

Perfluoroalkyl Substances Source Tracking at the Former Pease Air Force Base

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Background/Objectives. APTIM conducted an investigation of PFAS in fractured bedrock down gradient from the former fire training area to delineate the likely pathway to impacted private residential wells. The investigation included 2-D resistivity testing to identify likely transmissive zones in the fractured bedrock; down-hole geophysical evaluation using fluid temperature and fluid resistivity, three-arm caliper, heat pulse/flow meter, and acoustic televiewer (ATV) to locate fractures and high conductivity zones. Different borehole zones were isolated with packers for PFAS sampling.

Approach/Activities. Following 2-D soil resistivity testing, four bedrock wells (08-6722 through 08-6725) were installed down gradient of the former fire training area to assess PFAS concentrations in bedrock. Downhole geophysical logging was completed at all four boreholes. Groundwater from different fracture zones within each borehole was collected for PFAS analysis utilizing packers.

Results/Lessons Learned. 2-D resistivity testing was successful in locating transmissive zones in bedrock. Down-hole geophysical testing data confirmed that most fractures strike to the northeast and a secondary set of fractures strikes to the northwest. The investigation confirmed that PFAS is migrating in bedrock primarily along the orientation of northeast-striking and northwest-striking fracture sets. High PFAS concentrations above the state standard indicate connected fracture sets in between the source area and two of the installed boreholes. PFAS samples collected from different depths in one of the impacted boreholes show decreasing PFAS concentrations with depth.