-68-0	
21	Benzo(k)fluoranthene	207-08-9	
22	Doxycycline	564-25-0	
23	Benz(a)anthracene	56-55-3	

Rank	Compound	CASRN	Toxicity Profile
24	Endosulfan I	959-98-8	
25	Endosulfan sulfate	1031-07-8	
26	2,3,7,8-TCDF	51207-31-9	
27	BDE-47	5436-43-1	
28	Chlortetracycline	57-62-5	
29	PCB-153	35065-27-1	
30	BDE-99	60348-60-9	

Rank	Compound	CASRN	Toxicity Profile
31	PCB-128	38380-07-3	
32	Lindane	58-89-9	
33	PCB-105	32598-14-4	
34	Enrofloxacin	93106-60-6	
35	Pentachlorophenol	87-86-5	
36	Codeine	76-57-3	
37	Tebuconazole	80443-41-0	
38	BDE-100	189084-64-8	

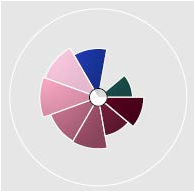
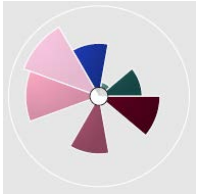
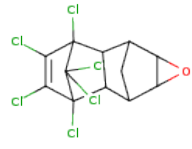
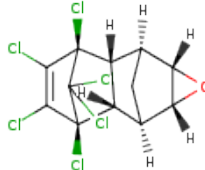
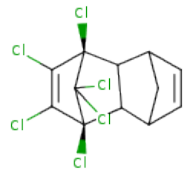
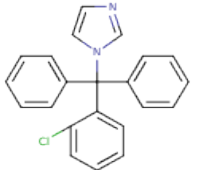
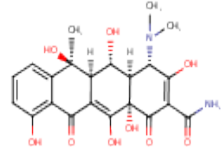
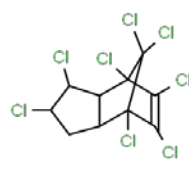
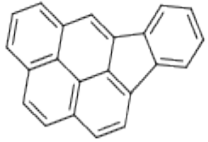
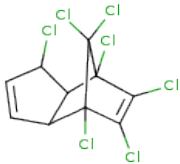
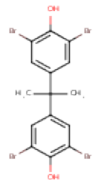
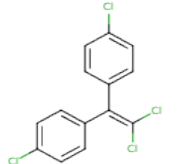
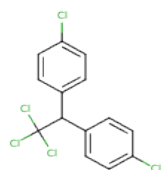
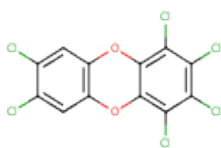
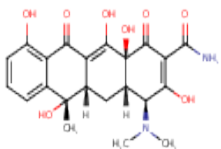
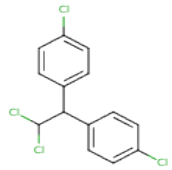
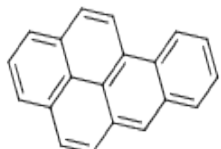
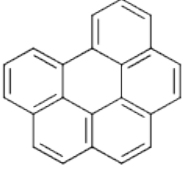
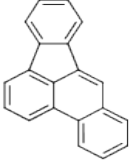
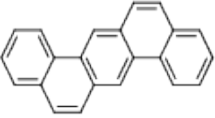
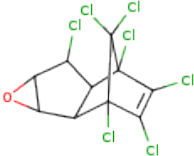
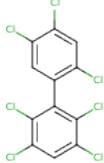
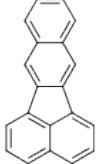
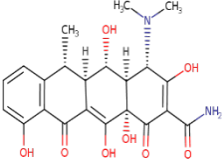
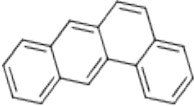
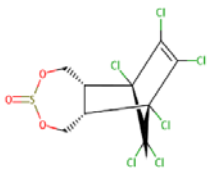
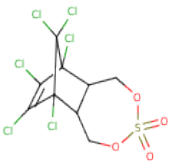
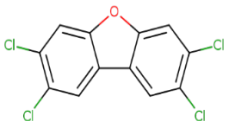

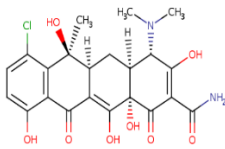
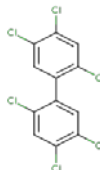
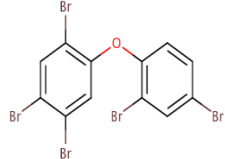
Rank	Compound	CASRN	Toxicity Profile
39	Ofloxacin	82419-36-1	
40	Pentachlorobenzene	608-93-5	

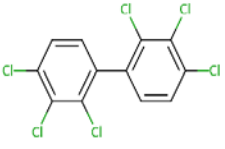
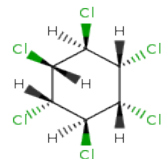
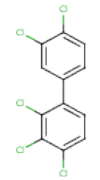
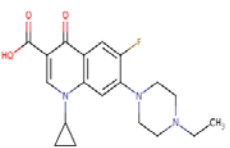
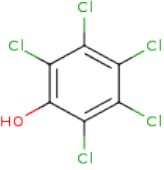
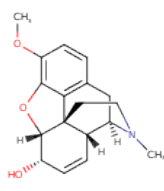
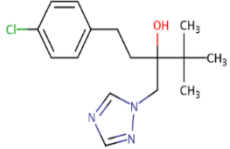
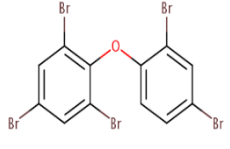
Table S4. Physicochemical properties of the 40 most toxic contaminants in landfill leachate according to ToxPi analysis using the general prioritization scheme. For details on the scheme, refer to Section 2.2.4 and Figure 1 of the main text.

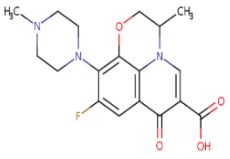
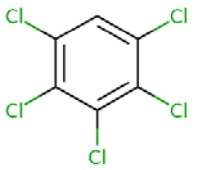
Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
1	Endrin	72-20-8	4.98	Basic: -4.2	
2	Dieldrin	60-57-1	4.98	Basic: -4.2	
3	Aldrin	309-00-2	5.91		
4	Clotrimazole	23593-75-1	5.44	Basic: 6.62	
5	Oxytetracycline	79-57-2	-0.192	Acidic: 0.24; Basic: 7.75	
6	Chlordane	12789-03-6	6.16 ^d		
7	Indeno(123cd)pyrene	193-39-5	6.74		

Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
8	Heptachlor	76-44-8	5.74		
9	Tetrabromobisphenol-A	79-94-7	6.99	Acidic: 6.57; Basic: -7.4	
10	p,p'-DDE	72-55-9	6.38		
11	p,p'-DDT	50-29-3	6.46		
12	1,2,3,4,7,8-hexaCDD	39227-28-6	7.77	Basic: -9.3	
13	Tetracycline	60-54-8	-0.0841	Acidic: -2.2; Basic: 8.24	
14	4,4'-DDD	72-54-8	5.81		
15	Benzo(a)pyrene	50-32-8	6.24		

Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
16	Benzo(ghi)perylene	191-24-2	6.76		
17	Benzo(b)fluoranthene	205-99-2	6.15		
18	Dibenz(ah)anthracene	53-70-3	6.87		
19	Heptachlor epoxide	1024-57-3	5.25	Basic: -4.2	
20	PCB-187	52663-68-0	7.32		
21	Benzo(k)fluoranthene	207-08-9	6.2		
22	Doxycycline	564-25-0	0.808	Acidic: -2.2; Basic: 7.75	
23	Benz(a)anthracene	56-55-3	5.73		

Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
24	Endosulfan I	959-98-8	3.58		
25	Endosulfan sulfate	1031-07-8	3.93		
26	2,3,7,8-TCDF	51207-31-9	6.37	Basic: -3.7	
27	BDE-47	5436-43-1	6.89		
28	Chlortetracycline	57-62-5	0.798		
29	PCB-153	35065-27-1	6.93		
30	BDE-99	60348-60-9	7.59		

Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
31	PCB-128	38380-07-3	7.2		
32	Lindane	58-89-9	3.95		
33	PCB-105	32598-14-4	6.63		
34	Enrofloxacin	93106-60-6	0.771		
35	Pentachlorophenol	87-86-5	4.92	Acidic: 4.98; Basic: -8.5	
36	Codeine	76-57-3	1.21	Acidic: 13.78; Basic: 9.19	
37	Tebuconazole	80443-41-0	3.73	2.3 ⁵	
38	BDE-100	189084-64-8	7.5		

Rank	Compound	CASRN ¹	LogP ²	pKa ³	Chemical Structure ⁵
39	Ofloxacin	82419-36-1	0.106	5.97 (carboxylic acid); 9.28 (piperiziny ring) ⁴	 The chemical structure of Ofloxacin is a fluoroquinolone. It features a central pyridone ring system with a piperazine ring attached at the 7-position, a methyl group at the 8-position, and a carboxylic acid group at the 3-position. A fluorine atom is attached to the 6-position of the pyridone ring.
40	Pentachlorobenzene	608-93-5	4.97		 The chemical structure of Pentachlorobenzene is a benzene ring with five chlorine atoms (Cl) attached to it, one at each of the five positions.

¹ Chemical Abstracts Service Registry Number

² From <https://comptox.epa.gov/dashboard>

³ From <http://www.t3db.ca/>

⁴ From pubchem.ncbi.nlm.nih.gov

⁵ Marvin 17.21.0, ChemAxon.

Table S5. Health impacts and associated references of the 40 most toxic contaminants in landfill leachate according to ToxPi analysis using the general prioritization scheme. For details on the scheme, refer to Section 2.2.4 and Figure 1 of the main text.

Rank	Compound	CASRN ¹	Health Impacts	Reference
1	Endrin	72-20-8	neurological, endocrine	Mnif et al., 2011
2	Dieldrin	60-57-1	developmental, endocrine, hepatic, immunological, neurological	Mnif et al., 2011
3	Aldrin	309-00-2	developmental, endocrine, hepatic, immunological, neurological	Mnif et al., 2011
4	Clotrimazole	23593-75-1	potential endocrine disruptor	Sabourin et al., 2010
5	Oxytetracycline	79-57-2	potential endocrine disruptor	Ji et al., 2010
6	Chlordane	12789-03-6	endocrine disruption	Huang et al., 2004
7	Indeno(123cd)pyrene	193-39-5	Known animal carcinogen, possible human carcinogen	T3DB ²
8	Heptachlor	76-44-8	developmental, reproductive, endocrine	Mnif et al., 2011
9	Tetrabromobisphenol-A	79-94-7	potential endocrine disruptor, neurotoxicity	Yu et al., 2019
10	p,p'-DDE	72-55-9	developmental, endocrine, hepatic, neurological, reproductive	Mnif et al., 2011
11	p,p'-DDT	50-29-3	developmental, endocrine, hepatic, neurological, reproductive	Mnif et al., 2011
12	1,2,3,4,7,8-hexaCDD	39227-28-6	probable carcinogen	US EPA (a)
13	Tetracycline	60-54-8	endocrine disruption	Zeh et al., 2012

Rank	Compound	CASRN¹	Health Impacts	Reference
14	4,4'-DDD	72-54-8	developmental, endocrine, hepatic, neurological, reproductive	Mnif et al., 2011
15	Benzo(a)pyrene	50-32-8	probable human carcinogen	ATSDR, 2009
16	Benzo(ghi)perylene	191-24-2	not classified	Kim et al., 2013
17	Benzo(b)fluoranthene	205-99-2	probable human carcinogen	ATSDR, 2009
18	Dibenz(ah)anthracene	53-70-3	probable human carcinogen	ATSDR, 2009
19	Heptachlor epoxide	1024-57-3	developmental, reproductive	Mnif et al., 2011
20	PCB-187	52663-68-0	carcinogenic to humans, endocrine	T3DB; Tijani et al., 2013
21	Benzo(k)fluoranthene	207-08-9	possible human carcinogen	ATSDR, 2009
22	Doxycycline	564-25-0	possible endocrine disruptor	Hou et al., 2019
23	Benz(a)anthracene	56-55-3	probable human carcinogen	ATSDR, 2009
24	Endosulfan I	959-98-8	possible human carcinogen, neurological	T3DB ² ; Singh and Singh, 2014
25	Endosulfan sulfate	1031-07-8	neurological, possible carcinogen	T3DB ² ; Singh and Singh, 2014; Chan et al., 2007
26	2,3,7,8-TCDF	51207-31-9	possible neurological	Pelclova et al., 2018
27	BDE-47	5436-43-1	neurotoxicity	Tagliaferri et al., 2010

Rank	Compound	CASRN¹	Health Impacts	Reference
28	Chlortetracycline	57-62-5	possible endocrine disruptor	Ji et al., 2010
29	PCB-153	35065-27-1	carcinogenic to humans, endocrine	T3DB ² ; Tijani et al., 2013; Lasserre et al., 2009
30	BDE-99	60348-60-9	neurotoxicity	Tagliaferri et al., 2010
31	PCB-128	38380-07-3	endocrine	Tijani et al., 2013
32	Lindane	58-89-9	possible carcinogen, endocrine	T3DB ² ; Tijani et al., 2013
33	PCB-105	32598-14-4	carcinogenic to humans, endocrine	Tijani et al., 2013
34	Enrofloxacin	93106-60-6	not classified	
35	Pentachlorophenol	87-86-5	developmental, endocrine, reproductive	Mnif et al., 2011
36	Codeine	76-57-3	not classified	
37	Tebuconazole	80443-41-0	possible human carcinogen	Pubchem ³
38	BDE-100	189084-64-8	endocrine	Hamers et al., 2008
39	Ofloxacin	82419-36-1	toxic to mammalian cells in culture	Kato and Onondera, 1988
40	Pentachlorobenzene	608-93-5	hepatic, urinary	US EPA (b)

¹ Chemical Abstracts Service Registry Number

² Toxin and Toxin-Target Database, <http://www.t3db.ca/>

³ pubchem.ncbi.nlm.nih.gov

Table S6. Top 40 most toxic chemicals found in landfill leachate according to the flora and fauna weighted prioritization scheme. For details on the scheme, refer to Section 2.3.2 and Figure 1 of the main text.

Weighted Rank	Compound	CAS	40 C.F.R. § 258. App. I ¹	40 C.F.R. § 258. App. II ²
1	Endrin	72-20-8		*
2	Dieldrin	60-57-1		*
3	Aldrin	309-00-2		*
4	1,2,3,4,7,8-hexaCDD	39227-28-6		
5	Benzo (a) pyrene	50-32-8		*
6	p,p'-DDT	50-29-3		*
7	Heptachlor	76-44-8		*
8	Clotrimazole	23593-75-1		
9	2,3,7,8-TCDF	51207-31-9		
10	p,p'-DDE	72-55-9		*
11	Indeno(123cd)pyrene	193-39-5		*
12	4,4'-DDD	72-54-8		*
13	Benzo(ghi)perylene	191-24-2		*
14	Chlordane	12789-03-6		*
15	Dibenz(ah)anthracene	53-70-3		*
16	Tetrabromobisphenol-A	79-94-7		
17	Oxytetracycline	79-57-2		
18	Benzo(b)fluoranthene	205-99-2		*
19	Benz(a)anthracene	56-55-3		*
20	Lindane	58-89-9		*
21	Endosulfan I	959-98-8		*
22	Naphthalene	91-20-3		*
23	Atrazine	1912-24-9		
24	Benzo(k)fluoranthene	207-08-9		*
25	Tetracycline	60-54-8		
26	BDE-99	60348-60-9		
27	PCB-105	32598-14-4		*
28	BDE-100	189084-64-8		
29	Propiconazole	60207-90-1		
30	Pentachlorophenol	87-86-5		*
31	BDE-47	5436-43-1		
32	Triclocarban	101-20-2		
33	Hexachlorobenzene	118-74-1		*
34	Triclosan	3380-34-5		
35	MCPA	94-74-6		
36	Hexazinone	51235-04-2		
37	Dichlorobenzene	106-46-7	*	*
38	Endosulfan sulfate	1031-07-8		*
39	Pentachlorobenzene	608-93-5		*
40	Doxycycline	564-25-0		

¹ A star indicates inclusion in Appendix I, 40 C.F.R. § 258.

² A star indicates inclusion in Appendix II, 40 C.F.R. § 258.

Table S7. Top 40 most toxic chemicals found in landfill leachate according to the cancer weighted prioritization scheme. For details on the scheme, refer to Section 2.3.2 and Figure 1 of the main text.

