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**ADVANCED MOBILE FILTRATION SERVICES LLC (AMFS)
ANNOUNCES THE
Successful Removal of PFAS from Source Water
Through Filtration without Chemical Means**

BACKGROUND

Advanced Mobile Filtration Services LLC (AMFS) recently completed a 3,000 gallon field trial in Clarksville, FL, USA for an undisclosed client to remove per- and polyfluoralkyl substances (PFAS) from a highly-contaminated water source that was derived from aqueous film forming foams (AFFF), which are water-based and frequently contain hydrocarbon-based surfactants.

PFAS were previously referred to as perfluorochemicals (PFCs). PFAS are a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. Fluoropolymer coatings can be used in such varied products as clothing, furniture, adhesives, food packaging, heat-resistant non-stick cooking surfaces, and the insulation of electrical wire. Many chemicals in this group, including perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), have been a concern because they do not break down in the environment, can move through soils and contaminate drinking water sources, and they build up (bioaccumulate) in fish and wildlife. PFAS have been found in rivers and lakes and in many types of animals on land and in the water. (Centers for Disease Control and Prevention).

Using EPA's PFOA and PFOS Lifetime Drinking Water Health Advisory level of 70 parts per trillion (ppt) as the preliminary remediation goal (PRG) for contaminated groundwater that is a current or potential source of drinking water, where no state or tribal MCL or other applicable or relevant and appropriate requirements (ARARs) are available or sufficiently protective.

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- PRGs are generally initial targets for cleanup, which may be adjusted on a site-specific basis as more information becomes available.

The interim recommendations and additional information can be found at: <https://www.epa.gov/pfas/interim-recommendations-addressing-groundwater-contaminated-pfoa-and-pfos>.

Historically, AFFF/PFAS contaminated liquid is removed from the contaminated site through vacuum trucks, which are then subsequently discharged at a disposal facility. This technique requires transportation of large volumes, utilizing numerous trucks traveling in excess of four (4) hours each way along with the disposal of the same large volume at the disposal facility.

EQUIPMENT

The AMFS mobile filtration unit used in the test is a 53 foot fully-insulated and contained tractor trailer that was designed specifically to support remote and temporary operational needs of real-time and/or stored contaminate filtration through nano filtration, 0.001um, using low-pressure to obtain high-volume flow rates (150+ gpm). Our unit filter membranes are permanent, are not periodically disposed of in landfills or incinerated to recharge, and thus provide an economic gain to operate remotely. In addition, there is no flocculant, coagulant or other chemicals required to prepare the contaminated waste stream prior to filtration. The two-phase separation concentrates all >0.001um particles from the water phase, resulting in a concentrated overflow discharge for further disposal/handling and a



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potable water phase effluent that can be disposed of on location or re-used as needed. In order for disposal on location, the waste generator should follow all local discharge permits.

RESULTS

AMFS exceeded the client’s expectations by removing the contaminants (particles >0.001um including PFAS) from the 3,000 gallon water source at a rate of 156 gallons per minute (gpm), resulting in 2,700 gallons of potable water effluent and 300 gallons of concentrated overflow discard for disposal, resulting in a great improvement of typical disposal methods, large reduction in trucks on the road, fuel consumption and needed landfill/disposal space.

The 3,000 gallon water source was run multiple times to capture improvements after each run, and analytical laboratory sample jars were used to capture filtered effluent through the effluent discharge sample port.

TABLE 1: Analytical Laboratory Field Trial Results

The analytical results of the field trial are depicted in TABLE 1 above. Overall, the contaminated sample indicates PFAS from 104 - 1,000 ppt, 1.5 - 14X higher than the current EPA’s PFOA and PFOS Lifetime Drinking Water Health Advisory level of 70 ppt or 0.07ppt (ug/L). The *First Run* results show a nine (9) times reduction in overall PFAS, or 12 - 170 ppt, and the *Second Run* results show a marked reduction in PFAS at 2 - 33 ppt, with the largest contaminant remaining in situ being less than half of the EPA’s recommendation of

1 ug/L = 1 ppm = 1,000 ppt	Source Sample	First Run	Second Run	Third Run
	BT-SO-01	BT-EFF-01	BT-EFF-02	BT-EFF-03
Analyte	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)
Perfluorobutanoic acid	1.00	0.170	0.0336	0.0187
Perfluoropentanoic acid	0.530	0.0655	0.0124	0.007
Perfluorohexanoic acid	4.43	0.623	0.107	0.0554
Perfluoroheptanoic acid	0.104	0.0122	0.0025	ND

70 ppt. In addition, the Third Run results removed nearly all of the PFAS, or ND (non-detectable) - 18 ppt.

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CONCLUSION

With AMFS's recent success in removing PFAS from contaminated source water, our current and future chemical free mobile filtration units will be able to provide our current and future clients with the most economical and operational methods to attain the EPA's PFOA and PFOS **Lifetime Drinking Water Health Advisory** level of 70ppt. In addition, clients can drastically reduce their operational expenses by reducing their overall contaminated fluid volumes and improve their environmental footprint which occurs through logistics and disposal fees associated with the current alternatives in use.

Further information can be requested through info@amfsfiltration.com or +1-800-484-4590.