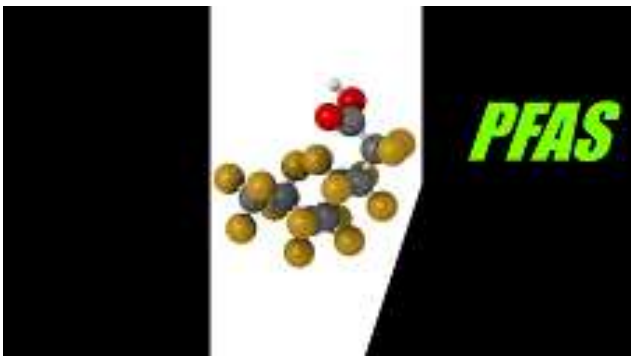
WAGENINGEN EVALUATING PROGRAMMES FOR
ANALYTICAL LABORATORIES

Per- and Polyfluoro Alkyl Substances



Report 2019

Nederlandse versie no 2

Gereviseerde versie, vervangt Nederlandse versie no 1

WAGENINGEN
UNIVERSITY & RESEARCH

Inleiding

Beste PFAS deelnemers,

Dit rapport met versie no 2 vervangt het eerder verschenen rapport met versie nummer 1, dat hiermee wordt teruggetrokken.
Versie no 1 bevat het accreditatie logo van de RvA. Hiermee wordt mogelijk de indruk gewekt dat de parameters opgenomen in dit ring onderzoek al onder de scope van accreditatie van WEPAL vallen, terwijl dit niet het geval is. Dit wordt ook expliciet vermeld in de general information, accreditation op pagina 6.
Omdat dit rapport mogelijk openbaar gemaakt zal worden is de tabel met deelnemende laboratoria (Tabel 2) verwijderd en zijn uit de proefopzet namen van laboratoria verwijderd.

Hierbij presenteren we u het rapport van het ringonderzoek PFAS dat in opdracht van het RIVM door WEPAL is georganiseerd. Bij dit ringonderzoek zijn 9 laboratoria betrokken: 6 uit Nederland, 2 uit België en 1 uit Zweden. Dit rapport is gedeeltelijk in de Nederlandse taal, omdat dit de voertaal is van 8 van de 9 laboratoria. Voor het Zweedse laboratorium zal ook een Engelse versie gemaakt worden.
Het rapport is in het format van de reguliere WEPAL kwartaalrapporten, met een aantal aanvullingen. Voor dit ringonderzoek zijn 9 monsters verstuurd en anders dan in de reguliere programma's is gevraagd de monsters in duplo te analyseren. In dit ringonderzoek is naast de vergelijking van de resultaten van de laboratoria ook gekeken naar de binnenlabspreiding, tussenlabspreiding en de reproduceerbaarheid.
Tevens is er één monster in duplo meegenomen. Dit is niet bekend gemaakt bij het versturen van de monsters, de laboratoria waren hier niet van op de hoogte. In de laatste paragraaf van dit rapport zijn de resultaten van dit monster met de duplo meting vergeleken.

Dit rapport begint met een beschrijving van de proefopzet gevolgd door de resultaten/ conclusies van dit ringonderzoek, daarna gevolgd door algemene informatie over de inhoud van het rapport, de data en in veel gevallen een grafische weergave.

Mochten er vragen of opmerkingen zijn over de opzet van het ringonderzoek of de rapportage, neem dan contact met ons op, door een mail te sturen naar info.wepal@wur.nl.

Met vriendelijke groet,

Winnie van Vark
Manager WEPAL

Calculated with Matlab NDA version: WepalNDAstat_V19_3
Figures version: WepalQuasi_figures_V20_1