Weighted Rank ^a	Compound	CAS	40 C.F.R. § 258. App. I ¹	40 C.F.R. § 258. App. II ²
1	Oxytetracycline	79-57-2		
2	Doxycycline	564-25-0		
3	Tetracycline	60-54-8		
4	Codeine	76-57-3		
5	Clotrimazole	23593-75-1		
6	Indeno(123cd)pyrene	193-39-5		*
7	Benzo(ghi)perylene	191-24-2		*
8	Chlorotetracycline	57-62-5		
9	Dibenz(ah)anthracene	53-70-3		*
10	Endrin	72-20-8		*
11	Dieldrin	60-57-1		*
12	Aldrin	309-00-2		*
13	Benzo(b)fluoranthene	205-99-2		*
14	Benzo (a) pyrene	50-32-8		*
15	Benz(a)anthracene	56-55-3		*
16	Benzo(k)fluoranthene	207-08-9		*
17	Ofloxacin	82419-36-1		
18	Enrofloxacin	93106-60-6		
19	1,2,3,4,7,8-hexaCDD	39227-28-6		
20	1,2,3,7,8-pentaCDD	40321-76-4		
21	PCB-128	38380-07-3		*
22	PCB-153	35065-27-1		*
23	2,3,7,8-TCDF	51207-31-9		
24	PCB-187	52663-68-0		*
25	PCB-105	32598-14-4		*
26	p,p'-DDE	72-55-9		*
27	Heptachlor	76-44-8		*
28	BDE-47	5436-43-1		
29	p,p'-DDT	50-29-3		*
30	Tetrabromobisphenol-A	79-94-7		
31	4,4'-DDD	72-54-8		*
32	Heptachlor epoxide	1024-57-3		*
33	Ampicillin	69-53-4		
34	Chlordane	12789-03-6		*
35	Fluoranthene	206-44-0		*
36	BDE-99	60348-60-9		
37	Endosulfan I	959-98-8		*
38	Endosulfan sulfate	1031-07-8		*
39	BDE-100	189084-64-8		
40	Amoxicillin	26787-78-0		

¹ A star indicates inclusion in Appendix I, 40 C.F.R. § 258.

² A star indicates inclusion in Appendix II, 40 C.F.R. § 258.

Table S8. Top 40 most toxic chemicals found in landfill leachate according to the endocrine disruption weighted prioritization scheme. For details on the scheme, refer to Section 2.3.2 and Figure 1 of the main text.

Weighted Rank	Compound	CAS	40 C.F.R. § 258. App. I ¹	40 C.F.R. § 258. App. II ²
1	Bisphenol A	80-05-7		
2	p,p'-DDT	50-29-3		*
3	p,p'-DDE	72-55-9		*
4	Octyl phenol	1806-26-4		
5	Endrin	72-20-8		*
6	Dieldrin	60-57-1		*
7	Aldrin	309-00-2		*
8	Clotrimazole	23593-75-1		
9	Oxytetracycline	79-57-2		
10	Heptachlor	76-44-8		*
11	Chlordane	12789-03-6		*
12	Indeno(123cd)pyrene	193-39-5		*
13	4,4'-DDD	72-54-8		*
14	Tetrabromobisphenol-A	79-94-7		
15	1,2,3,4,7,8-hexaCDD	39227-28-6		
16	Tetracycline	60-54-8		
17	Benzo(a)pyrene	50-32-8		*
18	Benzo(ghi)perylene	191-24-2		*
19	PCB-153	35065-27-1		*
20	Butylparaben	94-26-8		
21	Benzo(b)fluoranthene	205-99-2		*
22	Dibenz(ah)anthracene	53-70-3		*
23	Heptachlor epoxide	1024-57-3		*
24	PCB-187	52663-68-0		*
25	Endosulfan I	959-98-8		*
26	Benzo(k)fluoranthene	207-08-9		*
27	Doxycycline	564-25-0		
28	Benz(a)anthracene	56-55-3		*
29	Endosulfan sulfate	1031-07-8		*
30	2,3,7,8-TCDF	51207-31-9		
31	BDE-47	5436-43-1		
32	Chlorotetracycline	57-62-5		
33	Lindane	58-89-9		*
34	BDE-99	60348-60-9		
35	PCB-128	38380-07-3		*
36	PCB-105	32598-14-4		*
37	Enrofloxacin	93106-60-6		
38	Pentachlorophenol	87-86-5		*
39	Codeine	76-57-3		
40	Tebuconazole	80443-41-0		

¹ A star indicates inclusion in Appendix I, 40 C.F.R. § 258.

² A star indicates inclusion in Appendix II, 40 C.F.R. § 258.

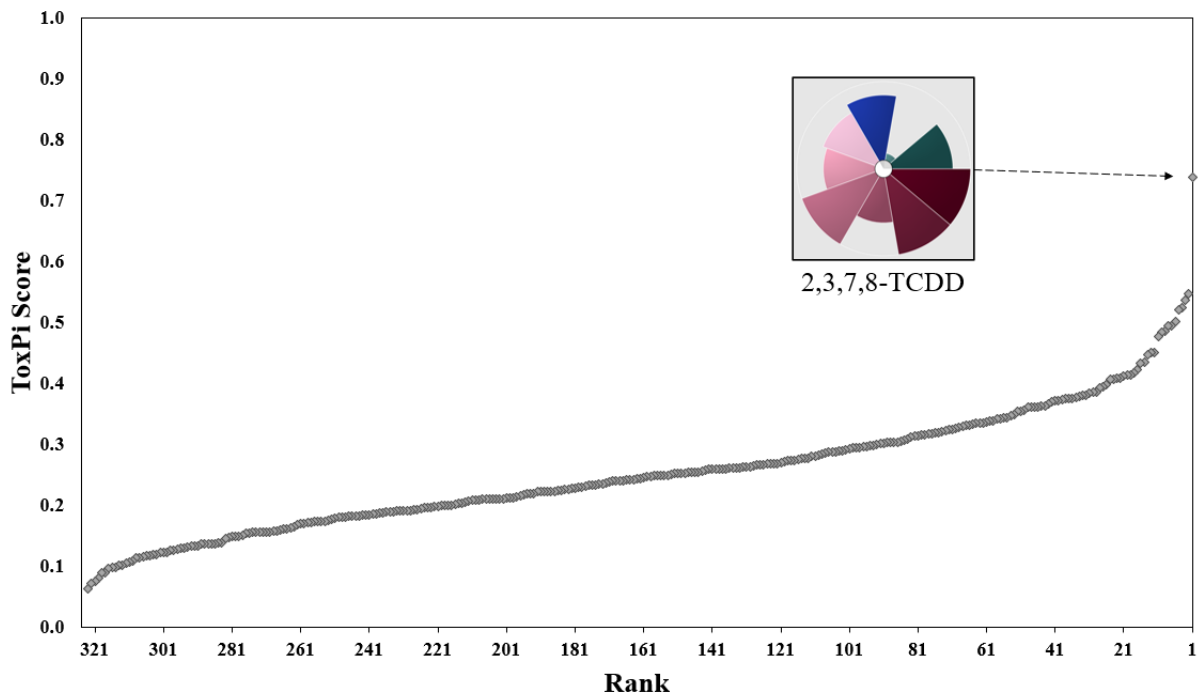
Table S9. Top 40 most toxic chemicals found in landfill leachate according to the general + endocrine disruption data prioritization scheme. For details on the scheme, refer to Section 2.3.1 and Figure 1 of the main text.

General + ED Data Rank	Compound	CASRN	40 C.F.R. § 258. App. I ¹	40 C.F.R. § 258. App. II ²
1	p,p'-DDT	50-29-3		*
2	Endrin	72-20-8		*
3	p,p'-DDE	72-55-9		*
4	Dieldrin	60-57-1		*
5	Aldrin	309-00-2		*
6	Clotrimazole	23593-75-1		
7	Bisphenol A	80-05-7		
8	Oxytetracycline	79-57-2		
9	Chlordane	12789-03-6		*
10	Heptachlor	76-44-8		*
11	indeno(123cd)pyrene	193-39-5		*
12	Tetrabromobisphenol-A	79-94-7		
13	1,2,3,4,7,8-hexaCDD	39227-28-6		
14	4,4'-DDD	72-54-8		*
15	Tetracycline	60-54-8		
16	Benzo (a) pyrene	50-32-8		*
17	Benzo(ghi)perylene	191-24-2		*
18	Benzo(b)fluoranthene	205-99-2		*
19	dibenz(ah)anthracene	53-70-3		*
20	Heptachlor epoxide	1024-57-3		*
21	PCB-187	52663-68-0		*
22	benzo(k)fluoranthene	207-08-9		*
23	Doxycycline	564-25-0		
24	Benz(a)anthracene	56-55-3		*
25	Endosulfan I	959-98-8		*
26	Endosulfan sulfate	1031-07-8		*
27	2,3,7,8-TCDF	51207-31-9		
28	PCB-153	35065-27-1		*
29	BDE-47	5436-43-1		
30	Chlorotetracycline	57-62-5		
31	BDE-99	60348-60-9		
32	PCB-128	38380-07-3		*
33	Lindane	58-89-9		*
34	PCB-105	32598-14-4		*
35	Enrofloxacin	93106-60-6		
36	Pentachlorophenol	87-86-5		*
37	Codeine	76-57-3		
38	Tebuconazole	80443-41-0		
39	BDE-100	189084-64-8		
40	Ofloxacin	82419-36-1		

¹ A star indicates inclusion in Appendix I, 40 C.F.R. § 258.

² A star indicates inclusion in Appendix II, 40 C.F.R. § 258.

Figure S1. Distribution dot plot of ToxPi scores for all contaminants, including outlier 2,3,7,8-TCDD, which was removed from further analysis. The toxicity profile for 2,3,7,8-TCDD is displayed in the inset.



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From: T Cayer <cayermedia@gmail.com>
Sent: Wednesday, November 24, 2021 5:45 PM
To: ANR - WSMD Wastewater
Subject: in support of D.U.M.P. !
Attachments: [DUMP comments to Draft Permit 3-1406.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Vermont ANR:

I am writing in support of the Vermont organization D.U.M.P. and their "insistence that the Draft Permit 3-1406 be denied and a new process begun, incorporating all the public comments received that echo similar concerns as DUMP expresses in their cover letter and mark-up of the Draft Permit, attached.

DUMP cover letter and permit markup was attached to this comment.

Thank you,

*Timothy Cayer
Forest Lake
Owner and Taxpayer in Whitefield, NH*

From: JAY WALSH <jaywalsh@usa.net>
Sent: Wednesday, November 24, 2021 4:57 PM
To: ANR - WSMD Wastewater
Subject: Concerning the Draft Pretreatment Discharge Permit No 3-1406
Attachments: Jay Walsh Pretreatment Permit Comments 11-24-2021.docx

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Attached you will find my comments concerning the Draft Pretreatment Discharge Permit No 3-1406

Sincerely,

Jay Walsh
Resident Newport, VT

From: Jay Walsh
Resident of Newport, VT.

November 24th, 2021

Presented to:
Vermont Agency of Natural Resources
Department of Environmental Conservation Watershed Management Division

Concerning the Draft Pretreatment Discharge Permit No 3-1406

I have been closely following the Coventry land site developments for the past 5 years file with you now my concerns regarding the draft pretreatment discharge permit released on September 20th, 2021.

Specifically :

That the discharge limit of 60,000 gpd to the City of Montpelier WWTF increase to 100,000 gallons per day (gpd) is excessive and will cause harm to both the WWTF as well as the toxic load to the Dog River and the Winooski River. The bioaccumulation of the toxic chemicals, even at the approved levels sited in the Clean Water Act (Priority Pollutants by the EPA in 40 CFR), will remain a threat to both public as well as private wells along these rivers.

Also, I oppose any modification/amendment of this permit which directs any discharge from the NEWSVT Landfill in Coventry, VT to the Lake Memphremagog Watershed.

I am in opposition to this Pretreatment Permit being combined with the plan for a Leachate Treatment Pilot Study Project. These should be separate permits as: The NEWSVT Landfill has NOT been granted, nor has applied for, a modification of the Landfill Permit to allow for an Industrial Treatment facility. This is outside of the scope of the Landfills operating criteria and a special permit to allow for this change of use needs to be in place prior to a permit being issued for an operation of this design.

It is also concerning to me that, the permittee is a corporation that is most concerned with making a profit for their shareholders, not protecting public health and the environment. The draft permit states that the Agency of Natural Resources will direct the permittee to select technology equivalent to those presented in a Brown Caldwell study published more than 2 years ago. This Leachate Treatment Facility should be developed, built and operated by the State of Vermont. It is the only way to control the importation of out of state Leachate to Vermont.

Given the importance of Lake Memphremagog as a drinking water reservoir for nearly 200,000 residents in Quebec, as well as the lake's future potential as a drinking water source for other communities all along the lake, I believe that the precautionary principle must be applied and that no pilot study and no leachate treatment or pretreatment should be done in the watershed. There is already a permitted WWTF in Newport, as well as the potential contamination of the lake from the leaking NEWSVT Landfill. Adding more contaminants to this lake will threaten its potential as a drinking water source in the future.

I oppose the importation and discharge of Leachate from out of state sources for the sole purpose of treatment and discharge into Vermont's rivers and lakes. This is a matter of Public Health and Welfare. The importation of these toxic chemicals called Leachate should be outright banned by the Secretary of ANR as a threat to Public Health. This approach can and will withstand the argument of interstate commerce of the Commerce Clause. This is a clear defense of our State and supported by rulings of the Supreme Court to protect local interests when it comes to Health, Safety and Welfare.

I hope you will consider alternative sites outside of the Memphremagog Watershed for the pretreatment or the treatment of leachate.

It is important to the economic future of City of Newport and Town of Derby to be good neighbors as we share this precious resource.

From: Megan Moir <mmoir@burlingtonvt.gov>
Sent: Wednesday, November 24, 2021 4:02 PM
To: ANR - WSMD Wastewater
Subject: 3-1406 New England Waste Services Inc PUBLIC COMMENTS

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To Whom It May Concern,

As a downstream drinking water provider we offer the following comments for your consideration:

1. Generally, it is in everyone's best interest that we figure out how to tackle this issue of PFAS in landfill leachate. Many communities, Burlington included, rely on Coventry for waste disposal. We also recognize that the PFAS challenge and environmental "loop", as is the case with all emerging contaminants, is a complex one. Overall we are pleased with the requirements around the PILOT study and particularly those that allow for stakeholders to evaluate proposals and provide public comment (such as 5.a.vi). That said, 1) because we are downstream of this discharge and 2) because it is in the best interest of the scientific and environmental community to gather as much data on this issue as possible, we provide the remainder of the comments.
2. I.A.2 - Monthly grab samples are not a robust characterization of PFAS. At a minimum monthly COMPOSITE sampling should be used, and ideally (if hold times allow) at least once a month, a weekly composite should be collected to determine the LOAD of PFAS being delivered to the effluent. Consider more robust sampling in the beginning and then, if demonstrated that concentrations and loads are consistent, consider backing off to something less frequent (but certainly something more than just a grab sample which is a VERY narrow snap shot in time.
 - a. How can you report a daily max if it is only monthly sampling? Do you mean that you would only report one MAX for the one day of the year that is the highest?
3. I.A.4.ii – monitoring at the WWTP should also be more robust (monthly at minimum and composite not grab), with possible modification once consistency is established.
4. Instream sampling (see sampling frequency and composite vs. grab comment above)
5. Question – is there a place where influent sampling can occur to distinguish between Montpelier WWTF influent (from Montpelier collection system) PFAS concentrations vs. influent that already has leachate effluent mixed in?
6. I.A.3.e – Please consider shortening the resampling requirement to something much less than 30 days.
7. Please consider forming a technical stakeholder working group to review and evaluate the results and recommendations of the PILOT study. As it stands right now, it is not clear what leverage stakeholders have on 5.f.

Thank you,
Megan Moir

Division Head Burlington Water Resources

Please note that this communication and any response to it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

From: Giannetti, Nick
Sent: Wednesday, November 24, 2021 1:48 PM
To: ANR - WSMD Wastewater
Subject: FW: Nick I will get this scanned in as soon as I get to a scanner - wanted to be sure you got it today.
Attachments: IMG_0913.jpg; IMG_0915.jpg; IMG_0916.jpg



Nick Giannetti | Pretreatment Coordinator
Vermont Agency of Natural Resources | Department of Environmental Conservation
Watershed Management Division, Wastewater Management Program
1 National Life Drive, Davis 3 | Montpelier, VT 05620-3522
802-490-6186 cell
Nick.Giannetti@Vermont.gov
<http://dec.vermont.gov/watershed/wastewater>

From: Joe Gay <John.Gay@casella.com>
Sent: Wednesday, November 24, 2021 1:43 PM
To: Giannetti, Nick <Nick.Giannetti@vermont.gov>
Cc: documents4dump <documents4dump@gmail.com>
Subject: Nick I will get this scanned in as soon as I get to a scanner - wanted to be sure you got it today.

