

MYCELX

MULTI-STAGE PFAS REMEDIATION TECHNOLOGY



CASE STUDY

PFAS Treatment System Trial

CUSTOMER: DoD Environmental Contractor

LOCATION: Newburgh, New York, U.S.A.

Application

Treatment of Stormwater Runoff
Removal of PFOA and PFOS before
discharge into local watershed

FLOW RATE: 5 GPM Pilot System

OBJECTIVE:

Demonstrate ability of MYCELX® Multi-Stage
Treatment Technology to reduce PFAS levels to Non-
Detect across all detected analytes including:

PFOS 350 ng/L, PFHxS 100ng/L, PFHxA 100ng/L,
FtS 6:2 100 ng/L

Sum PFAS: 940 ng/L

RESULTS:

Discharge quality over five days of trial operation:
Sum PFAS: Non-detect
99.99% removal across 36 analytes



CHALLENGE

The environmental contractor operates a 500 gallon per minute (GPM) Interim Stormwater Treatment System for the treatment of storm water runoff by reducing perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) before discharge of clean stormwater into the local watershed. A 2.5-acre retention pond collects stormwater runoff from a large industrial area and nearby highway from land surrounding the area. **This location currently utilizes a combination of GAC and ion exchange (IX) resin technologies to treat water from the pond. The existing treatment system is challenged by seasonal factors including biological growth and co-contaminants commonly found in stormwater from industrial sites such as airports.**

MYCELX® utilized a skidded, 5GPM pilot system for demonstration of PFAS remediation to non-detect concentrations. The skid consists of multiple stages of MYCELX® cartridge filtration and final stage of Performer™ media, designed for treatment of groundwater or surface water for the removal of PFAS and co-contaminants such as hydrocarbons, suspended solids, and organics. The system was operated in parallel with existing GAC and IX treatment technologies, downstream of existing pretreatment technologies including sand and bag filtration.

SOLUTION

The MYCELX® skidded 5GPM trial system is designed for easy mobilization and commissioning on site. The system was deployed to site with commissioning requiring only one day. The specialized media were chosen to address the anticipated complex water source from conditions such as the presence of co-contaminants commonly found in stormwater from industrial sites such as airports.

The trial system was comprised of pre-filtration cartridges, MYCELX® specialty cartridges and bulk Performer media. Pre-filtration cartridges provide removal of suspended solids and bulk organic mass. Specialty MYCELX® cartridges remove competing co-contaminants such as hydrocarbons, emulsified fuel oils and some synthetic organics such as PFAS. The Performer bulk media achieves ultratrace polishing of synthetic organics (PFAS) to below detectable limits.

RESULTS

The trial successfully demonstrated the ability of the MYCELX® system to completely remove all detected analytes to non-detect in a single pass. Fourteen analytes with a sum total concentration of up to 1,037 ng/L were reduced to non-detect concentrations, achieving 99.99% removal efficiency. A single analyte was detected below reportable limits, effectively at non-detect concentration.

Complete removal of this spectrum of chemicals eliminates both the existing PFAS problem and prevents future degradation of components into regulated PFAS compounds. With reliable and complete remediation of detectable PFAS chemicals, MYCELX® provides a novel technological solution to improve performance.