Calculated 31-12-2019 (14:14)
Approved by Winnie van Vark, manager WEPAL

Content

Proefopzet

Monsterkeuze

In de oorspronkelijke opdracht zouden 9 monsters geselecteerd worden: 3 zand, 3 veen en 3 kleimonsters met 3 PFAS niveaus: niet verontreinigd, verontreiniging op detectielimiet en verontreinigd.
De tijdsdruk was erg hoog, het lokaliseren van geschikte monsterlocaties en de bereiding van homogene monsters vergt gewoonlijk enige maanden. Daarom is besloten gebruik te maken van monsters uit de collectie van WEPAL. Deze monsters zijn voorbehandeld en verdeeld in porties en zijn bewezen homogeen in metalen, bodem karakteristieken (deeltjes grootte, koolstofverbindingen, pH), organische contaminanten (PAH's, PCB's) etc.
Op dit moment zijn er geen veenmonsters in de collectie en bovendien is van de monsters het PFAS gehalte niet bekend. Daarom zijn 16 monsters die in 2019 in het SETOC programma (organische contaminanten in sedimenten) gebruikt zijn plus de twee AS3000 monsters, gescreend op PFAS verbindingen. Van 3 monsters (nagenoeg niet verontreinigd, net boven detectielimiet en verontreinigd) zijn verschillende eenheden (potjes met monster) geanalyseerd om een indruk te krijgen van de invloed (contaminatie, adsorptie) van de plastic potten. Hierbij zijn geen problemen gevonden. Uit de beschikbare 18 monsters is door WEPAL een selectie gemaakt van 8 monsters. De criteria zijn: zoveel mogelijk verschillende PFAS verbindingen in verschillende concentraties en variatie in organische stof en kleigehalte. De laatste twee parameters zijn een onderdeel van het SETOC programma en zijn dus vooraf bekend.

Proefopzet

Nederlandse laboratoria die PFAS analyses uitvoeren zijn gevraagd deel te nemen aan dit ringonderzoek.
In totaal waren dit 6 laboratoria. Omdat dit aantal te gering is voor een goede statistische analyse, zijn ook Belgische- en een Zweeds laboratorium benaderd. In totaal hebben 9 laboratoria deelgenomen aan dit ringonderzoek.
De te analyseren PFAS verbindingen zijn overgenomen van de advieslijst voor PFAS versie 12 juli 2019: https://www.bodemplus.nl/onderwerpen/wet-regelgeving/bbk/vragen/grond-baggerspecie-pfas-veldwerk-analyse-toetsing/faq/welke-pfas-verbindingen-geanalyseerd/
Aan de deelnemende laboratoria zijn 9 monsters toegestuurd.
Om een indruk te krijgen van de reproduceerbaarheid van de analyses is één van de monsters in duplo toegestuurd. Dit monster bevatte diverse PFAS verbindingen in wat verhoogde (meetbare) concentraties.
Uit praktische overwegingen zijn de monsters opgesplitst in 2 series (één van 6 en één van 3), omdat bij de rapportage de resultaten van 6 monsters op een regel passen.
De laboratoria zijn gevraagd de monsters in duplo te analyseren.
Voor rapportage van de analyseresultaten is gebruik gemaakt van het webformulier van WEPAL, dat voor de gelegenheid geschikt gemaakt is om duplo resultaten te rapporteren.
De laboratoria zijn ook gevraagd informatie te geven over de gebruikte analysemethode. Op basis van deze informatie is een MIC-lijst (method indicating code) samengesteld (zie pagina 58). Deze codes zijn vermeld bij de individuele analyseresultaten.

Rapportage

In de reguliere WEPAL programma's wordt de NDA statistiek (gemiddelde en standaarddeviatie) alleen gerapporteerd als er meer dan 7 waarnemingen zijn. Omdat niet alle laboratoria alle verbindingen analyseren en er een aantal "kleiner dan detectielimiet" gerapporteerd hebben, was in veel gevallen statistische analyse niet mogelijk. Daarom is in dit rapport de statistische analyse uitgevoerd als er minimaal 4 waarnemingen zijn, onder voorwaarde dat 70% van de waarnemingen een z'-score < |3| heeft en minimaal 4 waarnemingen een z'-score < |2|. Bij te weinig resultaten of wanneer niet aan dit criterium is voldaan, wordt de mediaan en de MAD (mediaan van de absolute afwijking van de mediaan) gegeven.

Allereerst is per monster een samenvatting gegeven van de analyseresultaten, waarbij de analyseresultaten aangevuld zijn met diverse bodemkenmerken uit het SETOC ringonderzoek. (deeltjesgrootte verdeling, organisch- en anorganische C).
Daarna de individuele data met statistiek per parameter, aangevuld met de MIC (method indicating code). De betekenis van de codes is te vinden aan het eind van deze paragraaf.
In deze paragraaf per parameter het absolute verschil van de duplo waarnemingen, waaruit de binnenlabspreiding, tussenlabspreiding en reproduceerbaarheid is berekend.
Omdat dit niet standaard is in de WEPAL rapporten, een uitleg van de berekening:

We gaan uit van n laboratoria die 2 metingen aan een monster verrichten. Het resultaat y_{ij}, i=1,2...n, j=1,2 van een laboratorium i kan geschreven worden als

$$y_{ij} = m + b_i + e_{ij}.$$

In deze vergelijking is m de consensus waarde van het monster, b_i is de systematische fout (bias) van laboratorium i met variantie σ_L^2 en e_{ij} is de spreiding gepaard gaande met de herhaalbaarheid met variantie σ_r^2. Naast de herhaalbaarheidsstandaardafwijking σ_r wordt in de literatuur ook de reproduceerbaarheids standaard afwijking gedefinieerd als $\sigma_R = (\sigma_r^2 + \sigma_L^2)^{1/2}$.
De herhaalbaarheid en reproduceerbaarheid van methoden worden in methode-evaluerende ringonderzoeken onderzocht. In dergelijke onderzoeken gebruiken de deelnemende laboratoria hetzelfde meetprotocol. In onderhavig ringonderzoek gebruiken de laboratoria hun eigen meetmethode. In deze analyse berekenen we σ_L en σ_r als maat voor de respectievelijk de tussenlaboratorium en binnenlaboratorium spreiding.
De varianties worden met robuuste statistiek berekend gebaseerd op een methode beschreven door Lischer[1]. We nemen voor ieder laboratorium de som $v_i = \{(y_{i1} + y_{i2})/2\}$ en de absolute waarde van het verschil $w_i = abs\left(\left\{\frac{y_{i1} - y_{i2}}{2}\right\}\right)$ van de duplo's. De varianties van v en w zijn Var(v_i)= $\sigma_L^2 + \sigma_r^2/2$ en Var(w_i)= $\sigma_r^2/2$. De varianties van v en w worden berekend met de NDA methode waaruit direct de binnen- en tussenlab spreidingen bepaald worden. De resultaten staan direct na de statistische analyse van de betreffende parameter in de paragraaf “data en statistics” (vanaf pag. 22).

Op basis van de NDA mean, standaard deviatie en onzekerheid zijn z'-scores berekend. De resultaten hiervan zijn weergegeven in “ranked Z-score” grafieken en in de daaropvolgende paragraaf de numerieke waarden. Vervolgens histogrammen en ranked resultaten – voor de beschrijving zie general information.
Tot slot zijn de resultaten van het duplo monster 1 en monster 5 tegen elkaar uitgezet in 2 sample plots.

Resultaten

Gebruikte methoden/ Detectielimiet.
De methodes die de laboratoria gebruiken verschillen op details. Geen van de laboratoria gebruikt exact dezelfde methode. Bij 7 van de 9 laboratoria is de detectielimiet 0.1 ug/kg. Lab PFAS 6 heeft een hogere detectielimiet, mogelijk veroorzaakt door de verhouding inweeg en extractiemiddel (1 gram plus 2 maal 10ml ACN-MeOH), wel wordt een concentratiestap gebruikt voor de meting. PFAS 7 heeft voor een aantal parameters een lagere detectielimiet.
Een samenvatting van de statistische resultaten is gegeven op de pagina's 14 tot 22.
Pag. 23 t/m 58 bevat de detailinformatie inclusief de verschillen die gevonden zijn in de duplo meting.
Over het algemeen is de spreiding in de duplo analyse klein en worden de verschillen in de resultaten vooral veroorzaakt door de tussenlab spreiding (vergelijk binnenlab spreiding met tussenlab spreiding).
De spreiding in de resultaten (standaard deviatie en relatieve standaard deviatie) verschilt, niet alleen per parameter, maar ook per monster. De resultaten van de verschillende labs lijken voor de meeste parameters (mogelijk uitgezonderd de PFOS verbindingen) goed vergelijkbaar, maar of de variatie in resultaten acceptabel is, zal een expert op dit gebied moeten vaststellen.

De grafieken van de combined z'-scores en de z'-score tabellen met de numerieke waarden geven een goed beeld van de verschillen per laboratorium. De labs PFAS1, 2 en 10 scoren voor alle parameters lage z'-scores, wat betekent dat alle resultaten dicht bij de consensuswaarden van dit ringonderzoek liggen.
PFAS 6 vindt ten opzichte van de andere labs hogere gehalten, dit lab is ook het lab met de hogere detectielimiet. De overige labs scoren over het algemeen ook goed en hebben alleen uitbijters voor individuele parameters (meestal 2 of 3).

Vergelijking van het duplomonster:
Op bladzijden 162 en verder staan grafieken waarin voor een aantal verbindingen de resultaten behaald voor monster 793 zijn uitgezet tegen die voor het identieke monster 793-2. Ter ondersteuning van de interpretatie is in alle grafieken de lijn x=y toegevoegd. In alle gevallen worden lineaire verbanden gevonden waarbij de resultaten dicht bij de lijn x=y liggen. De grafieken in combinatie met de gegevens over de duplo metingen aan de monsters wijzen erop dat de binnenlaboratorium spreiding klein is ten opzichte van de tussenlaboratorium spreiding.en dat laboratoria de meetmethode goed onder controle hebben. De lineaire verbanden duiden op systematische verschillen tussen de laboratoria.

[1] P. Lischer, Robust Statistical Methods in Interlaboratory Analytical Studies. In: Rieder H. (eds) Robust Statistics, Data Analysis, and Computer Intensive Methods. Lecture Notes in Statistics, 109 (1996). Springer, New York, United States of America.

General Information

Accreditation

The Wageningen Evaluating Programmes for Analytical Laboratories organisation is accredited for the organisation of Inter laboratory Studies by the Dutch Accreditation Council RvA since April 26, 2000. The accreditation is based on the ISO/IEC-requirements (General requirements for proficiency testing, ISO/IEC 17043:2010). The scope of accreditation can be found on the website of RvA. The accreditation covers the quality system of the organisation as well as the determinand groups to be found on the WEPAL website: http://www.wepal.nl/website/about_wepal/ScopeHTML.htm.
This report contains the results of a new proficiency test. The determinants reported in this document do not meet the criteria for accreditation and are not part of the scope of WEPAL.

Subcontracting
Some aspects of the proficiency testing scheme may from time to time be subcontracted. When subcontracting occurs it is placed with a competent subcontractor. WEPAL is responsible to the scheme participants for the subcontractor's work.
The analysis for the homogeneity tests and the screening of the samples used in this proficiency test were carried out by a subcontractor.

Confidentiality of results
The confidentiality of the results is extremely important in the Wepal programs. The participants may opt for a code name that indicates their laboratory, or one that ensures their anonymity. In the reports, only the code names will be mentioned. In this PT the labcodes were assigned by WEPAL.
When an accrediting body or a regulatory authority requires the proficiency test results to be provided by WEPAL the participants shall be notified and asked for permission.
Participants are not allowed to report information published in this report other then their own data. For example it is not allowed to produce publications from data produced by other laboratories published in this report.

Complaints and or remarks
The reports of WEPAL are assembled with the utmost care. Please contact us on info.wepal@wur.nl if you feel that the reports are not at a satisfactory standard, if you encountered errors in your results or if you want to appeal against the evaluation of your performance. Also feel free to contact us if you have any other complaints, remarks and or suggestions.

Homogeneity and stability of the distributed samples

Homogeneity tests

WEPAL has developed special equipment for the production of representative subsamples (Houba, 1993) from a bulk material. The proper functioning of this equipment is tested by a homogeneity test in the final subsamples. To perform this test, samples are collected at regular intervals during the preparation of the samples. The collected samples, with a minimum of 10, are analysed in duplicate measurements under repeatability conditions. A selection of critical determinands is chosen for the tests. The results of the homogeneity tests are published in the annual reports.
All samples used in this round of the proficiency test have passed the homogeneity test.
The WEPAL samples are stored in PE bottles. To check if there is influence on the PFAS content of the bottles 3 samples were selected (one with low, one with medium and one with high PFAS concentrations) and a additional homogeneity check was performed. These samples passed the homogeneity check on PFAS.

Check of results

Before distribution of the periodic reports to the participants, a final check is made based on the results found by the participants. This check is made for all reported determinands. Suspicious results (calculation errors or mixing up samples) are reported to the laboratories for a final check

Stability of the distributed samples

The dry testmaterials have been shown to be stable over a number of years when stored at room temperature.

Yearly the results of the samples included in the proficiency tests are compared with historical data to monitor stability. At this moment there is no information about stabillity of PFAS in the samples.

The PFAS report

This proficiency testing program has been established in order to evaluate the accuracy and precision of the analytical procedures used. The participating laboratories received nine air-dried samples and are asked to analyse the samples according to their own procedures. To determine the repeatablity the laboratories are requested to perfom the analysis in duplicate.
The results of the determinations are collected and processed at Wageningen University. After publication each participant can compare his results with those of all the other members of the exchange program. WEPAL will not comment on results unless asked to do so. The results are shared with RIVM, as this proficiency test is organised by order of RIVM.

Reporting of data

The analysed components must be reported in the units requested in the webform format (µg/kg) without correction for moisture content.

Statistics

Normal Distribution Approximation (NDA)

Interlaboratory studies like those of WEPAL-QUASIMEME frequently give rise to datasets that have complex distributions including excessive tailing and multiple modes. Consequently, sophisticated statistical methods are required to obtain meaningful assessments. A methodology is needed that does not rely on arbitrary outlier removal or subjective manual interpretations. The model that is chosen calculates population characteristics (mean and standard deviation) from experimental datasets as described by Cofino et al. (2000) and Molenaar, Cofino and Torfs (2018).
The statistical principles of the model used to assess the data are outlined in two steps. Firstly, the full model is described, thereafter a description is given of the way the model is implemented for the assessment of the data in WEPAL and Quasimeme.

We assume that each laboratory i submits a result given by a probability density function q_i. We start thus from a set of probability density functions $q_i, i = 1, \dots, N$. We set ourselves to establish the "average" probability density function $\bar{q}$, or in other words, the probability density function $\bar{q}$ that best describes the set.
It is insightful to make at this point an analogy with the calculation the arithmetic mean, of a set of data $a_i, i = 1, \dots, N$. The average $\bar{a}$ can be defined as the point that minimises the sum of the squared Euclidean distances $d(\bar{a}, a_i)$ to the given data. This can be accomplished by equating the first derivative of $\sum_{i=1}^{N} d^2(\bar{a}, a_i) = \sum_{i=1}^{N} (\bar{a} - a_i)^2$ with respect to $\bar{a}$ to zero. One readily finds the well known expression $\bar{a} = \frac{1}{N}\sum_{i=1}^{N} a_i$.
In a similar manner we construct the average probability density function $\bar{q}$ of the set of probability density functions $q_i, i = 1, \dots, N$. We define a measure $d(p, q)$ for the distance between two probability density functions p and q. We obtain $\bar{q}$ by minimising the sum of the square distances from each probability density function q_i to $\bar{q}$, thus by equating the first derivative of $\sum_{i=1}^{n} d(\bar{q}, q_i)^2$ with respect to $\bar{q}$ to zero. The calculation itself is extensive and not given here. The mean and standard deviation of the population are calculated using the first and second moments of the probability density function $\bar{q}$. The variance obtained from the second moment comprises both a within-laboratory and between-laboratory component.

In WEPAL and Quasimeme, laboratories report single data, there is no information about the underlying probability function. To cope with this problem a specific implementation of the model is used: the so-called Normal Distribution Approximation (NDA). The NDA approach is parametrised to reproduce the population characteristics of truly normal distributions, and is a robust method to evaluate interlaboratory studies.
The NDA approach has been devised using a set of normal distributions $q_i = N(\mu_i, \sigma), i = 1, \dots, N$. We assume thus that all normal distributions have the same standard deviation σ. The expected values μ_i are also taken to be normally distributed: $\mu_i = N(\bar{\mu}, S)$. It appears that the mean $\bar{\mu}$ and the standard deviation S of the normal distribution describing the population can be exactly reproduced when $\sigma = 0.78 * S$. In the NDA method, the standard deviation S is calculated directly from the total variance, no distinction between within-laboratory and between-laboratory components is made.