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John Gay, E.I.
Region Engineer
Casella Waste Systems, Inc.

1855 VT Route 100, Hyde Park, VT 05655
p. 802.651.5454 | c. 802.236.5973 | f. 802.888.7931

Learn more at casella.com



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A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

November 24, 2021

Mr. Nicholas Giannetti
State of Vermont Agency of Natural Resources
Waste Management & Prevention Division
1 National Life Drive, Davis 1
Montpelier, VT 05602-3704

**RE: New England Waste Services, Inc.
Draft Pretreatment Leachate Discharge Permit
Draft Permit Review Comments**

Dear Mr. Giannetti:

New England Waste Services, Inc. (NEWS) is in receipt of the draft Pretreatment Leachate Discharge Permit #3-1406 that was issued on September 20, 2021. NEWS Has reviewed the draft permit and offers the following comments:

- Permittee Address, cover page: Please revise the Permittee Address to: 1855 Vermont Route 100, Hyde Park, Vermont 05655.
- Page 2 - Table: Monitoring Requirements: Please consider aligning the pH testing requirements to 2x-Weekly to match the BOD monitoring requirements. Decades of monitoring for pH suggests that pH does not fluctuate by more than a few one hundredths.
- Page 2 - notes below Table: First sentence; Please consider removing the first sentence in (1)(A.)(1.(b.) The restrictions concerning discharge of leachate when storm events, or when a storm event is imminent is problematic for several reasons, as follows; The weather can be different between Montpelier and Coventry, contacting the plant to determine actual or projected weather is not practical. In addition, a light rain should not be prohibitive to the discharge of leachate. Finally, there is no definition of "storm" or the other terms in that sentence, so it will be difficult to interpret precisely when the restriction applies. NEWS does not take exception to the second sentence in (b).
- Page 3 - (2.) Table Header: Please consider revising Effluent Monitoring Requirements: to read "The Permittee shall monitor and record the quality and quantity of landfill leachate from its NEWSVT (S/N 007), NCES (S/N 008), and CV (S/N 009) landfills if discharge to the Montpelier WWTF occurs (or if discharge is expected/needed) during the reporting period in accordance with the following monitoring schedule:" As you are aware, discharge from the NCES (S/N 008) site almost never occurs, and only does if the primary plants that it uses cannot accept leachate. In addition, with respect to CV (S/N 009), please revise the required schedule for sampling the CV liquid to 2X-Annually. The discharge consists primarily of groundwater, therefore concentrations of listed contaminants are extremely low and well understood.
- Page 3 - Table, Monitoring Requirements: Please consider moving Flow, BOD & pH Monitoring Requirements to the Table on Page 2 to simplify the reporting requirements.

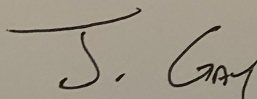
- Page 3 – Table, Monitoring Requirements, Measurement Frequency: Please consider making all quarterly frequencies listed to 2x Annually (with footnote 8). As previously mentioned, (except for PFAS) there are decades of data on these parameters and quarterly sampling would likely be redundant. In addition, the column labeled “Reporting Requirement” mentions “Daily Max” for “Grab” samples and we understand that a Daily Max reference is not necessarily accurate as we cannot characterize a daily maximum value from a single grab sample. Please remove “Daily Max” starting with the row for Aluminum, downward to the bottom of the table.
- Page 4 – first paragraph: Please consider adding “leachate tanker or the” after “collected from the” in the second sentence. Please consider revising the last sentence in the first paragraph to read “CV Landfill samples shall be collected from the on-site groundwater collection tank.”
- Page 4 – Footnote #3: - Reference is made to EPA modified Method 537, v1.1 in accordance with DoD QSM 5.2. This version of QSM is outdated; it was replaced in May 2019 with version 5.3. Please consider revising accordingly.
- Page 4 – Footnote #3: - This footnote includes a requirement to “... meet a target minimum detection limit (MDL) for PFHxS, PFHpA, PFNA, PFOS and PFOA or no greater than 2 ng/L.” The PFAS-certified lab we use states that this reporting level is very unlikely to be met for any landfill leachate, wastewater treatment plant influent or biosolids due to unavoidable interference complications. Note that modified Method 537, v1.1 is only promulgated for compliance analysis of drinking water. For analyzing leachate, treatment plant influent or treatment plant biosolids labs would achieve “the best possible Reporting Levels”, which would very likely not be as low as 2 ng/L. Please consider removing or increasing this minimum detection limit. This comment also applies to other sections of the permit where an MDL of 2 ng/L is referenced.
- Page 4 – Footnote #3: - Reference to Attachment A. The PFAS-certified lab that we routinely use states that two of the 26 parameters listed in Attachment A of the draft permit [PFHxDA and PFODA] are not listed as being in the scope of DoD QSM 5.3, so they cannot be analyzed in strict compliance with DoD QSM 5.3. Please consider removing [PFHxDA and PFODA] from the list to be tested. The clean-up media required for DoD retains these analytes, so the DoD recovery criteria cannot be met. For the 26-parameter analyte list in the draft permit, the lab states that they would follow DoD criteria to the extent possible and would use in-house-generated acceptance criteria.
- Page 5 – (3)(a.): Please consider revising this condition to providing the data in excel format monthly, rather than annually. The size of the “annual” data file will be extremely difficult to transmit due to its file size.
- Page 5 – (3)(e.): Please consider replacing “and pollutant analysis and submit, in writing, the results of this second analysis within 30 days of becoming aware of the first violation.” with “within 5 business days and report the analysis as soon as reported by the lab.” The justification for this change is that the data may not be available within 30 days and therefore the condition could not be met.
- Page 5 – (3)(f.): Please remove this first paragraph in its entirety. NEWS would not have the knowledge or control that this condition requires, nor would the plant operators. NEWS otherwise does not take exception to the second paragraph.

- **Page 14 – 2. Reporting:** With the @anrOnline reporting portal, it is assumed that the plant operators have direct access to signed DMR's. Please consider removing the second paragraph.
- **Page 17 – 3. Operations & Maintenance:** This section appears to be operations and maintenance at the wastewater facility. Please consider removing this section.
- **Page 18 – 4. Quality Control:** NEWS understands this condition applies to the on-site pH monitoring only. If so, please consider adding "(pH testing @ Landfills)" after "Quality Control".
- **Page 18 – 5. Bypass of WWTF:** Please consider removing this condition, NEWS has no authority to control Bypass at the Montpelier WWTF.
- **Page 19 – 8. Solids Management:** Please consider removing this condition, NEWS has no authority to control solids management at the Montpelier WWTF.
- **Page 19 – 9. Emergency Pollution Permits:** Please consider removing this condition, NEWS has no authority to control such circumstances at the Montpelier WWTF.
- **Page 20 – 10. Power Failure:** Please consider removing this condition, NEWS has no authority to provide back-up power utility at the Montpelier WWTF. Please note, it is our understanding the Montpelier WWTF has the necessary back up power utility required to operate in an emergency event.
- **Attachment A:** Please consider removing PFHxDA and PFODA from the list as these compounds cannot be analyzed in strict compliance with DoD QSM 5.3 that is otherwise required by the permit.

Thank you for the opportunity to comment. Should you have any questions please feel free to contact me at (802) 651-5454.

Sincerely,

NEW ENGLAND WASTE SERVICES, INC.



John Gay, E.I.
Permits, Compliance & Engineering

- c. Jeremy Labbe, NEWS
Kevin Roy, NEWS
Samuel Nicolai, NEWS
Russ Anderson, NEWS
Kim Crosby, NEWS
Mark Johnson, NEWS

From: Peter Blair <pblair@clf.org>
Sent: Wednesday, November 24, 2021 10:31 AM
To: ANR - WSMD Wastewater
Cc: Hayley Jones; jgroveman; Paul Burns
Subject: Public Comment: NEWSVT Draft Pretreatment Discharge Permit (Permit No. 3-1406)
Attachments: Comments on Draft Pretreatment Discharge Permit NEWSVT (CLF, CAW, VNRC, VPIRG).pdf

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning,

Thank you for the opportunity to comment on the Draft Pretreatment Discharge Permit for New England Waste Services, Inc. (Permit No. 3-1406). The attached comments are submitted on behalf of Conservation Law Foundation, Community Action Works, Vermont Natural Resources Council, and Vermont Public Interest Research Group. The comments were also filed via the Environmental Notice Bulletin.

Respectfully submitted,
Peter Blair

Peter Blair, Esq.
Staff Attorney, Zero Waste Project
Conservation Law Foundation
Pronouns: he/him/his

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November 24, 2021

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, David Building
Montpelier, VT 05620-3522

Submitted Electronically

**RE: Draft Pretreatment Discharge Permit for New England Waste Services, Inc.
Permit No. 3-1406.**

Conservation Law Foundation, Community Action Works, Vermont Natural Resources Council, and Vermont Public Interest Research Group (collectively “Environmental Organizations” or “we”) appreciate the opportunity to submit comments on the Draft Pretreatment Discharge Permit (“draft permit”) for New England Waste Services of Vermont, Inc. (“Casella”).

The Environmental Organizations recognize the steps the Agency of Natural Resources (“ANR” or “Agency”) is taking to address per- and polyfluoroalkyl substances (“PFAS”) in landfill leachate. This permit represents an important first step in developing a comprehensive statewide system for the management of leachate. However, as currently drafted the permit does not contain sufficient detail and safeguards to ensure leachate will be managed in a manner that is most protective of the environment and public health.

A more detailed description of our comments follows, but in sum, we urge ANR to take the following actions to strengthen the draft permit:

- I. Require more monitoring at the Montpelier WWTP to better understand the impact of the landfill leachate on the Winooski River and resident fish populations;
- II. Take a more active role in developing the leachate pretreatment Pilot Project. Specifically, we recommend ANR:
 1. Set clear standards and conditions for how it will measure the success of the proposed Pilot Project;
 2. Define the scope of the Pilot Project in terms of the quantity and source of the leachate managed;
 3. Develop clear criteria controlling the management of residual waste generated from the selected pretreatment technology or technologies;
 4. Ensure that the selected pretreatment technology or technologies do not preclude the integration of new and emerging pretreatment and/or treatment technology; and

5. Commit to reopening the permit once the Agency or the Environmental Protection Agency promulgates and adopts a surface water quality standard for any PFAS compound.

We acknowledge that pre-treatment alone will not solve the problem of contaminants of emerging concern polluting our water. The pretreatment strategies contemplated by this draft permit are needed in addition to upstream solutions, where harmful contaminants, such as PFAS, are banned from being used in popular consumer products that eventually are thrown away into landfills.

Background: WWTPs Are Not Equipped to Remove Contaminants Like PFAS.

The current system of managing landfill leachate is inadequate to protect public health and the environment. Currently, Vermont manages all leachate through WWTPs. These facilities are not equipped to remove the diverse and complex range of contaminants in leachate prior to discharge into surface waters. Instead, this treatment is primarily focused on reducing wastewater discharges of so-called conventional pollutants: oil, grease, organics like nitrogen and phosphorous, total suspended solids, and settleable matter. These facilities do not treat for the long list of contaminants in leachate – PFAS, Polybrominated diphenyl ethers (“PBDEs”), and other chemicals of concern – that have been found to be highly toxic to humans and other species, and persistent in the environment. According to a USGS study, many leachate contaminants are present after leachate is processed by a municipal wastewater treatment plant.¹

The result of this ineffective management is that PFAS-contaminated wastewater is currently being discharged from WWTPs into our surface waters. These PFAS then bioaccumulate and threaten the environment and public health. A growing body of science has found that there are adverse health impacts associated with PFAS exposure, including liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, hormone suppression, and cancer.² PFAS exposure related to contaminated surface waters can occur through multiple pathways, including ingestion, inhalation, and direct surface contact.³

I. ANR should revise the draft permit to include more robust monitoring provisions.

The draft permit should be revised to incorporate more stringent monitoring provisions to better understand the impact of leachate management on the Winooski River, fish populations,

¹ J.R. Masoner, D. W. Kolpin, E. T. Furlong, I. M. Cozzarelli, I.M., & J. L. Gray, J.L., *Landfill leachate as a mirror of today's disposable society: Pharmaceuticals and other contaminants of emerging concern in final leachate from landfills in the conterminous United States*, 35 Environmental Toxicology and Chemistry 906-918 (2015).

² See, e.g., NTP (National Toxicology Program). 2016. Monograph on Immunotoxicity Associated with Exposure to Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Research Triangle Park, NC: National Toxicology Program, available at: https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf [pdf icon](#); Venkatesan, Arjun K., National inventory of perfluoroalkyl substances in archived U.S. biosolids from the 2001 EPA National Sewage Sludge Survey.

³National Health and Medical Research Council, *Guidance on Per and Polyfluoroalkyl (PFAS) in Recreational Water, Canberra*, p. 4 (2019) Available at <https://www.nhmrc.gov.au/sites/default/files/documents/attachments/guidance-on-PFAS-in-recreational-water.pdf>

and surrounding environment. Specifically, ANR should incorporate the following additional monitoring requirements:

1. ANR should require testing of the influent, effluent, and solids at the Montpelier WWTP prior to the increase to the maximum daily discharge limit.

The draft permit seeks to increase the maximum amount of leachate the Montpelier WWTP may accept from 23,000 gallons per day to 60,000 gallons per day.⁴ To better understand the impact of increasing the leachate maximum cap, ANR should require testing of the influent, effluent, and solids at the Montpelier WWTP *prior to the increase*. This testing should be identical to the testing required by the draft permit.⁵ This data will provide a baseline of the current conditions at the WWTP and can be used to evaluate any impacts associated with the increase in the volume of leachate processed at the facility during the duration of the permit. At minimum, ANR should conduct two samples identical to those required by the draft permit prior to the increase in volume.

2. ANR should require Casella to perform monitoring for PFAS in fish tissue above and below Outfall S/N 001.

Currently, the draft permit does not require Casella to perform any monitoring for PFAS in fish tissue. The draft permit does indicate that ANR may reopen and amend the permit to include fish tissue monitoring.⁶ ANR should require this monitoring at the outset of the permit to establish baseline conditions. This monitoring should occur throughout the duration of the permit to better understand the impact the increased volume of leachate processed at the Montpelier WWTP has on fish populations in the Winooski River. This monitoring will also help the Agency understand the base levels of PFAS in fish tissue and identify whether the increase in the volume of leachate processed at the Montpelier WWTP causes any correlated increase of PFAS found in fish tissue samples. This testing should be done above and below outfall S/N 001 located at the Montpelier WWTP.

II. ANR must revise the permit to have more control over the development and implementation of the pretreatment Pilot Project.

Currently, the permit would have Casella – not ANR – “identify specific operations, performance, economic, water quality, residuals and air quality parameters that will be analyzed through the pilot project.”⁷ While there is a need to be flexible at the outset of this long and groundbreaking process, this language gives the permittee near exclusive control in developing the Pilot Project. Instead, ANR should identify these parameters and require the permittee to select a technology that will meet them. Setting these parameters now is critical so that the public and the permittee understand how the Agency will evaluate the proposed Pilot Project and how it

⁴ *Draft Permit Factsheet*, at 2.

⁵ Agency of Natural Resources, Draft Pretreatment Discharge Permit for New England Waste Services, Inc., p. 9-10. Permit No. 3-140. (Sept. 30, 2021) [Hereinafter “Draft Permit.”]

⁶ *Draft Permit*, at. 7.

⁷ *Id.* at 8.

will determine if the project is successful. Specifically, we recommend ANR make the following changes to the draft permit related to the Pilot Project development and implementation:

1. Revise the draft permit to clearly define the scope of the Pilot Project.

The draft permit does not sufficiently describe the scope of the Pilot Project. As currently drafted, the permit contains scant detail related to the scope and boundaries of the project. Given that the Agency expects to utilize the data from the Pilot Project to both establish a Technology Based Effluent Limit and treatment standard for PFAS, as well as the design conditions of a full-scale leachate pretreatment system,⁸ additional clarity surrounding the scope of the project is necessary. We urge ANR to revise the draft permit to clearly articulate the following:

- i. The quantity of leachate Casella must manage under the Pilot Project;
- ii. The quantity of leachate generated in Vermont that will *not* be pretreated to remove PFAS as part of the Pilot Project. Given that leachate generation is dependent on precipitation, this should be reflected in a range from lowest to highest expected levels based on the previous five years of leachate generation; and
- iii. Whether the leachate pretreated though the Pilot Project will require additional treatment. If additional treatment is required, ANR must specify whether that treatment will occur at the Montpelier WWTP.

Additionally, the draft permit indicates that the Pilot Project should remove PFAS from leachate generated at the Coventry Landfill, NCES Landfill, and Central Vermont Landfill.⁹ We urge ANR to revise this language to limit the source of the leachate pretreated for PFAS removal to the leachate generated *from the Coventry Landfill only*. This requirement will ensure that the monitoring of influent, effluent, and solids is consistent in terms of inputs throughout the duration of the permit. It will also ensure that Casella cannot mix leachate from multiple sources to dilute the concentration of contaminants, thereby undermining the monitoring protocol. Furthermore, this restriction will also provide a better understanding of the concentration of PFAS in the leachate of Vermont's only active landfill. While the closed Central Vermont landfill does still produce some leachate, it is significantly less volume than the leachate produced at the Coventry Landfill. Having the Pilot Project exclusively focus on treating leachate from the Coventry Landfill will help the Agency as it reviews the progress reports and final report to determine whether the treatment technology can and should be scaled up to full implementation.

2. Revise the draft permit to set clear standards for how Casella will manage residual waste.

The draft permit limits the selection of the treatment or pretreatment technology to those identified in or that provide equivalent treatment to the technologies evaluated in the Conceptual Leachate Treatment Scoping Study performed by Brown and Caldwell in October of 2019 ("Scoping Study").¹⁰ All of the technologies evaluated in the Scoping Study, as well as all

⁸ Draft Permit, at 7.

⁹ *Id.* at 8.

¹⁰ Draft Permit, at 8.

commercially available technologies that provide equivalent treatment, isolate, but do not destroy PFAS. Instead, these technologies either concentrate or capture PFAS compounds into a liquid concentrate, solid residual, or spent media form. Each of these forms of residual waste are highly concentrated with PFAS and require additional management for final disposal. The management of this residual waste is a significant part of any pretreatment technology and must be evaluated carefully in terms of the potential environmental and public health risks.

The draft permit does not contain any detail regarding how this residual waste will be managed. ANR should revise the draft permit to set clear standards that address how Casella will test and manage this residual waste stream. We specifically recommend that ANR revise the draft permit to make the following three changes:

- i. Prohibit the burning (incineration, gasification, pyrolysis, etc.) of residual waste generated from pretreatment.

Managing the residual waste through incineration, gasification, or some other high heat technology involves the substantial risk of simply transferring PFAS from waste material into the air before eventually returning it to surface water and soil. Extremely high temperatures for an extended period of time are needed to destroy PFAS – in theory, 1,000 to 1,300 degrees Celsius or higher.¹¹ However, even that may not be adequate. In some studies which claimed to eliminate Perfluorooctane sulfonic acid (“PFOS”) through thermal destruction, residual PFOS were observed in the ash produced from the combustion process.¹² This ash will then require further management.

Incomplete destruction because of inadequate temperatures or insufficient residence times can also create various short-chain perfluoroalkyl acids (“PFAAs”).¹³ Short-chain PFAAs require higher temperatures to achieve thermal destruction than long-chain PFAAs, so their formation as by-products during thermal treatment of long-chain PFAAs can further complicate the objective of achieving complete destruction during incineration.¹⁴ Moreover, there is no sound method for measuring PFAS in emissions from air stacks. The Environmental Protection Agency (“EPA”) has acknowledged that there are no accepted or validated sources and air methods for measuring PFAS, and the EPA’s research into “analytical methods to detect, identify, and quantify PFAS in emissions and ambient air” is ongoing.¹⁵ Therefore, any claims

¹¹ U.S. EPA, Per- and Polyfluoroalkyl Substances (PFAS): Incineration to Manage PFAS Waste Streams, Technical Brief at 1 (February 2020), available at: https://www.epa.gov/sites/production/files/2019-09/documents/technical_brief_pfas_incineration_ioaa_approved_final_july_2019.pdf; *see also* Horst, J., et al., Understanding and Managing the Potential By-Products of PFAS Destruction, 40 Groundwater Monitoring & Remediations, 7, 20-21 (2020). doi: 10.1111/gwmr.12372 (noting that temperatures up to 900 degrees Celsius (1,652 degrees Fahrenheit) are likely insufficient to destroy PFAS in water).

¹² *Id.*

¹³ Watanabe, N., M. Takata, S. Takemine, and K. Yamamoto. 2018. Thermal mineralization behavior of PFOA, PFHxA, and PFOS during reactivation of granular activated carbon (GAC) in nitrogen atmosphere. Environmental Science and Pollution Research International 25, no. 8: 7200–7205.

¹⁴ *Id.*

¹⁵ U.S. EPA Office of Research & Development, Session 5: Source Emissions Measurement Methods and Modeling Air Emissions, Transport and Deposition, PFAS Science Webinars for Region 1 and New England States & Tribes, at 1-2 (September 23, 2020), available at: https://www.epa.gov/sites/production/files/2020-10/documents/r1-pfas_webinar_day_2_session_5_phelps-murphy_final.pdf

about the effectiveness of PFAS destruction through incineration and gasification are unverifiable.

Given the uncertainty over the effectiveness of thermal destruction of PFAS and the risk that it creates in transferring PFAS from waste material into the air, ANR should expressly prohibit the thermal destruction of all forms of residual waste from the pretreatment process. The prohibition must also apply to residual waste exported outside of Vermont. Incinerating this residual waste elsewhere creates significant environmental justice concerns. Waste incinerators are predominantly located in low-income and communities of color. According to the Global Alliance for Incinerator Alternatives, 79 percent of municipal solid waste incinerators are located in environmental justice communities.¹⁶ Allowing for this residual waste stream to be hauled out-of-state for burning will unjustly pass off Vermont's contaminated waste to other communities.

ii. Require Testing of All Residual Waste Generated from Pretreatment.

To better understand the nature of the residual waste, ANR should revise the draft permit to set clear testing requirements to evaluate PFAS in the residual waste. Testing should be done for all PFAS compounds specified in Attachment A of the draft permit. Additionally, this testing is necessary to understand whether the residual waste stream rises to the level of hazardous waste as defined by Vermont's Hazardous Waste Management Regulations. Vermont law classifies liquid wastes containing perfluorooctanoic acid ("PFOA") or PFOS in concentrations equal to or greater than 20 parts per trillion (ppt) as hazardous.¹⁷ This 20 ppt standard applies to the sum of both PFOA and PFOS.¹⁸ Should the testing indicate that the waste rises to the level of hazardous, the pretreatment facility should be classified as a generator of hazardous waste and the disposal of the waste should conform to federal and state regulations.

iii. Develop a Plan for the Management of Residual Waste.

Management of residual waste will depend on the pretreatment technology or technologies selected. However, in all cases, significant care must be taken to prevent reintroduction of PFAS into the environment. ANR should thoroughly study the different management methods to determine the best demonstrated available technology for sequestration or destruction of PFAS containing residual waste. This study should be completed by the Agency prior to the completion of the Pilot Project. This will ensure the Agency's findings can be used when evaluating whether to expand the scope of the pilot project. At a minimum, the study should evaluate:

- All existing commercially available disposal and destruction options;
- Emerging disposal and destruction options;

¹⁶ Celine Yang, *Addressing the Environmental Justice implications of Waste*, Environmental and Energy Study Institute, (May 14, 2021). Available at: <https://www.eesi.org/articles/view/qa-addressing-the-environmental-justice-implications-of-waste>

¹⁷ VT. Code R § 16-3-202:7-211. (2016).

¹⁸ *Id.*

- The effectiveness of fly ash, lime, cement kiln dust, and Portland cement as solidification agents; and
- The use of non-porous geotubes or supersack to sequester and separate the residual waste from other waste and precipitation prior to placement in a landfill.

A draft of the study should be made publicly available for comment prior to the release of a final report.

3. Revise the draft permit to ensure the Pilot Project is designed to integrate newly available and emerging PFAS treatment technologies.

the Environmental Organizations support the decision to limit the scope of the technology eligible for selection in the Pilot Project to either those presented in the Scoping Study or to those that provide equivalent treatment.¹⁹ However, we urge ANR to continuously revisit the availability of new and emerging technology that can remove, sequester, or destroy PFAS. PFAS treatment technologies are continuing to emerge, and certain technologies can be used sequentially in a “treatment chain” to better manage landfill leachate. As part of its evaluation of the selected pretreatment technology, ANR should consider whether the selected technology or technologies can incorporate new and emerging treatment options. Furthermore, ANR should require Casella to reevaluate treatment technologies periodically and present this evaluation to the Agency.

4. ANR should commit to reopening the permit following the adoption any state or federal surface water quality standard for any PFAS compound.

ANR is required by statute to develop and adopt a surface water quality standard for PFAS by January 1, 2024.²⁰ This surface water quality standard will therefore be issued before the five-year term for this permit is complete (triggering the need for Casella to reapply).²¹ Accordingly, we urge ANR to include a reopener provision in the final permit that would be triggered once a surface water quality standard is adopted for any individual PFAS compound of class of compounds. Reopening the permit will give ANR the opportunity to evaluate the pretreatment processes against the new standard and make any corrections necessary to ensure the effluent meets the new standard. Moreover, it will significantly change the monitoring and compliance requirements for the Montpelier WWTP. Therefore, the standard will change the regulatory framework under which the permit was issued, and the Agency should revisit the permit to ensure it is compliant with the new regulations.

III. Conclusion

The publication of the draft permit shows a clear intention by ANR to make Vermont a national leader in leachate management. The current system of running leachate through WWTPs is outdated and ineffective to address PFAS. The pilot project can help create a system

¹⁹ *Draft Permit*, at 8.

²⁰ Vt. Stat. Ann. tit. 10, ch.56

²¹ *Draft Permit*, at. 13. The draft permit indicates that the permit expires on March 31, 2016. If Casella wishes to continue to discharge leachate after the expiration of the permit, it must reapply at least 180 days before the permit expires.

that is more effective at addressing these toxic forever chemicals and other chemicals of concern. However, ANR should make the above permit revisions to better protect public health and the environment.

Thank you for the opportunity to submit comments on this draft permit. We look forward to continuing to engage on this important issue.

Respectfully Submitted,

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PUBLIC HEARING COMMENTS
Pretreatment Discharge Permit No. 3-1406
New England Waste Services, Inc.

Comments from October 26, 2021 Public Hearing in Newport

COMMENT 1 – SAMANTHA STEVENS:

Hello everyone, I'm Samantha Stevens. I'm a resident of Charleston and I'm here to raise concern regarding the lack of evidence of specific regulation guidelines or standards for leachate pretreatment in the draft permit. In special considerations 5B it states by no later than one year following the effective date of this permit, the Permittee shall have the leachate treatment, and or pretreatment technologies installed, and begin the pilot study in accordance with the approved plan. Only one year between the issuance of the permit and the start of the pilot study. Within this period, there would also have to have been research on siting, installation of new pretreatment equipment, and development and testing of systems for monitoring, and we heard a lot about a lot of additional monitoring required. How is it possible to do all of that work in one year – for all the necessary planning and implementation steps to occur within one year? Much of this work must already have been done. Can you tell me how the decisions regarding this implementation period have already been made, and if so, by whom? I realized we will not be able answer that today. Has the site already been determined? And is the only on site option the Coventry Landfill, or have other sites farther from the wetlands and watershed been identified? I ask that because I've been looking at reports from NewsVT over the last couple years and they're not really inspiring confidence that there are not issues with potential overages in those systems. Who is overseeing the hiring of consultants with expertise in this new field of waste management? Who are we putting our safety into the hands of? Casella? And when the Canadian legal teams start asking all of these same questions, will it be Vermont taxpayers who bear the brunt of this rushed process and its great potential for failure?

COMMENT 2 – JOHN BORROWS:

Thank you for the opportunity to speak tonight. I'm concerned that there's a likelihood that in 5 years, after the moratorium ends, that the dumping of leachate will return to Memphremagog. So, I'll start off with a question. I asked Secretary Moore and ANR to please fully and transparently describe in writing the negative current and long-term environmental effects of pouring millions of gallons of toxic leachate into Lake Memphremagog. ANR will soon decide the environmental fate of Lake Memphremagog for centuries to come. I oppose this permit because it will likely allow, in the future in 2026, for Casella landfill to pour millions of gallons of toxic leachate into an already polluted South Bay Lake Memphremagog. There is the assumption that the proposed PFAs removal facility will solve the toxic pollution problem of discharging leachate when it clearly does not. There is an assumption that this conceptual pilot pretreatment facility will have Vermont's only landfill, which in a few years could discharge into the Black River only a half a mile from the Lake, will solve the pollution problem. This is very far from the truth. The future pretreatment facility, as proposed, will remove only a few classes of PFAs and will not come close to removing 90% of the toxic contaminants, metals, chemicals, and poisons in the leachate. The vast majority of these poisons will flow untreated through this very limited pretreatment process. If approved, the state of Vermont would be giving Casella Coventry Landfill permission in the future to discharge leachate into an already polluted Lake Memphremagog. There is clear evidence of a very serious pollution problem given the evidence of cancerous Brown Bullhead in South Bay and Scott's Cove. There is clear scientific evidence that the cause, or at least part of the cause, of the cancer in the Brown Bullhead in Memphremagog is from toxic contaminants. When UV rays or virus are cited as possible causes of cancer, it is always in combination with the contaminants. Every scenario of the cause of the cancer in Brown Bullhead includes contaminants. As you are aware cancer in fish is a very rare phenomenon in the United States. The conceptual pretreatment facility described in the special condition number 5 on page 7 and 8, should not be part of the discharge permit application. The location of this proposed facility should be a separate permit application. The State needs to determine pollution and water quality standards prior to approving this permit. This important

decision to build a pretreatment facility in Coventry Landfill will determine the environmental fate of Lake Memphremagog.

COMMENT 3:

My many concerns about his draft permit boil down to the fact that the state has not provided evidence about any regulations or performance standards specific to this brand-new leachate pretreatment technology. Without these regulations and standards, under what law or rule is ANR preceding? Without a regulatory framework requiring compliance, what are the specific standards? The result is what we see in this draft. Little, if any of the regulations say that the most effective technology be selected and utilized. *Only one of the many examples that the state is giving any consideration to is an expensive design developed since 2019.* Brown and Caldwell described their treatment options as speculated, making assumptions as to effectiveness. I worked in federal and state agencies for 38 years. Their performance standard manuals do not allow for speculation and assumption. They are used to guide planning and evaluate for compliance. Let's face facts. The most effective technology is not the most cost effective. The greatest responsibility for developing basically every step in this experimental pilot project, including monitoring for safety, has been left to the for-profit corporation whose primary interest is their profit margin. Regulations must require the treatment option proven to be the most effective not the cheapest. Regs also must require independent oversight by objective 3rd parties to assess health and safety for the environment and public in every phase of this project. The precautionary principle must apply. Time to be open and transparent, get back to square one, write the regs according to administrative procedures, then rewrite a separate draft permit. It is a moral imperative to impose rigorous conditions on this project. Strict regulation is the only way forward. Thank you.

COMMENT 4 – DAVID LARGY:

Thank you for organizing the public meeting, it's appreciated. I've got a question on the section 58 subsection 6 of the pretreatment permit. It states that the leachate treatment pilot study plan will be treated as an application to amend the permit, therefore, being subject to all public notice, hearing and comments that are applicable to permit amendments. My question is are permit amendments subject to the same terms of consultation as a current draft pretreatment permit? If it's not, I was wondering what were the differences, thank you.

COMMENT 5 – Henry Coe:

My name is Henry Coe, resident of the Northeast Kingdom for 53 years; kids and grandkids born in Newport. Like others tonight, we love the area and want to see its environment conserved and protected. This permit does not meet that test. It should be separated into 2 parts: (1) the discharger; no permit for leachate delivered to the Montpelier WWTF, and (2) the pilot pretreatment project for landfill leachate; the pilot project portion to this permit must be denied or delayed. What is the hurry? Pretreatment of leachate is a good thing and is too important of a societal function to be left in the hands of the solid waste industry alone. Selection of the site, writing of performance end points and standards, selection of unproven speculative technology, self-monitoring and final disposition of PFAs contaminated filters, membranes and carbon adsorbents should not be at abdicated by the state to a private corporation. No way. Its interests are maximizing profits for its stockholders as already has been said. The record demonstrates that public health and protection of environment is secondary. The Coventry Landfill is among the worst possible sites for any statewide mega landfill. It lies adjacent, zero feet, from extensive wetlands (1,800 acres), ironically, owned by the state and management of State is the South Bay Wildlife Management Area. The landfill has cut off all wildlife migration from East and West. It used to be a bountiful, wonderful area for wildlife. It is no longer because of the landfill's intrusion. Nor has the State, to our knowledge, ever conducted a professional evaluation of the appropriateness of landfill siting. They say it is not in the written rules. That's a cop out. If the important criteria of proximity to water and wetlands, slope erosion and fault zone were to apply and be professionally quantified, the average score would surely be failure. It is 29 years overdue to evaluate this site and to find other rated regional landfill sites in Vermont more suitably geologically and in closer proximity to population centers in Vermont, which produce most of the garbage. Get away from the diesel transportation centric model responsible for much of the atmospheric damage and a lead factor in climate

change in Vermont. I've heard that it takes 4,000 gallons of diesel fuel to supply, in part, the operation of the landfill. Think about it.

