What is Leachate?

Leachate is defined as any contaminated liquid that is generated from water percolating through a solid waste disposal site, accumulating contaminants, and moving into subsurface areas. Soluble or suspended solids are collected in the liquid as it passes through waste. It is the liquid by-product of garbage in sanitary disposal sites.

At the local landfill leachate is collected and hauled to large capacity (30,000+) population wastewater treatment sites for processing. The leachate will blend with the existing waste of the treatment plant, run the plant processing, and eventually be discharged to a receiving water. The City of Mayville does not accept leachate, though discussion and research has been done regarding this topic. Leachate has a high variability in the contaminant content that may be present in the waste that is produced. The City of Mayville as well as every other municipality must follow a site-specific permit regulated by the State of Wisconsin DNR and ruling of the U.S EPA.

Some of those contaminants include:

Ammonia:

* Leachate tends to be high in ammonia.
* 17 mg/L enters the plant daily.
* Leachate results obtained average 1000 mg/L daily.
* Mayville is limited to discharging 3 mg/L on a monthly average.
* If leachate is fed into the treatment plant too quickly, untreated ammonia enters the river and the available oxygen is used to deplete it. This oxygen is necessary for the survival of aquatic life.

Biochemical Oxygen Demand:

* 180 mg/L enter the plant daily
* Leachate results obtained average 5000 mg/L
* Mayville is limited to discharging 21 mg/L weekly

Phosphorus

* 4 mg/L enter the plant daily
* Leachate results obtained average 15 mg/L daily.
* Mayville is limited to discharging 1.0 mg/L.

Chlorides

* 450 mg/L enter the plant daily.
* Leachate results obtained average 4800 mg/L.
* Mayville is limited to discharging 555 mg/L.

Humic Acid

* Typically found in leachate.
* Humic acid hinders UV disinfection which may result in permit violations for E.Coli and coliform bacteria. UV disinfection is done to disinfect before flows enter the river.
* Engineering recommendation is accepting a maximum of 1/200th of leachate flows, or3,000- 5,000 gallons maximum daily. (Matching other municipalities would require acceptance of 50,000 gallons/day)

Metals/Mercury

* Two portions of waste are handled at the treatment plant, liquid is treated and enters the river, solids are concentrated and return to land as fertilizer.
* By permit all metals are tested before we are allowed to land apply solids. High metal concentrations will not be allowed to be applied to land.

A study regarding leachate was conducted by Strand and Associates in 2019 as well as MSA Professional Services in 2021. The study by Strand is very extensive. Please e-mail csteger@mayvillecity.com to request a copy. Study findings from a project update by MSA are below:

