

1975 Using a preconcentration method and NMR, Guy and Taves report presence of organic fluorine compounds in blood bank blood from around the country (average concentration about 0.03 ppm OF, which corresponds to about 45 ppb PFOS). Work was first reported at a conference (ACS?) and subsequently published in Biochemistry Involving Carbon-Fluorine Bonds, "Organic Fluorocompounds in Human Plasma: Prevalence and Characterization" in 1977. Guy and Taves hypothesis that POAA is the OF compound. This is never satisfactorily verified (e.g. by MS or by NMR).

1975 - probably in September, According to Richard Newmark, Dallas Zimmerman (3Mer) obtained copy of the NMR spectra at the meeting and spoke with CAL about the possibility of a 3M-produced contaminant.

1976 - by October, CAL has the ability to measure PFOS in sera using NMR (report #AR7230)

According to Richard Newmark, CAL team lead by Don Hagan and Jon Belisle (Richard Newmark - NMR) confirm that Guy and Taves' spectra reflects the presence of PFOS - not POAA - as the major OF compound.

According to Richard Newmark, Newmark generates 6 reports to this affect. **Can we locate any of these reports?**

According to Richard Newmark, Newmark analyzes samples he receives from Hagan that he believes are blood bank samples but does not know for sure. **Can we locate the notebook that references the identity of the sample in order to match it with microfished spectra?**

1977 Unspecified fluorochemical (called "B") is identified in sera samples from High Point, NC. No conclusions are made about the specific compound, but data is attached. Analysis was by GC.

1977 Elevated R-F values are found in 3 3M employees who use Ensure and Skaid skin care products. Report suggest that there's not enough samples for specific compound id, yet GC data is attached indicating presence of "B".

1979 Guy and Taves author a paper speculating that POAA is the main OF in human blood.

According to Richard Newmark, Guy and Taves send this paper to CAL for review.

According to Richard Newmark, 3M lawyers urge CAL not to release the true identity (PFOS) of the OF compound.

Belise, Hagan, and Bunnelle publish internal reports measuring POAA and PFOS in worker blood using GC/ECD. (report # A73629)

Belise and Hagan publish a paper suggesting the accuracy of Guy and Taves' conclusions about the identity of the OF found in blood. They propose a new analytic method (derivitization followed by GC/ECD analysis) for the analysis of POAA extracted from tissues and fluids. Recoveries of POAA are determined by spiking human sera free of POAA. **Doesn't the ability of these researchers to verify blank (with respect to POAA) sera prior to spiking indicate that Guy and Taves conclusion was inaccurate? Analytical Biochemistry: "A Method for the Determination of Perfluorooctanoic Acid in Blood and Other Biological Samples".**

Need copies of any papers Guy and Taves published from 1975 on.

Concentration of branched isomer in metabolised material confirmed (5/77, report #C46956) and (5/6/77, report #A64037)

**Exhibit
2534**

State of Minnesota v. 3M Co.,
Court File No. 27-CV-10-28862

3MA10039277