COMMENT 6 – ROBERT BENOIT:

Resident of Lake Memphremagog and president of Lake Memphremagog Conservation. I speak to you on behalf of Canadians who use the lake as a drinking water reservoir, which is more than 175,000 people from the city of Sherbrooke, Magog, Lennoxville, Bromptonville, Deauville, Omerville, Hatley, and more. Here in Québec, we are concerned about the quality of our drinking water when we learned that PFAs were found at the Sherbrooke and Memphremagog water intake. I have a request and a question. At the August 24th meeting on the future of Lake Memphremagog held in Newport we heard Secretary Moore state that the moratorium on treatment at the Newport wastewater treatment plant will be extended until 2026. We wait to see a written confirmation following the statement from the Secretary Moore. Canadians hope to receive your commitment in a written document which you can send to Memphremagog Conservation in Magog. Now the question. The new equipment you want to build is designated to treat PFAS in leachate, but will it be capable of treating PFAS well enough so that the water will be completely safe for human consumption. Memphremagog is not just a lake, it is our drinking water. Will you agree that any level of PFAs in the water will bioaccumulate sooner or later in our body.

COMMENT 7 – LINDA SARGENT:

Before my comments begin, I'd like to just mention one thing. I really have appreciated how ANR and the state has allowed us to have some of these public comments ahead of time. When the landfill permit for expansion was put out it was in a little tiny piece of small print in the newspaper. Nobody knew about it. It was extremely discouraging, and this is a far better process. And I really like to hear that we are going to also be able to respond to the next comment. It has been interesting reading the work that has been done by your agency since we last met on August 24th. I have prepared some specific comments attached to specific pieces of the permit, which I will be submitting in writing. They addressed the lack of specifics that I have noticed in reading both the permit and the fact sheet. The Agency of Natural Resources is asking NEWSVT to choose 2 on site and 2 offsite locations for the pilot project and recommend one of several technologies that Casella thinks will remove PFAs and other priority pollutants from landfill leachate. We do not know the locations right now, nor the technology, nor the plan for how and where any necessary filters might be disposed, nor the plans for regulation. So how do we specifically comment to the permit? And shouldn't this pilot project for the pretreatment be individually permitted once these specifics have been clarified? Maybe not just amended, but a separate permit. I would like to again pose the question I asked 2 months ago. How sure are you of the effectiveness in removing PFAs in any of the pretreatment methods that were made in the 2019 Brown and Caldwell report? These technologies are in their infancy and many questions remain about their success rate. This permits timeline is way too tight. Especially considering the consequences of not removing all PFAs. And a new question, why is Vermont asking to import leachate from Bethlehem New Hampshire? Would this not be the beginning of accepting leachate from across the Northeast Region? Thereby burdening Vermont waterways further with escaping pollutants and now also the roadways with truck traffic, CO2 emissions, and potential spills, several which have occurred in recent history. Can the wastewater treatment facility in Montpelier even handle this amount of leachate? Thank you for sharing your answers to the questions.

COMMENT 8 – PETER BLAIR:

My name is Peter Blair. I'm a staff attorney with Conservation Law Foundation Zero Waste Project. Thank you for the opportunity to submit oral comments tonight. We will be submitting extensive written comments before the November deadline. First and foremost, CLF recognizes the steps ANR is taking to address PFAs contamination and landfill leachate. This is critical because our current system of leachate management is not protecting public health or the environment. It allows harmful chemicals like PFAs to be discharged into our lakes and rivers without sufficient treatment. This draft permit can be the first step in moving Vermont away from this current system towards a more sustainable one. However, to ensure the permitting process is successful, the agency needs to take a more active role. As currently drafted, the permit gives Casella too

much authority over the goals and boundaries of the pilot project. I think I'm seeing a theme here with most of the public comments. Specifically, the permit would allow Casella, not ANR, to identify specific operation performance, economic water quality residuals, and air quality parameters that will be analyzed throughout the pilot project. We understand the need to be flexible at the beginning of this process, but ANR, not the permittee, should be responsible for setting these goals and boundaries. You need to set regulations and standards and have the permittee come forward with technology that is capable of meeting them. Additionally, the draft permit does not have any specificity about the scope of the pilot project. The permit does not indicate how much leachate will be managed as part of the pilot project, or what the location of the leachate will be. Specifying the quantity is important because it will help the agency determine whether the chosen technology can be scaled to full implementation, which is the entire purpose of the pilot project. It will also help the agency understand the quantity and concentration of the residual contaminated waste that needs to be dealt with. Also, the agency should identify where the leachate is coming from, and we specifically urge you to limit it to the Coventry landfill. This requirement will ensure that the monitoring of the influent and effluent is consistent throughout the duration of the permitting process. It will also make sure that the permittee cannot take leachate from different locations to dilute the concentration of contaminants, which would undermine the monitoring requirements that are now included in the permit. It will also provide a better understanding of the concentration of PFAs in the leachate in Vermont's only active landfill.

COMMENT 9 – CHARLIE PRONTO:

I'm the former mayor and resident in Newport. I was part of the team that sued the state over the renewal for the dump, so we've come a long way. I think my concern has been stated somewhat tonight. We've got a dump, we're producing a whole bunch of leachate, something has to be done with it. It can't just be left to eventually end up in the lake anyway, so I know we have to treat it. The problem is this permit. It says that there will be a pretreatment pilot program developed to treat this, but there are no specifics, and that's what I was asking earlier. Before this is done, there should be specifics and one of the specifics should be that Casella is not in charge of this. Should be the state of Vermont that's in charge. You hire the people. You should be hiring the people. There's a company called BioLargo that's done an immense study on this out in California. There are other companies that are out there. The state of Vermont should be hiring it because after all, you're the one that are supposed to be protecting us. I don't trust Casella to protect us. I'm sorry. I just don't. Hasn't happened in the past. I think that's a big failure within this permit, and that ought to be one of the stipulations, that you are the ones that hire them. You can make Casella pay for it. They are making a billion dollars just on this 10-year expansion so they can afford it. But I think what's really annoying everybody here is that the specifics aren't there. Where are these pilot programs going to be? Where are they going to be located? We don't want one in Coventry. Why are we taking leachate from Bethlehem here? Why are we allowing Casella to be the one that's heading this this program? You are deferring your job to the company that's making a profit. It's kind of like the fox guarding the hen house. It's just wrong and that's what I think everybody here is looking at is what you're doing is just wrong. I mean, leachate has to be treated. We know that. We don't want it here in any respect because, I'm sorry, we already have the dump. You know we don't need it. It's already leaching out. You've got a 700-foot-high mountain out there that is depressing for me every time I drive by it because I grew up here. It's an eyesore. I wish that in your process that you would take control over this and not defer it to Casella because none of us trust them.

COMMENT 10 – GILLES BELANGER:

Thanks for the opportunity my name is Gilles Belanger, Member of Québec National Assembly, and also Parliamentary Secretary to the Prime Minister. It's a great pleasure to join you this evening as a delegate of the conservation institute of Lake Memphremagog, representing municipal, provincial and federal for Memphremagog and Sherbrooke area. We were pleased to hear that the draft permit proposed to revoke the Newport wastewater treatment plant permit. No more leachate treatment in Lake Memphremagog; for us, this is a must. Too bad that this major landfill located near the border with watershed flowing North ever existed. We recognize that in our aims to be a good steward of our environmental resource by being proactive toward contaminants, all new contaminants. Using the pretreatment permit as a tool to collect more information, ask for new environmental conditions and requests to establish a pilot project for the treatment of PFAs. We agree with this essence of the draft permit. The draft permit seems based on the premise that Montpelier is willing to accept leachate from all three Vermont landfills. In the case of a refusal, would that trigger exceptional measures that could allow leachate treatment at a different facility? We also have questions regarding the amount of leachate allowed per day in Montpelier. The draft permit that allows for 60,000 gallons per day. But the fact sheet presents an anticipated increased from 60,200 gallon per day. Where would this additional leachate go? The last major concern is about location of the pilot leachate treatment. The draft permit

referred to the Brown and Caldwell study, which looked at off-site treatment solutions as well as onsite solutions. We will be following the situation closely in the amendment to the permit that will be coming up. We are very sensitive to any possible re-allowance of leachate treatment or disposal in the Memphremagog watershed. We understand that the pretreatment permit is not an appropriate legislative tool to permanently ban leachate treatment in the Memphremagog watershed. But we will work toward the main goal as long as needed. We are thankful to have this opportunity to comment. The draft pretreatment permit in the past have considered our comments to influence the outcome of the project. We will always be in a collaborative mode. Thank you very much.

COMMENT 11 – WOODLAND PAIGE:

For those of you that don't know me, I'm representative Woodland Paige. Newport is my home and my district, and I was born and raised here, left for time and then came back home. So here are some of the questions. Does Vermont receive funds for taking leachate from New Hampshire? And why are we taking leachate from outside? Will there be other sites from outside of Vermont that will be taking leachate in the future? What system designs are you looking at? I know of 3 at least. Has that decision been determined where you're going to be building it? And finally, I will just say that I have some concerns of Coventry landfill that it will be a dumping ground of leachate for the entire New England area. There will be more truck traffic contributing to carbon producing emissions, along with more wear and tear on our roads. So, I'm not supporting this project in the Northeast Kingdom or in Coventry. I prefer it outside of the Northeast Kingdom. And I'd even prefer it to be outside of Vermont, thank you.

COMMENT 12 – TERESA GERADE:

Thank you for the opportunity. I'm glad that the agency of Natural Resources is renewing this discharge pretreatment permit. It is necessary. I am concerned, however, that the draft permit contains a list of priority pollutants in attachment B, which is actually the EPA's list of priority pollutants that was developed over 40 years ago. A lot has happened in 40 years, a lot in addition to PFAs. In 2018, when PFAs was discovered in the drinking water in North Bennington, Vermont did not rely on the EPA 's standards, they developed their own, more stringent standards. This is a precedent they should use again. In February of this year, a peer reviewed paper written by the University of Missouri experts and the USDA Forest Service prioritized landfill leachate pollutants based on toxicity. In their conclusion they produced a list of 40 most toxic compounds found in landfill leachate. 15 of those 40 compounds are not on the EPA priority pollutant list. They should be in this draft discharge permit. In 2015 research from the US Geological Survey disclosed that landfill leachate is host to numerous contaminants of emerging concern. Leachate samples were collected from 22 municipal solid waste landfills in 12 states, including Maine and Vermont. The leachate was analyzed for 190 chemicals of emerging concern, including pharmaceuticals. 101 of the 190 compounds were found in the leachate. Many of these are not on the EPA's list of priority pollutants. The monitoring of pollutants in this discharge pretreatment permit must include all of the toxic compounds that have been discovered, not just the ones on the EPA's list. And getting this body of knowledge is what you need if you're going to define and specify and regulate any kind of leachate treatment. So, you need this body of knowledge. I'm asking ANR to determine what is currently in the landfill leachate that is harmful and to monitor for that so it can be used in the specification of a leachate treatment facility. Perform the necessary research and provide comprehensive requirements and specifications based on current data and technology. The technology that they are directing Casella to select is from a study that's 2 years old. A lot has happened since then. Asking an organization that generates the leachate to determine the rules governing its discharge is an obvious conflict of interest. We need to create a separate permit for a leachate pretreatment facility with public hearings and full transparency. Both the pilot project and the final facility must be located outside of any watershed of an international lake that is the source of drinking water for our neighbors to the North. Thank you very much.

COMMENT 13 – PAM LADDS:

At the time when it's pretty obvious that there is climate change, that does not factor into the permit as we see it. I'm out on Lake Memphremagog many days over the summer. Our Lake this year was a mess. It is polluted. It is obviously pollution. The blue green algae, the water level is lower than we've ever had it

before and we can expect, unfortunately, that and other sad things to continue. If we are going to have to deal with, and we are because we're stuck with the dump. We didn't ask for it, but we've got it. We have to look at leachate in a whole different way. We are making the assumption that the only way to do this is the way it's always been done, which is that it gets released into a body of water. I think that's a lack of creative thinking. There has to be another choice. This isn't just a Newport problem or a Vermont problem. This is a worldwide problem. Landfills are old technology, burying crap in the ground is not the way to go in the future. I agree that we are stuck with the leachate and we have to do something with it, but releasing it into a waterway, particularly a waterway where people drink from it, is insane. As climate change continues, and it is continuing, water is going to be our scarcest resource. What the hell are we doing polluting it? We have lost our minds. You ANR are tasked with protecting, sustaining and enhancing what we've got. Please don't screw it up. Thank you.

COMMENT 14 – CHRIS JACOBS:

I'm starting off by telling Secretary Moore, her agency mission, by your own words, is to sustain, maintain and enhance Vermont's natural resources. That is protect, sustain and enhance Vermont's natural resources for the benefit of this and future generations. How can ANR hand off the responsibility, and not the liability, for this challenging task to a public corporation that is not tasked with being in charge of our state. I want to add that there's just no way that I could see any way a Vermont should even considering taking leachate from Bethlehem New Hampshire. This is Vermont. It is a moral imperative to do the right thing, respect our international neighbors right to drink clean water. Stop overloading Vermont's outhouse on our neighbor's boundary. keep any and all pretreatment and treatment of toxic leachate out of the Memphremagog watershed forever. Thank you.

COMMENT 15:

I guess I'm wondering, is this is a foregone conclusion? I kind of get that that vibe sometimes. And I understand you're in a tough spot. The state's gotten backed into a corner by Casella and what options do they have, and I think if, as a group, we could give you some options, that would help you considerably. But I also have to ask, if the dump hadn't come out with the concerns they had for this, would this have gone ahead in releasing the leachate into the lake? I really question that. I have watched this lake deteriorated for 56 years, that's how long I've had a boat on it. And my concern is, it's going to continue if we allow this to happen. And I got to tell you, a lot of it started when that sewage treatment plant went in. It can be denied. There's a gentleman here tonight that runs it, I love the guy, but it could be denied. But I can tell you, it started when that treatment plant went there and now the dump is expanded and it's only getting worse. I question if it's really worth the gamble. I was involved when Price Chopper was located up here, and I can remember what they made the company that built that go through with retention ponds and what have you. It amazed me at the time what they had to go through to develop that site but yet we're allowing this to happen. So, I'm scratching my head. Why are we allowing it? Where's the common sense? And to one gentleman's comment here earlier about suing the state, I had an old wise Vermonter telling me one time, "Well you can Sue the state Jim, but they'll outlive you." And so, at the end of the day, you can sue but it really doesn't make a lot of sense. But I'm really concerned also with our Canadian friends. Do we really want to alienate them? Because they support us, we support them and the thought of putting anything into this Lake that could possibly affect drinking water, I just can't imagine that we could do that to our good Canadian neighbors. So I see this basically as a you know, Casella being Goliath and us being David, and if history repeats itself, David will kick the hell out of Goliath and I'm sure I'm hoping that happens. Thank you.

COMMENT 16 – POLLY JONES:

I'm Polly Jones and I'm from both Derby and Manchester, Vermont. First of all, we do appreciate that ANR is trying to reduce the amount of PFAs and other pollutants that are pouring into our Vermont wastewater treatment facilities right now. But we all feel that this particular permit is insufficient for the job. In Section 5A, the draft permit states that Casella will choose a PFAs mitigating technology from the 4 choices of the Brown and Caldwell report. None of these experimental technologies listed are completely effective, and they will all have some form of residuals. Those residuals will have to be encapsulated or incinerated.

Liners and encapsulation will degrade and will not last forever, but PFAs will. What is the plan? There is no mention in the permit of where the residuals will be stored. Based on that omission, we'd have to assume that they will be stored in the Coventry Landfill in the Memphremagog watershed that we are so desperate to save. Why haven't ANR and Casella or NEWSVT explored treatment and dispersal that are not in this fragile watershed or in another international body of water How does ANR, whose responsibility it is to preserve, enhance, restore and conserve Vermont's natural resources, give Casella the freedom to choose which method will best remove pollutants from leachate and protect us and the environment? ANR should be making the decisions, not Casella. The tail is wagging the dog. According to the first paragraph of Section 5, the Secretary will establish regulations on the permissible levels of PFAs allowed in the effluent after Casella constructs a system to filter it. Wait, what? We are relying on ANR to set the standard here before the system to remove it is built. The technology must be suited to the standard and not the other way around. 5E states that 3 years after the technology is installed the pilot study will be completed. What size or scale will the pilot study be? How much leachate will it be able to process? How can we be assured that the safety and efficacy will be the guiding factors in the choice of technology, not economy? It bears repeating that no matter the efficiency of the technology chosen, the resulting effluent should not be discharged into the Memphremagog or Champlain watersheds. To do so will be knowingly polluting the already compromised waters and further damaging the economies of the adjacent towns in 2 countries on these two lakes. No natural resources or communities should be sacrificed for the sake of industry and profit. So, I say to everyone, Happy Halloween, and are you scared yet?

