



PFAS DESTRUCTION IN FOAMATE FROM LANDFILL LEACHATE

Low energy destruction of PFAS from foam fractionation process: Greater than 90% destruction to below customer's PFAS effluent goals

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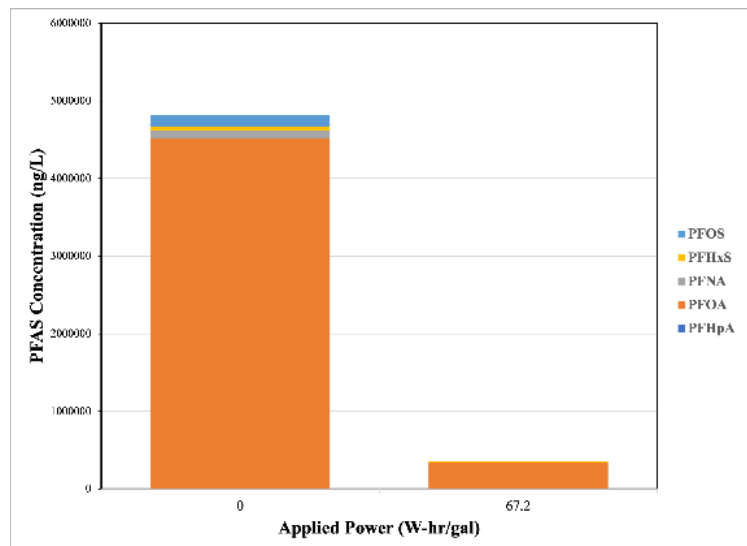
CASE STUDY

Foam Fractionation:

Foam fractionation is a separation technique used to remove substances from a liquid by creating and manipulating foam. It is particularly useful for the removal of surfactants and organic compounds from aqueous solutions. Foam fractionation can be effective in removing PFAS from water and liquid waste; however, it does not destroy these chemicals, and further treatment or disposal of the resulting highly concentrated foamate is necessary.

Aclarity's landfill client initially explored the use of foam fractionation for the separation of PFAS in their leachate. The client requires management of the following PFAS compounds: perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA).

The initial concentration of PFAS compounds in the foamate was 4.8 mg/L. With low applied power and treatment time, there was more than 94% destruction of total PFAS compounds.



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CASE STUDY

Key Takeaways:

- Aclarity's low energy EOx can be used to effectively destroy PFAS in challenging concentrations found in the waste derived from foamate.
- Energy use of 67 watt-hour/gallon to destroy PFAS in concentrations of over 14M ng/L is a breakthrough in PFAS destruction.
- The initial concentration of foamate was 4.8 mg/L and after treatment the final concentration was almost 0.3 mg/L.

Due to the varying nature of leachate and other wastewater streams, results may vary. Aclarity does not advise on PFAS destruction potential until a water analysis is provided and lab scale testing has been completed. Data provided herein is representative only.

Comparing foamate disposal options, Aclarity's customer opted for PFAS destruction instead of disposing of the foamate due to similar costs, lower downstream risks, and ability to uphold sustainability goals.

Aclarity worked with the customer to design for greater than 90% destruction of the PFAS compounds in foamate. Aclarity exceeded the customers' design criteria. For more information on how Aclarity can do this for you in your process, contact us.

Conclusion:

Aclarity's EOx system is solving the client's PFAS management needs by cost effectively destroying PFAS compounds in foamate from an existing foam fractionation system and eliminating downstream risk to the wastewater treatment plant. The low energy requirement of 67 watt-hour/gallon equates to one 75 watt light bulb in a gallon of water for less than 1 hour.





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