In practice we have N laboratories each reporting a single value. This gives rise to a dataset $x_i, i = 1, \ldots, N$. We calculate the population standard deviation from this dataset using the robust estimate *S=1.4826*MAD* (MAD: median of absolute standard deviations). The normal distributions associated with the data x_i are estimated by $q_i = N(x_i, 0.78S) = N(x_i, 1.16 * MAD)$. We calculate the average probability density function $\overline{q}$ of the set of normal distributions qi as described above. The mean and standard deviation of the interlaboratory study are obtained using the first and second moments of the average probability density function $\overline{q}$.

The NDA-mean (assigned value)

The NDA mean is centered around the highest density of values. Unless otherwise stated, the NDA mean represents the consensus value of *all* data. Although *all* data are included in the assessment, those values that lie some distance from the NDA mean contribute less to the mean than values which occur at or near the mean.
With the NDA model mean and standard deviation are calculated using all reported data when at least 8 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

Traceability of the assigned value

The aim of this proficiency testing scheme is to establish comparability among laboratories. ”Real life” samples are collected, processed and distributed so that the true concentrations of measurands are not known. Assigned values are based on consensus values, obtained from the results of the participants using their routine methods. WEPAL is confident that the assigned values have an acceptable degree of traceability based on the following considerations:

1. The large majority of participants in the programmes have an extensive experience with the analyses and are accredited, implying the use of validated methods, certified reference materials and internal quality control procedures in well equipped, maintained and managed laboratories.
2. The programmes have an international participation, participants use standards that may differ according to country and/or methods that are based on different measurement principles;
3. The data submitted by laboratories are analysed with robust statistics that associates a weighing factor to each individual result. The probability distributions of the raw and analysed data are graphically depicted and carefully examined. Consensus is assumed and an assigned value is established when the probability function of the weighed dataset (in terms of the model the mean pdf of the population of pdfs submitted by the laboratories) is near normal.
4. The fact that consensus is achieved with data from experienced laboratories working with well-developed quality systems that employ a variety of methods is interpreted as evidence that possible biases arising from laboratories and/or methods is averaged out so that the consensus represents a reliable, traceable value. See Thompson (2016, 2018).

Uncertainty of the assigned value

According to ISO 13528: 2015 (Cor. 2016-10), the uncertainty in the assigned value is calculated as:

$u_x = 1.25 * s / \sqrt{N}$

s = robust standard deviation
N = number of results

Depending on the NDA standard deviation calculated and the number of determinations observed, the uncertainty in the assigned value may influence the evaluation of the results (calculated Z-scores). Therefore, the uncertainty is included in the Total Error which is used to evaluate the results from the participating laboratories.

Median and MAD

For each determinand a median value and a median of absolute deviations (MAD) are calculated using all reported data except the reported '<' values. Deviating results like stragglers and outliers are not removed. The median is the middle observation of the sorted observations. In the case of an even number of observations it is the mean of the two middle observations. Using the median instead of mean, extreme data have less influence. MAD is the median of the absolute values of the observations minus their median.

The Z′-score assesment

In this proficiency test the robust standard deviation is used as standard deviation for proficiency assessment. A z′-score is calculated for each determinand which is given an assigned value:

$$z_i' = \frac{(x_i - x_{pt})}{\text{Total Error}}$$

in which:

x_i = the reported value by laboratory i

x_{pt} = the mean of all values calculated with the NDA model

From 2019 onwards, the uncertainty of the assigned value is taken into consideration when calculating the Z-scores. :

$$\text{Total Error} = \sqrt{u_x^2 + s^2}$$

In this formula, u_x represents the uncertainty of the assigned value as given above and s is the robust standard deviation calculated with the NDA method and used as the standard deviation for proficiency assessment.

Evaluation of results

For the evaluation of results the absolute value of the z′-score is used.

Questionable results $2 < |z_i'| < 3$ are marked as stragglers (*).

Deviating results with $|z_i'| > 3$ are marked as outliers (**).

Results reported as 'smaller than' (< or LCV's (left censored values)) are also evaluated. It is not possible to calculate a z′-score for LCV's. A simple quality criterion is used:

NDA-mean - 2* Total Error < LCV < NDA-mean + 6* Total Error : LCV consistent with assigned value.