COMMENT 17 – SUSANNA BOWMAN:

I would like to repeat my conviction that you cannot give permission to something where the technology does not yet exist. I think everybody here agrees that and I am floored that you would consider doing that. And then I would also like to know who is paying for the development of this technology? Is it the company who says, oh we'll do it, or is it the state of Vermont? Who is paying for this? Is that something you can answer now? Because I would like to know. Then I would just like to tell a little story. Although I am from Vermont originally and lived here for a long time, I went off to seek my fortune and I've lived in several other states to work and currently we also have our old house down in Massachusetts. Massachusetts has closed, as far as I know, all of its landfills. And guess where they're collecting their garbage from our other house in Massachusetts on the Connecticut border. Guess what they're doing with it. They're dumping it up here and they're carting it all the way and I see those trucks running. And you know, people who live here may not see this, but I see it all over New England. The Republic Company, the LeBoeuf Company, or all these various other smaller ones, it's ending up here. So, when they talk about Vermont leachate, they're talking through their hat guys. It's coming from everywhere already and what we need to do is find other solutions for the waste, as I'm sure you all agree. So ANR, I would like to deliver a lecture here. ANR's real job should be finding ways to eliminate waste not importing it and dealing with the results. ANR could be spending our tax money developing Vermont's own recycling center. We could deal with our own. We didn't have to dump it. We didn't have to dump it in the dirt or dump it in the water. All states should keep and recycle their own waste and not send it off to a poorer or less populous state, or country. ANR could be working with the other New England states to design sustainable systems for the benefit of all New England, never mind all the rest of the states. Do you agree? ANR could be working to make manufacturers and suppliers legally responsible for the waste that they generate and profit by, including motor vehicles. We are tired of ANR not fulfilling their job. We're tired of paying ANR to oversee the exploitation of Vermont resources and not protecting them and we're tired of being polite.

COMMENT 18 – BRIAN SMITH:

I want to hit on something that Jimmy Campbell said about the Price Chopper store. I think we went on a tour that day and a duck flew up out of the grass and ANR was on it like flies on a manure pile. So they slowed that project up a little bit, but it happened with our Walmart store as well. I worked in front of the site. I was watching 2 young ladies walking through a drainage ditch one day with hip boots on and I walked out behind my shop, and I said, "What are you doing?" They said we're looking at the stream, we're from ANR. It's not a stream, it's a drainage ditch. Well that drainage ditch became a stream and it cost Jiles Davis from Burlington \$300,000 to build. ANR wanted to see a proper ditch. So anyway, ANR is pretty good about hitting the little guys. I'd like to see this project stopped and I wrote this down, so I want to get it exactly right. I'm not much at speeches but I am opposed to construction of a leachate plant here in our

Northeast Kingdom. I'll do what I can to help DUMP in its efforts to prevent this construction from happening and that's pretty much the extent of what I wanted to say. I think ANR does a pretty good job, but I'd like to see them really scrutinize this leachate plan and, like representative Paige said, put it anywhere else, except up here. We don't need it here we've got a dump.

COMMENT 19 – JAY WALSH:

I live here in Newport. I didn't realize that this permit was not just for the discharge at Montpelier, that it also included this leachate facility, which I think should be a separate issue altogether. So I just want to say that I don't think it's proper to have both of these things put together. Just doesn't make sense. I don't even know how you could do it. The Clean Water Act's primary objective is to restore and maintain the chemical, physical and biological integrity of the nation's waters. Issuing this permit will not do that, it will do just the opposite. Vermont State Attorney General TJ Donovan recently announced that the state of Vermont is suing 3M and DuPont and other manufacturers of PFAs. And in so states that it has caused statewide harm to Vermont drinking water, natural resources, including groundwater and surface waters, and wildlife. He goes on to state PFAs chemicals persists indefinitely in the environment, they're known toxicants and associated with multiple types of cancer. The harmful health effects of PFAs include links to kidney and testicular cancer, ulcerative colitis, adverse effects of fetal development during pregnancy, the liver, and the immune system. In addition, in 2019, Governor Scott Signed Act 21 S.49 an act relating to the regulation of polyfluoroalkyl substances in drinking water and surface waters. Within this act it makes clear that the Secretary may impose conditions on a permanent entity based on the health advisory if the Secretary determines that the operation of the facility discharge of emissions or releases may result in imminent and substantial endangerment to human health and the natural environment. The contamination of our waters with PFAs chemicals do present endangerment to human health and the natural environment, especially in light that they are persistent for decades, and also bioaccumulative. By denying this permit for proposed chemicals containing PFAs into our waterways, you will also protect the health and safety of Vermont citizens from unjustified importation of more out-of-state PFAs containing leachate. Specifically, of state health and safety regulations, the Commerce Clause of this constitution does not apply in this case. It applies to commerce. This is not Commerce. If you deny putting PFAs in now from our state, it means you can't take it from other states as well so that's a key to deny this permit or any PFAs being disposed of. The Supreme Court has long acknowledged that when courts weigh whether public health and safety regulations impose an undue burden on national commerce, it must be borne in mind that the constitution, when conferring upon Congress, the regulation of Commerce never intended to cut the states off from legislating on subjects relating to health, life and safety of its citizens. And that the Supreme Court Dormant Commerce Clause cases recognized health and safety regulations are primarily and historically in matter of local concern. I request that you deny this permit on the grounds of public health and safety for the citizens of Vermont.

COMMENT 20 – ROBERT FORTUNATI:

I'm a Coventry resident and I've been a resident in Coventry since 1983. I live up on a ridge, I could look down; it used to be just a small dump just the regular dump like every other town in the state. Never did I ever think that this would become something of this magnitude. I didn't raise my hand for it, and I think there's a lot of people in the area that feel the same way. What you don't see is the taxpayers of all the state of Vermont, everybody is a stakeholder here, it's not in their backyard so it's not a big deal to them. It really is here. The magnitude of this thing has gotten so big, think of the magnitude of this leachate and how it's going to be treated going forward. What is this leachate going to turn in to? This is in your hands and think about the future.

COMMENT 21 – VALERIE DILLON:

First off, I just want to say I agree with the comments that have been shared this evening and will be submitting some written information, but I have 2 points that I'd like to highlight. When the Vermont Agency of Natural Resources realized the immediate threat of the Bennington contamination of the PFAs and PFOAs, the agency really stepped up, did research, involved experienced experts and worked a plan based on

science and common sense. We need that same savvy again. I also want to point out that the EPA is also struggling with all of this. They're actually going through a process right now to revise the guidelines and standards. Basically, they're studying what the forever chemicals situation is as it relates to landfills, associated discharges, wastewater control practices, and even leachate treatment technologies, so there's a lot still at stake. Thank you.

COMMENT 22 – DALE DONOHUE:

For me, I'm a lifetime Vermonter. I was born in Hardwick, grew up in the Champlain Valley and I moved back to the Northeast Kingdom about 22 years ago and I started fishing Lake Memphremagog approximately 50 years ago. And the way the fishery is now compared to what it was 50 years ago, it doesn't even compare. We're picking up more trolling we're picking up bullpout. Hitting a trolling lure, if anybody understands, that's pretty rare. Catching Northern Pike that we call the Unicorn Pike because in the middle of it now there's a growth. So, I will ask, has there any testing that goes down 12 feet, which is in the mud? I don't think there has. I couldn't find any research online that stated if there is. It is just so frustrating to see that the northeast Kingdom is become the dump location for the world. That's how it feels for me. It's just such a shame. My wife and I own one business in town, we're a major shareholder in another, we own several properties, and we have to start thinking that if they're going to allow more sludge from other states, as well as from here in Vermont, maybe it's time for us to relocate. And I hate the thought of that because I love this state. I really think it is time for us to stand up and say enough is enough. Thank you.

COMMENT 23 – PATRICK HURLEY:

My name is Patrick Hurley. I've worked for the Memphremagog Watershed Association. I'm also consulting hydrologist and water resource scientist. A few concerns that I want to express today, mostly related to the resilience and kinds of security and emergency plans surrounding this permit. I've noticed that the whole arrangement is set up as an acceptance rate allowance in Montpelier, based on BOD. I think that's wholly inappropriate. Biological Oxygen Demand is a municipal and domestic wastewater metric. We're not talking about organics. We're talking about persistent chemicals. So, I'm encouraging ANR to reevaluate the use of that metric as a huge standard in the volumetric acceptance. We are not actually reducing the amount, we're increasing volumetric by allowing them to take the 90th percentile of daily flows, 60,000. That's less than their maximum 65,000, but it's still well above the 23,000 it was at. I also think it's very unclear as to the emergency plans or mitigation plans or responsibilities associated with any potential spills of trucking. We saw it happen in Bethlehem this summer. I should say we're not prepared to deal with that. I think the fact on any given day there's only 4 to 8 days holding time in terms of tank storage up there, what happens when we get another Irene and all of a sudden that thing is leaking like a sieve? I haven't heard a single word about reducing the production of leachate. You guys can hold them with the fire, you can tell them to get a physicist out there get geotechnics out there to reduce that infiltration, reduce the volume, get a hold on it. Don't give them expansion so that we can just produce more liquid. And then finally I just think it's time to be looking at a different location. Hydro-geologically it is probably one of the worst parts in Vermont for that thing to be located. I'm not blaming anybody, at least I don't know if you're responsible, but it shouldn't be there, it shouldn't be expanded upon, we should be treating it. We shouldn't be subjecting other communities to treat our garbage. We should also be preventing other communities from bringing their garbage here, so thank you.

COMMENT 24 – TERESA GERADE:

I was just wondering based on what you've heard here tonight, will you consider tightening up this permit to test for a more current list of pollutants and if so, what is the process when you make an amendment to a draft permit before it's been granted? Thank you.

COMMENT 25 – MARTHA SYLVESTER:

My question is, I'm sitting here and we're all supposed to be having a discussion about what is in this permit and if we want this or not, and you're asking our opinion, but you're handing a blank sheet of paper to us. How do we have an informed discussion when it's left up to Casella, who I've been asking for well

over a year and then flat out told no they're not going to tell us what's in this pretreatment. They're not going to talk about the pilot program. You can go back to Coventry Select Board minutes and check it out if you'd like. I just feel like this is a fougasse in Vermont. Our democracy depends on us being able to have a say in what we are governed by and, again, I just want to say that I'm appalled that ANR is not giving people the information they need to make a sound decision. So, I feel like this is a fougasse.

COMMENT 26 – ROBERT BENOIT:

This was one of the worst summers we ever had with cyanobacteria in the Lake. As president of MCI I was getting pictures everyday coming from all over the lake about really bad cyanobacteria. We got zebra mussels now right to the border in the United States. They will be in United States next summer. Invasive species are now all over the Lake. The boats are bigger in size and in number. The last study we have will be near 5,000 boats on that Lake. The lake is lower than ever before, people will tell you. The world is warming up, water is getting short in drinking wells. The only thing now we need is PFAs in the lake. Mister Laflamme we appreciate Vermont. You come down to Québec, we go down to United State, it's great. Will it be possible to organize a similar meeting that you had in United States in Magog, with the provincial, the MRC, the federal government. They are all on the line, and we would be pleased organized a meeting with Mrs. Moore, yourself and all your experts to explain to Quebecois and Canadians what's the real issue in this discussion we are having. Every time you go through a politician or people like myself, but it will be good if you talk directly to the population of Québec and I'm making a big welcome to you. We will organize it. It will be very polite, very well organized, and then you can explain to Quebecois and Canadians what it's all about. Thank you, Mister Laflamme.

COMMENT 27 – MIKE DESLANDES:

My name is Mike Deslandes and I'm a city resident and I live a mile if not closer to the dump. I feel sad because it's basically it's all about money. Casella makes money. Coventry makes money. The City of Newport made money when we were taking the leachate under the radar for about 10 years and I knew, once we started getting involved, we realized that they didn't do that this is supposed to be so great. So for 10 years they didn't do it. And the reason why they didn't is because they didn't want anyone to know. they took the leachate for 10 years under the radar without knowing. So is this what's going to happen with this thing that you're going to dump in the Black River now? We're going to turn our heads and just say we're going to do testing. It's pretty sad when, like Charlie says, we already got the dump. So now there's a leachate problem and there always has been a leachate problem. So maybe, since it comes from Massachusetts, it's coming from New Hampshire, it's coming from everywhere, maybe it's time they share on the problem because it's not just our problem. And as far as recycling, yeah, it's great. But I know what's going to happen. You can go zero. We can have not any of us send anything to that dump. You're going to tell me they won't send something up from Massachusetts? You're damn well they will. When they have these hazardous waste things. You can't have asbestos up here, but there was an accident that went off the interstate and it dumped a whole bunch of asbestos. They were so worried about asbestos, but do you know where it is going? It was going up here. So when you have your hazardous waste, what do you do? Take it, turn around, come to Winterville, go back up here and dump it? Who knows? I don't trust the State. And I'm staring right at it [the landfill]. It's right in my front yard, it's within a mile. And I think it's sad, it's so sad that we are not looking to our neighbors up North because we depend on them too, and that's their drinking water. It's so sad that's all I've got to say.

COMMENT 28 – CHARLIE PRONTO:

Can you give us information on where the pilot program for the pretreatment is being considered? Can you give us information on whether or not the State is willing to take that process over? Because, as I mentioned before, having Casella do it is just wrong. The state of Vermont should take it over. You still have time to do this with this permit I assume if you change your mind because nothing has been set. Hire the company and charge Casella and get it done properly. But can you give us information tonight? I know you've had discussions with people. We are all a little frustrated that we get to speak but we don't get any information

back. I think you all know we don't want it here, and that's pretty important. We all know we have to treat the leachate. But the state should be doing this. I'm curious why you guys aren't doing it.

COMMENT 29 – PEGGY STEVENS:

I want to tag onto what Charlie was saying earlier and I want to offer an alternative that I think is really sound. It's about looking at taking control of solid waste as a public utility and about involving citizens, just like for electricity and anything else that is considered to be a necessity. Solid waste management is a necessity of life for everyone around the world. Why can't we take it out of the hands of a private for-profit corporation and approach it as a state? We all know here, most of us anyway, that we want an alternative landfill. Why not look at siting this leachate management facility where an alternative landfill can also be developed. That way, we solve all of these problems at once and really take responsibility as a state with the solid waste management problem that it is today and really be proactive about finding solutions.

COMMENT 30:

Asking for transparency of Casella's budget. Want transparency about their investment and if it's enough investment to be a viable solution.

Comments from October 28, 2021 Public Hearing in Montpelier

COMMENT 31 – ED STANEK:

My name is Ed Stanek resident to Barre City. I worked for a number of years for the State of Vermont as an active 50 district coordinator. I use the Winooski River watershed and Lake Champlain. I will provide my comments in writing, I'm aware of the time limits. I have basically 7 categories of comments. Number one: neither the fact sheet nor the permit state a jurisdictional basis for the delegation of responsibility to NEWSVT, rather than the city of Montpelier for pretreatment. I'm aware of the provisions in the US Code of Federal Regulations, but I couldn't see any reference to enabling Vermont legislation and regulatory provisions that allow that transfer of responsibility to NEWSVT. So that was a jurisdictional question not clear from the permit and the fact sheet. Another jurisdictional question, it's unclear to me upon what basis ANR is authorizing the importation of leachate from another state? I'd like to see some clarification of that. I take note that the town of Durham, New Hampshire apparently has disallowed the discharge of the leachate into their treatment plant because of the PFAs content. Second comment has to do with leachate flows. Again, I reviewed the fact sheet, the permit and other documents. I think the documentation is incomplete and confusing at best, at least to the average person. Just 3 examples: (1) the fact sheet pages 3 and 4 do not provide leachate flows for the Coventry landfill or the Bethlehem, New Hampshire landfill; (2) while information is provided for the Coventry landfill on page 2 of the fact sheet, it's less than clear how those calculations match up with the adjudicated findings of the District 7 Environmental Commission in their decision, on page 28, where the Commission found average of 9.5 million gallons of leachate resulting annually from phases one in four; and finally just another example, (3) the draft permit sets a maximum daily effluent of 60,000 gallons, it's unclear to me how that number jives with the 3rd paragraph on flow on page 4 of the fact sheet. Category 3: neither the draft permit nor the permit issued to the city of Montpelier, that I could discern, provides any pretreatment. So, it might be missing something here as a pretreatment permit is being issued that doesn't really require any methodology of pretreatment. When I worked for the state 40 years ago, as a young state employee I remember going to the public facilities division and people at that point were explaining to me that "dilution is the solution". In reviewing the permit, particularly provisions having to do with 7Q10 instream concentration, kind of brought back memory that principle of dilution being the solution. The point of course, on a serious note, is I don't see any actual pretreatment required by the pretreatment permit. Category 4: it's very troubling to me that the draft permit is laced with quote unquote conditions, subsequent conditions, subsequence, or impermissible. Our regulatory system is supposed to ensure sufficient evidentiary proof that standards are met and not allow substitutes of conditions for adequate proof upfront. A perfect example in this permit is special condition number 5, pages 7 through 12 in the permit. This is the one that requires the pilot project, so called, at the Coventry site. My reading of it is that it's premised completely on the standards established by the Brown and Caldwell study from October 2019.

