

BAM Injection Treating PFAS

Former Tannery – Northeast Michigan

Pilot Treatment

Project Summary: ORIN conducted a pilot test to treat groundwater contaminated with PFAS using BAM, a pyrolyzed cellulosic material, via in-situ DPT injection. 4,445 gallons of BAM treatment solution was injected through 46 DPT locations. The treatment area included EW-2 and PZ-1. PZ-1C monitored the downgradient effect of the treatment area. The wells have been continuously monitored for the long term impact of BAM on the removal of PFAS from groundwater.

Exceeds 76% Reduction

Site Conditions:

Groundwater Contaminants –

T-PFAS:

EW-2: 7,193 ppt

PZ-1C: 4,499 ppt

Impacted Matrix –

Silty Sands

8 to 2 ft-bgs

Treatment Chemistry –

BAM Ultra



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Project Results: Baseline samples were taken from the target and downgradient areas prior to treatment to characterize the contaminant level. After 1 week, PFOS and PFOA concentrations in PZ-1 were reduced from 985 ng/L to 60.6 ng/L and 94.3 ng/L to 7.33 ng/L respectively. The highest baseline concentrations of Total PFAS (T-PFAS) was measured in EW-2 at 7,193 ng/L. EW-2 observed near non-detection after 1 year with total reductions exceeding 99%. After approximately three years post injection, T-PFAS in EW-2 measured an 86% reduction at 1,011 ng/L. The downgradient well PZ-1C shows successive reductions in T-PFAS following in-situ remediation of the upgradient treatment area. The results of this project prove the effectiveness of BAM at treating source area PFAS in groundwater and for reducing the flux to downgradient areas. BAM has shown to be a viable remedial option at high and low PFAS concentrations.