ANR has not promulgated any applicable surface water standards for PFAs that I'm aware of. Given the 9-year long pendency of the pretreatment permit application, as stated on page one of the fact sheet, ANR could and should have undertaken appropriate rulemaking during that same time period in order to promulgate PFAs standards for the applicant to implement, as part of the amendment application required in special condition number 5. Instead of appropriate and required rulemaking, ANR has chosen the path of an impermissible permit subsequent. The net result of this approach by ANR is the privatization of environmental regulation. Number 5: the draft permit has numerous conditions for testing and sampling of the waste stream. However, the fact sheet has no specific information on the strength of all PFAs collected at each landfill for delivery to the wastewater plant. Although there is vague reference to the January 2020 Weston and Sampson sampling results, it would seem the fact sheet should provide such threshold facts. Number 6: page 2 in the permit, section I.A.1(b) disallows the discharge of leachate into the Montpelier treatment plant during "storm events, snowmelt or when a storm event is imminent." What are the definitions for each of those terms? Who makes the decision to not accept the truckload of leachate? If so, where will the leachate then go? Additionally, with regard to the city's role in accepting the leachate, what are NEWSVT's contract terms with the city, and what is the amount of annual revenue that the city will obtain from accepting the leachate? And finally, number 7: two of the most significant sources of solid waste to the Coventry Landfill facility are Chittenden and Washington counties. One supposes, in a cynical analysis, that there is an environmentally just outcome in that the "non-conventional pollutants" from all those solid wastes will now return to the watershed from one from whence the solid waste came. The Northeast Kingdom and Québec have been the environmental sacrifice zone for Vermont solid waste disposal. Chittenden and Washington counties will now join as a companion sacrifice zone. I encourage ANR to take the lead and returning the focus of the General Assembly to policies adopted over 25 years ago by the General Assembly, aimed to ensure, not only at the reduction in the waste stream, but a more equitable means of disposal. The burden cannot remain solely on the people in the Northeast Kingdom and Québec. In closing, I want to emphasize that I am a realist. The solid waste generated by all of us has to go somewhere. Same thing with the leachate. But ANR's permitting processes and its role as a representative to the executive branch before the legislative branch over the decades, have failed to pursue, if not force, a more and just system for the disposal of solid waste and leachate. And I want to be very clear, I do not fault the public employees of an ANR, specifically those of the Department of Environmental Conservation, who merely do their jobs under the direction of supervisors and the executive branch appointees. Thank you.

COMMENT 32 – SHAINA KASPER:

My name is Shaina Kasper. I'm a Montpelier resident and I'm also the water program director with Community Action Works. And at Community Action Works, we believe that environmental threats are big but that the power of well-organized community groups is bigger, and that's why we work side by side with the community spiting pollution threats in their neighborhoods. Over the last 5 years I've co-facilitated the national PFAs contamination coalition, which is a network of 40 community groups from 18 States and Guam fighting PFAs contamination in their communities. I work with folks who have had cancers and kidney disorders and their kids have gotten sick and they've had trouble conceiving kids. I am really terrified of PFAs and I'm really grateful to not be a member of this group, but rather to be facilitating it. I really don't want PFAs to be impacting my community. As I said, I'm a Montpelier resident, I care deeply about my community, and I do not want to take in this leachate. At the Montpelier City Council meeting last night, the city committed to developing a plan to eliminate the intake of PFAs into our wastewater treatment facility and to call for better oversight and monitoring by the state. Just like how Barre and Burlington and Essex, and I just learned from Ed right now in Durham, are not taking in this leachate anymore as well. Knowing what we know about PFAs and our wastewater treatment facility and how it cannot deal with these chemicals, proposing this permit is, I feel, pretty frankly, is embarrassing. Our current system does nothing to remove PFAs from landfill leachate. We know that there's significant environmental and public health concerns with PFAs. Going through the Montpelier wastewater treatment facility will just make us a point source that will then go on to contaminate the drinking water that's pulled from Lake Champlain. Additionally, the draft permit gives Casella too much authority over the development of the pilot project as it

requires Casella, not ANR, to set parameters of performance and operation and evaluation of this pilot project. The draft permit also does not identify the source or volume of leachate managed as part of the pilot project and, as I said as well, who's in charge here? It's like my parents, giving me a few bucks in middle school and telling me to get a sandwich for lunch, but knowing that I could just get chips and candy instead. ANR is expecting to develop and adopt surface water quality standards for PFAs soon as well. Given that this will have a direct impact on the draft permit, I also want to say that we should reopen this permit once those standards have been adopted. We need to do more to achieve our zero waste goals and to divert recyclables and compostables from our landfills and to ban PFAs from all products immediately. But those are bigger picture things and not an excuse to not deny this permit. I'm really calling on ANR to really take into consideration the significant health impacts that this permit can have on our community and communities downstream, and to deny this permit. I'll also be submitting written comments. Thank you.

COMMENT 33 – KC WHITELEY:

Good evening, my name is KC Whiteley. I live here in Montpelier. I've been here for about 25 or more years and before that I lived in Charleston, Vermont in the Northeast Kingdom. I just have a list that's probably going to be similar to some of the things you're already hearing but say them anyway. Some of the issues that I have with the draft permit is that first of all, ANR has not developed any water quality standards for PFAs, hasn't developed any regulations or performance standards specific to leachate pretreatment technology that would govern this pilot project. Leachate pretreatment technology, as we know, is in its very early stages and we do not have data to verify what the effect of our state technologies are yet. There aren't any regulations from ANR to govern and oversee this process. I have a real problem with that. The permit gives over just way too much state authority to Casella to select the technology, select the pilot project site, monitor the safety, safeguard the public health and environment. The state needs to take responsibility for all those things, not the company that stands to profit from managing the leachate. I was looking at your mission statement to preserve, enhance, restore and conserve Vermont's natural resources and protect human health. I believe that the state should be. This is not Casella's mission, that is ANR's mission, and so you guys should be in charge of this process, not Casella. The permit contains a list of pollutants that are way outdated. As someone mentioned in the hearing up in Newport the other night, 101 of the 190 chemical compounds found in the leachate are not even in this permit. ANR needs to do the research and establish your own standards, just as you did when the PFAs were found in the Bennington drinking water. Asking the company that's generating the leachate to determine the standards and rules is just wrong. I also believe the permit time is just unrealistic and not achievable. One year to research and select the technology, none of which is proven yet, select the site, building it, developing the systems for monitoring and testing; this sounds very unrealistic, if not impossible, to me. I don't think it's a good idea to rush all these components. So those are just a few of the points that can and should be made to shine the light on some of the shortcomings of the draft permit. Thank you for your time.

COMMENT 34 – LINDY SARGENT:

I submitted comments on Monday night. I will submit more specific comments. My comments on Monday night were on this lack of specifics, which has already been addressed. But after attending and being part of that meeting, I really felt that there was a lot of emotional involvement in this for all of Vermont. So, what I have to say is I am a member of DUMP, Lindy Sargent of Barton. Since ANR approved Casella's permit to expand the Coventry landfill, we at DUMP have been watch dogs. To protect the health of the drinking water of our Canadian neighbors, we fought for the moratorium on any leachate going into Lake Memphremagog. After this, we specifically got in touch with Montpelier and Lake Champlain environmental groups to share concerns with them about now being the recipients of the landfill pollutants, including PFAs. Knowing that we in the Kingdom had already been the dumping ground for the state, we realize what an awful burden this leachate is, and would be. This is what the moral high road looks like, Vermonters working together to solve problems. We studied the Brown and Caldwell and the CDC reports about leachate treatment technologies, and they include percentages for the effectiveness of treating leachate that admittedly are termed assumptions. This is emerging science. Just last month, the EPA advised that it would be studying ways to target landfill leachate because of PFAs. Why is ANR rushing this process in this permit,

which is really a 5-year renewal on a 2011 permit? It is critical work, but it needs to be done in conjunction with other states, with others in Vermont and not with Casella. This permit is empty of specifics and contains virtually no regulations about building a pilot treatment project and facility. If listeners had logged in to Tuesday's meeting, you would have had your heart touched by the passion with which residents spoke of the landfills effects already felt in the Lake Memphremagog watershed and a lack of trust in NEWSVT managing such a project. This is ANR's responsibility. Your mission pledges to protect, sustain and enhance Vermont's natural resources for the benefit of this and future generations. It's time for you to take the moral high road and listen to these comments, rework this pretreatment permit, draft a separate one for a pilot project, and do what in your hearts is right for all of Vermont. Thank you.

COMMENT 35 – PAM LADDS:

We have a dilemma here and the dilemma is that water is our scarcest resource. We know that, but meanwhile, we're running leachate, which we know to be a toxic mess, whether it's filled with PFAs or a multitude of other chemicals, including the chemicals from pharmaceutical products that we pass in bodily waste, and it goes into the landfill and around and around. That's going into our water streams. In Montpelier, who currently is taking most of the leachate, it's going through the wastewater treatment facility, which is not able to process any of the PFAs and probably many of the other chemicals that are in there. Why are we stuck on reinventing the wheel for how to discharge leachate into a waterway? That makes absolutely no sense. I don't have the answer for this but if we always do what we've always done, we will always get what we've always got, that is a John Grinder quote. It's a very annoying quote in a lot of ways because it's really saying if you don't like the outcome, do something differently. I don't like the outcome. The outcome is poisoning all of us. It is not safe. We need to do something different.

COMMENT 36 – TERESA GERADE:

I agree with many of the points that have been made here, specifically the lack of regulation and the need for ANR to take a much bigger role in this and not leave it to a for-profit corporation. Specifically, what I want to target is the fact that the information that's being utilized in this draft permit is old information. First of all, they're talking about having the permittee select a technology from a study that was done over 2 years ago. A lot has changed since then. Also, the draft permit contains a list of priority pollutants in attachment B, which is identical to the EPA's list that was developed over 40 years ago. Many toxic contaminants discovered since then, in addition to PFAs, are in the leachate and there is no requirement to monitor for those other contaminants. In 2018, Vermont did not just trust the EPA's regulation when it came to testing the water in North Bennington for PFAs. They developed their own limits. They need to do that now. The EPA's list is over 40 years old. In February of this year, a peer review paper written by experts from the University of Missouri and the USDA Forest Service prioritized landfill pollutants on toxicity. In their conclusion, they produced a list of the 40 most toxic compounds found in landfill leachate. 15 of those 40 compounds prioritized in this paper are not on the EPA's priority pollution list. Another study done by the US Geological Survey found similar results. They analyzed leachate samples from 22 municipal solid waste landfills in 12 states, including Maine and Vermont. They looked at 190 compounds. 101 compounds of those were found in the leachate and many of those are not on the EPA's priority list. The Agency of Natural Resource's primary responsibility is to protect the natural resources of Vermont. It is not the responsibility of a for-profit waste management corporation to create rules that might be in their own self-interest. I am requesting that ANR do the following: determine what contaminants are in the leachate and monitor for them as part of this draft permit. Many harmful contaminants have been identified since the EPA's list was developed. This monitoring will provide a baseline of knowledge needed when specifying a system to remove harmful contaminants from the landfill leachate. How can you ensure that you're removing contaminants if you're not even sure what is in the leachate? Provide the necessary research and provide comprehensive requirements and specifications based on the current data and technologies with full transparency to the public. When determining what can be discharged into Vermont waterways, use the precautionary principle. Can you prove that it is safe? Create a separate permit for the leachate pretreatment facility with public hearings and full transparency. Both the pilot project and the final facility must be located outside of any watershed of an international lake that is the source of drinking water for our neighbors to the North. Thank you.

COMMENT 37 – MARGARET LESSARD:

Hello, my name is Margaret Lessard, my husband Richard is here with me. My comments are very selfish based. Everyone has had some very profound things to say about Vermont needs in general. I'm going to speak about our needs. That's our property next door. We've lived there for 44 years. I have a neighbor here as well who owns across the road. Our entire community down here is very much impacted by the Montpelier wastewater treatment plant. There are two reasons that I submitted written comments. One of which you may dismiss me as being not a water issue, it's an air pollution issue. Unless you all don't have noses, you are aware of the odors that permeate this neighborhood because of the wastewater treatment plant. It has gotten worse since the leachate was accepted. It is even today, on a cool somewhat autumnal day, it was oppressive down here. There does not seem to be any use of odor capture or filtration going on at the plant. Which makes us wonder, is the plant capable of accepting all of this additional leachate in addition to what it already takes from septic haulers and its own municipal needs? I have addressed this in a letter to your board. The other issue that, again I'm a lay person, I don't have all the profound knowledge about the PFAs and all the rest of it, in reading the permit draft, it talks about an awful lot of poisonous chemicals and how they're going to be monitored for in the stream. I have a deep well, my neighbor has a deep well. What kind of monitoring is going to be done or can be included for groundwater tables? How much of these pollutants are sinking through the stream and into the groundwater that we are drinking? That's very scary when I read all of these chemicals and these learned people here today and tonight talking about very harmful chemicals that are going in on a regular basis. So, I would like to know that my groundwater table is protected. And I would really like to know that the Montpelier wastewater treatment plant is capable of receiving all of this leachate along with its ongoing septic acceptance and its municipal flows, and it has the capacity to work in a in an environmentally correct manner. So those are our concerns. Like I said, we're more selfish with our comments than the rest, but that's the reason we're here tonight. Thank you.

COMMENT 38 – POLLY JONES:

I want to second what your previous speaker just said that not only should we be testing the leachate, but we need to of course test the groundwater. Not only in Montpelier, but in the Memphremagog watershed as well because all of the leachate that is not gathered in the Coventry Landfill is flowing into the Memphremagog watershed, which includes a lot of wells around the perimeter. I do want to specifically say I spoke on Tuesday night. I will be submitting more complete questions and comments. But just tonight in reference to the central Vermont landfill, I have some questions on page 2 of the draft permit section 1A, ANR has increased the effluent limitations for the Montpelier wastewater treatment facility from 23,000 gallons a day to 60,000 gallons a day. If the Coventry Landfill alone produces 60,000 gallons a day, where will the excess leachate from Bethlehem and central Vermont landfills go? And when the Coventry Landfill is expanded in its next ANR approved phase, it will produce 100,000 gallons per day. What then? It seems to me that if ANR is legally challenging PFAs producing industries and attempting to limit the sale of PFAs containing products in the state of Vermont, shouldn't Vermont then have the right to ban out-of-state solid waste and leachate because we know they are loaded with PFAs? And also, I just want to restate that, when will ANR or DEC take control of our state solid waste crisis and stop depending on the profit-making garbage industry from taking control? Again, I say the tail is wagging the dog. Thank you.

COMMENT 39 – HENRY COE:

I just want to say, this permit or renewal of the acceptance of discharge leachate in Montpelier should not be conflated with a separate issue, which is pretreatment by a pilot project in Coventry at the site of the NEWSVT landfill. Landfill to me is a euphemism. It's a trash mountain 700 feet high, 78 acres in extent, now soon to be 129 acres. It's not a landfill. I came to this strong feeling inside me, probably 50 years ago, when Charlie Natu had his little 12-acre dump. I took my trash from Glover, where I lived then, every Saturday. One time I poured kerosene and paint in my garbage. I knew I had it. We didn't have plastic sacks then; it was in the back of the pickup truck. And I saw Charlie group all the Saturday morning waste from everybody who brought it in, for a couple \$3.00, pushed it all downhill and disappear. I saw the reeds bend, I don't know that it all disappeared. That image is in my heart. I'll tell you, when I learned about the expansion permit 3

years ago, I attended the Coventry hearing. You talked about how you will not respond to our questions tonight. You will respond to them on the day you make your decision. That doesn't help us. You should change that process. Make an effort to respond to every individual question and testimony that you hear tonight and in Newport. There were only 7 or 8 of us in the room. There were more Casella executives, lawyers and ANR staff at the head tables than I think audience. I won't swear to that but that's my memory. One lady quietly raised her hand. She lived in Coventry on a ridge. She was of French-Canadian descent. She stated her name and she said, "I'm old fashioned. I've always hung my clothes and my kid's clothes out on the line to dry. I don't have a clothes dryer." She said, "on the ridge where I live, I get continual smells and odors." She said, "the other day, when I hung my grandchildren's under clothes out on the line, I smelled this awful smell and I asked myself, what is in that smell in my nose that could be poison when I put the garments on my grandchildren skin?" And she sat down. No one made an effort on those panels to answer that question. No one ever. It was not in the response summary. I think of that lady. I know her name. I've not talked to her since. But you ignored her plea. This is happening. I wanted to tell the Montpelier audience what happened in Newport the other night. There were 19 documented voices online and in the audience who spoke in opposition to the idea of a pilot project on the landfill site run by the profit-making corporation. I didn't hear one comment in favor. I haven't heard a comment this evening in favor of either part. Break this proposal out in 2 parts at least. We're pleading with you, deny the pilot project. You've heard better than I. There are so many unanswered things. It's too important a question to leave it to private industry. That's your job to protect and conserve our environment. That's the public's job. I grew up honoring public service. I was this close to choosing a career with the foreign service. I love this country. My dad was lost in World War 2 because he loved this country. This is a political decision. You guys know it up here. What we say tonight is not going to matter. The governor's race car was sponsored for many years with Casella blasted on it. He came to Newport and said there's no other option but the Coventry Landfill for our solid waste. He ignored the legislative mandate, which had been referred to 25 years ago to put it in regional centers closer to populations that produces the waste. To me, it's environmentally indefensible because the landfill should never have been placed up there. It's surrounded by 1,800 acres of wetlands. It's upslope and a half mile away from South Bay. The water goes to Canada. They use it and have for years and will continue to as they're drinking water source. That's morally indefensible. This landfill site cannot take the burden. I call it a Vermont outhouse on the border of a Canadian drinking water supply. Is it not? There are more poisons in that landfill than there are in my camps outhouse. Think of the moral responsibility that you're taking when you make this decision. This landfill should be closed. Other sites should be at least evaluated. There's been no formal evaluation when Casella bought this 12-acre site. It was actually bought by a second owner after that, but they've owned it 28 years. I haven't read a formal evaluation of the siting. It would never be allowed by EPA standards today.

COMMENT 40 – MARGUERITE ADELMAN:

I'm Marguerite Adelman. I'm in Winooski, Vermont. I also serve on a group called the Vermont PFAs military poisons coalition. I'm concerned for all the reasons that have been expressed already. Shaina said so perfectly, I am frightened half to death of PFAs and I'm frightened for the next generation. I truly believe that it is our role and the role of our public servants and our government departments to protect future generations and polluting the water with leachate and PFAs and all of these dangerous chemicals does not protect future generations. There is such an outcry now about climate, but I also think that we need to be looking at the environmental poisons that are ruining so much of our future and our children's future. We also heard the term precautionary principle. I truly believe in that. I think we know now from everything we've seen about PFAs and what's being revealed about it that we've to go beyond monitoring. We have to ban it. And not just 5 forms of PFAs, but all 6,000 plus man-made forms. It's a whole class of chemicals and the chemical industry is just using bait and switch continuously; take one out and put another one in so that the public is so confused and complicated by this topic that all of these products now end up in our landfills. I'm very pleased that DUMP and the groups up in the Northeast Kingdom have fought so hard. But those of us who live, for example, downriver from Montpelier, we're going to get all this stuff. It comes down to us. The

PFAs and all of the pollutants come down to us. I live in a community where we have many new Americans, especially Asians, who are in to fishing and they live off their fish. They eat everything they catch. In fact, our work with the Association of Africans Living in Vermont and other groups has revealed that to us and I think it's just ridiculous that we should be putting this into our water and taking it from New Hampshire to put into our water is just beyond the pale. I strongly agree with what others have said, that we need to deny the permit and separate the permits out so that we might be looking at 2 different ones. We need in this state to start putting money into the research that will help us get this stuff out of leachate. Monitoring doesn't tell us anything except how much stuff is in there. The part that's missing from the pretreatment plan is the component that we need to be investing in for research. Thanks.

COMMENT 41 – DON PEARCE:

I just want to let you know that I do own property diagonally from this office. It's, as Margaret always called it, that and another property I have, the most unique in the city because we're down here in the no man's land. I also own the house which is directly across the street from the treatment facility. The house is on the Dog River and on the Winooski River and my shop is on the Dog River. So, I'm concerned obviously about what goes in the river. We've had the city dumping into the river upstream from us and we've had all kinds of activity going on when there's floods and whatnot. Similar to Margaret, I do not have a well. We call it the Little White House across from the treatment facility is in Montpelier and so I have Montpelier city drinking water and the shop on this side of the bridge, as we are here, is in the town of Berlin and I have no water there. Basically why I own the house, so that I have a water system. The shop is now an electrical contractor's staging facility basically. And the office that goes along with that shop was in the Little White House and now it's off site. But I'm concerned about obviously what goes in that water and what goes in the river and the groundwater pollution also. And as a secondary note, as Margaret said, is the air quality and the air pollution that we've been experienced for about a year. I've been here since '91 in this facility, yet we were in Middlesex and never really, although we don't spend all day here, we haven't really experienced any air pollution odor much like we have this year. So that's a of primary concern also. Thank you very much.

COMMENT 42 – EFFIE BROWN:

I was at the Tuesday meeting. I live here in Derby and I have grown up adjacent to this lake. I can see it from my front windows. I have owned other properties and they've always been either within view or on this lake. I grew up as a child being able to swim; walk down across the field and I grew up here on a farm, walk across the field and swim in this lake. My family was friends with Alice Lindsey, who owned Lindsey Beach, and they allowed us to swim even though it was a public beach. There was a charge to get in, but we were able to go and swim no charge because we are friends and neighbors. Being a neighbor at that time was really important, and we treated our neighbors with great respect. We helped our neighbors as much as we could, and they helped us. I understand that there is a need for a renewal of this permit. I believe that it was issued in 2012 for the pretreatment discharge of the leachate. And I would foresee that in the interim between, a better idea of how to deal with leachate. I would foresee that this permit probably needs to be in place to some degree. However, the pilot project is no way a part of a pretreatment discharge permit. I don't know how it was slid into the renewal of this discharge permit. And the pretreatment part of that permit really is not pretreatment at all, as the lady from right in your area of Montpelier said, things are a little smelly down there and I certainly can relate to that. I believe that there should be no leachate in the Vermont watershed of any lake. I understand there are over 9,000 PFAs chemicals and they are chemicals also of emerging concern. So to ever allow any of these chemicals to be put into this drinking water reservoir or Lake Champlain, same thing. I remember when I came there were camps, there are a lot more camps now than actual homes on this lake, that drew their water from the lake and I would assume there's probably still are some summer camps that get their water from this lake, as probably there are in Champlain. I don't know. But it seems to me that there should be a rule, no leachate in a drinking water source. Clean water is one of our essentials and we can't live without it and stay healthy. I guess in closing I would say, what does the state of Vermont think of our neighbors to the North? That is a question I would like the answer to. Thank you for allowing me to share.

COMMENT 43 – DON MCDOWELL:

My wife and I have spent our entire adult lives in Vermont. In fact, my wife was born in Vermont. We are one of those camp owners that still draw water out of Lake Memphremagog. And in fact, I've been going to camps and cottages basically all my life and we've never done anything but drawn water out of a lake. And what a sad situation it would be if we created a beautiful body of water like Lake Memphremagog and we could no longer do that. I have neighbors next to me who think we're crazy for pulling water out of the lake. We use the water for bathing. We used the water for washing. We use the water for recreating. My grandkids go to the lake and jump in the water. I'm going to tell you, I'm really concerned about what's going on. Very concerned about that body of water and what's going into it. It's a pretty crazy situation that we've got going right now. 2019, I believe, Casella was granted an expansion permit for the landfill in Coventry, which I just can't wrap my head around at all. It makes no sense to me at all. Except, if you had some really awful disgusting stuff that you wanted to get rid of, where would you take it? Where would you take it? You'd probably take it just about as far away as you possibly could from where you were, and that's what we've done. We've moved it to an area of Vermont where there's not very many people. There's not a lot of political power and we've put it on international border, too, which is just crazy. When I was at the August 24th meeting when DEC and ANR talked about water quality, I said, wouldn't it be interesting if it was the other way around. Wouldn't it be interesting if the Canadians built a huge dump on the border and the water flows south and we own most of the lake? We would have a very, very different conversation now. And given that, I'm really concerned about the existence of this dump going into the future. I'm extremely concerned about this pretreatment permit. Where is it going to be? Where is it going to end up? We don't know. Where's the concentrate going to go – the stuff that will be removed, where's it going to end up? What happens when we go over the 60,000-gallon limit? I haven't heard anything on that yet. What about all the chemicals that aren't going to be treated? Yeah, we've talked about the things that will be treated, but we haven't talked about the ones that won't be treated. My guess is probably because we don't know how to treat them, but they're there and some of them are probably even more toxic than the ones that we're worried about. The 5-year moratorium is great, yes, it's wonderful that there's no leachate going into Memphremagog for 5 years. But that's not enough. Henry talked about this, I believe was Henry. You know, we need to get rid of this dump in Coventry. 2 months ago, I asked Secretary Moore, Mister Laflamme, and your 3 colleagues to begin the discussion of finding another place to put Vermont's garbage. It makes no sense to take all this stuff, all this garbage from Vermont, and send it to the edge of the state on an international border and throw it in the ground and pretend like that's okay. That brings up the course of precautionary principle, and other people have talked about it tonight. Precautionary principle, it's just common sense. Do we really think we're going to put all that material in there, and we've been doing it for a couple of decades and we're going to do it for a couple more decades, and we're not going to have a problem? I'm very glad tonight to say that Don McDowell is on the side of questioning this and saying this doesn't make sense. I think historians will go back and say who thought this did really made sense because there's going to be problems down the road. It is crazy to continue to dump garbage on the side of that beautiful lake, on the side of any lake for that matter. It is crazy to send all this solid waste to Coventry. Just imagine all the trucks that are headed north. They're headed up to Newport and what we're going to do is we're going to take all the leachate and send it all back down here, going to send it back down to Montpelier to be treated. Does that really make sense? Of course there's going to be problems, precautionary principle tells us this. This stuff is not going to go away. Look, I'm guilty of NIMBY – I don't want it my backyard, but you know what, it's been in our backyard long enough. It's time to put it in somebody else 's backyard. I know people don't want to hear that, and I apologize to the people of Montpelier, people along the Winooski River, but it's got to go somewhere else. Enough is enough. I'm an ecologist. I was trained as an ecologist. I'm a limnologist I've been teaching about limnology and ecology my entire professional career. I've been waiting for the science to come out. I've been waiting for someone to talk about the science in this. I'm not hearing it. Let's call a spade a spade. This is about politics because it doesn't make any sense otherwise. August 24th, Casella didn't talk. 2 nights ago, I wasn't there, it was my birthday, it was my wife's birthday too, we both have the same birthday, but Casella talked that night either, they haven't talked yet tonight. Why isn't the permittee talking? Why aren't they explaining why this is such a great idea? Why aren't they telling us why we have nothing to worry about? That's what I'd like to hear. Thank you.

COMMENT 44 – CATHY SQUIRES:

I live in Montpelier now. I've been out of state most of my life, but I also grew up in this area. This is a new issue for me and so I don't know all the details. I'm not articulate about all the chemicals and so forth, but what I'm concerned about, what I've read is that there's no treatment available to be able to separate out the chemicals such as PFAs from our waste treatment. My understanding is PFAs are already in our water systems and in our sewage and we have no way of separating them and my question is, how are we going to separate that and then what are we going to do with it? Because my understanding again is these chemicals, and not just PFAs, these chemicals have a very long life and so that is my concern. Thank you.

COMMENT 45 – S. CHRISTOPHER JACOBS:

I do want to ask one thing. Do you all know how many people work today in ANR? My thought is that I would like you all to be required to listen to everything you've heard tonight. Instead, 3 people have listened to it. And yeah, its recorded and you're going to go back, and you are going to sit there and look through it or listen to it, and say, "oh, isn't he a jerk. Oh, just see what color shirt he's got on?" People have spoke with a lot of passion and a lot of knowledge and it ain't going to get there and it just really bothers me. That's all I have to say.

COMMENT 46 – JAY WALSH:

My name is Jay Walsh, a resident of Newport. I've worked with the DUMP group in the past and I support them. I'm going to say first off that I'm extremely disappointed in this meeting tonight and the attendance of this meeting tonight. We had probably 3 times more people in Newport. I think that's a failure on the part of ANR and the municipality here in Montpelier to get this information out to the public. There should be 100 people in this room. This is so extreme an issue that there should be more participation by the public and ANR with a face to face back and forth question-and-answer period. This is ludicrous the way that you guys handled these meetings. I'm going to give you a quick story that is a little more uplifting. When I grew up in Fitchburg, Massachusetts. We had a river, the National River, that ran through that town. That River was a different color every single day from the paper mills and textile mills. Not just a little different color. Red like this, like this blue, green, orange, every single day and it stunk as well. One woman Marion Stoddart in the 1960's took up the challenge to face against these corporations and clean up that river. In the 1980's that river was cleaner than any other river in the United States. So, I'm telling you, just one person here in this room that represents Montpelier, going and calling up other people and going to your City Council and getting them to stop this leachate can happen. This one woman led that charge. You can do it. It took her 20 years, but she was unrelentless. What I mean to say is that we came here, some group of DUMP and I came here in 2018 to warn your mayor, Mary Watson, of the concerns of this leachate being dumped into the Dog River and that these chemicals pass through your wastewater treatment plant directly into the Dog River. I apologize that we didn't follow up on that, to follow up with the people we spoke to here, and to her because following that meeting, we got back to Newport only to find that the City Council there overturned their decision not to take the leachate by influences that are in this room that I don't need to mention. So, we were faced with that challenge and then we had to actually bring a lawsuit against ANR, who deferred that to Casella, and sue them to stop that leachate from being dumped into our river. You don't need to do that. You have the power to stop that leachate tomorrow by telling your City Council we don't want it. Tell your mayor we don't want it. We don't care what the amount of money you receive is for it. 5 cents a gallon for 10s of millions of toxic chemicals is not sufficient. There's no reason for dumping this into the river. This is part of the report right from Casella, their laboratory report. This is just some of the toxic chemicals that are in that leachate. There's over 150, almost 200. The ones I've highlighted here are cancer causing and endocrine affecting chemicals as well. This is just a few of them, and this is the top components going into your river. ANR is not even following their own permit requirements to prevent the introduction of pollutants into the wastewater treatment plant. It says clearly in their title 40, and this is the Clean Water Act Title 40 403.2, the objectives of the general pretreatment regulations by establishing responsibilities for government and industry to implement national pretreatment standards, this regulation fulfills 3 objectives. B of those 3 objectives is prevent the introduction of pollutants into water treatment facilities which will pass

through the treatment works or otherwise incompatible with such works. It says that right in their permit. They should have stopped that permit and addressed that with the polluters to begin with right at that point. PFAs, PFOAs and other chemicals passed directly through the treatment plant untreated. Casella knows this. It's in their own engineering reports. ANR knows this, they've stated that clearly. As the ANR presenter stated right here, that your city does not have to accept this. Their issuing the permit does not require you to accept this leachate to be dumped into your river, you can say no. This permit, which I don't agree with, the discharge permit as well as being combined with this pretreatment scheme that they're coming up with, has been developed for the last year with private talks, maybe they are public, between ANR everyday talking back and forth between themselves and Casella about how to make this work. This is being expedited because Casella knows, as does ANR, that new EPA regulations are coming. They want to get this in under the wire. As with any corporation facing changes in the law, they are working hard to get in under the current regulations so that they are less stringent than what's coming. I'll be happy to come down. Members of DUMP will come down to your City Council meeting. We will help you combat this. Stop this now. It is the only way to keep this leachate from coming into this town or this state from over the border, not to mention that the leachate that's coming in here is not just from Casella's dump. It's from waste all over the surrounding state. That waste is being brought in by Casella to that dump. That's being diluted down to this leachate, which is being dumped into Vermont rivers. The same thing goes for New Hampshire, almost 50% of the waste that's going into the landfill there that leachate is derived from, it's coming from Massachusetts, Connecticut and surrounding states so this needs to stop. There has to be another method. We don't have to take it. It's not our problem. They get paid to take this waste in. Please pass this information on to your fellow people here in Montpelier. Get them to stand up to the City Council. Get them say the money is not enough to poison this community and to poison all the communities down the river of Montpelier. Thank you very much.