LCV < NDA-mean - 2* Total Error : inconsistent with assigned value, i.e. LCV reported would have been questionable or unsatisfactory, when reported as a numerical value.

LCV > NDA-mean + 6* Total Error : inconsistent with assigned value, i.e. LCV reported by laboratory much higher than numerical values reported by other laboratories.

LCV key: C – Consistent
I – Inconsistent

Rounding of results

Rounding interval is set to have at least three significant digits for the results. This is based on the value of the mean. If no mean value is available (less than 8 results) the median is used. In cases where between laboratory variation is small (based on the standard deviation) an extra digit is shown. For the statistical results (mean, standard deviation, median and MAD) one extra digit is shown.
Note that larger results are also rounded (e.g. 1809 may be rounded as 1810).

Method Indicating Code (MIC)

In order to evaluate the analytical results for each reported element a Method Indicating Code (MIC) is used. Details of the analytical procedures used by the individual participants are indicated by a number of characters, added at the end of each row with results. With these MIC codes you can easily compare the results obtained by your laboratory with the results from other laboratories using the same method.
An overview of the MIC's per method group is given after the data and statistics.

Materials Analysed

Table 1 *Materials analysed in this period.*

Sample	Sample ID	Type	Origin
1	793	Marine Sediment	Poort Rotterdam, Netherlands
2	796	Soil from polluted area	Rijnmond, Netherlands
3	789	Sediment	De Bilt, Netherlands
4	773	Sediment	Mengsel Krommenie/Hoofddorp, Netherlands
5	793-2	Marine Sediment	Poort Rotterdam, Netherlands
6	758	Sediment	Malburgerhaven, Netherland
7	795	Sediment	Karlsruhe, Germany
8	685	River clay	Winssen, Netherlands
9	785	Sediment	Niet bekend, Netherlands

References and related literature

- Cofino, W.P., I. van Stokkum, D.E. Wells, R.A.L. Peerboom, F. Ariese (2000). A new model for the inference of population characteristics from experimental data using uncertainties. Application to interlaboratory studies. Chemom. Intell. Lab. Syst. 53, 37-55.
- Cofino, W.P., Molenaar, J.. and Torfs, P. (2017) Evaluating Profciency tests with Robust Statistics. Wiley StatsRef: Statistics Reference Online, 1-8.
- Dijk, D. van and V.J.G. Houba (2000). Homogeneity and Stability of Materials Distributed Within the Wageningen Evaluating Programmes for Analytical Laboratories. Commun. Soil Sci. Plant Anal. 31 (11-14), 1745 -1756.
- Dijk, D. van, V.J.G. Houba and J.P.J. van Dalen (1996). Aspects of quality assurance within the Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL). Commun. Soil SCi. Plant Anal. 27, 433 - 439.
- Eurachem (2000). Selection, use and interpretation of proficiency testing (PT) schemes by laboratories. Eurachem Nederland, task group 'proficiency testing schemes' and Laboratory of the Government Chemist (LGC), United Kingdom.
- Feinberg, M., E. Bugner, G. Theiller, V.J.G. Houba and F. Kadijk (1995). Expression of the reference value for proficiency tests. J. Chemometrics 9,197-209.
- Houba, V.J.G. (1993). A device for automatic subsampling of soil, sediment and plant material for proficiency testing. Fresenius J. Anal. Chem. 345, 156 -157.
- Houba, V.J.G., W.J. Chardon and K. Roelse (1993). Influence of grinding of soil on apparent chemical composition. Commun. Soil Sci. Plant Anal. 24, 1591 - 1602.
- Houba, V.J.G., J.J. van der Lee and I. Novozamsky (1996). Evaluating the state-of-the-practice in soil measurements in relation to environmental regulations. Accred. Qual. Assur. 1, 92 - 98.
- Houba, V.J.G. and I. Novozamsky (1998). Influence of storage time and temperature of air-dried soils on pH and extractable nutrients using 0.01 M CaCl2. Fresenius J. Anal. Chem. 360, 362 - 365.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994a). Status and future of soil and plant analysis. Commun. Soil Sci. Plant Anal. 25, 753 - 765.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994b). Standardization and validation of methods of soil and plant analysis as conditions for accreditation. Commun. Soil Sci. Plant Anal. 25, 827 - 841.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1994c). Aspects of pre-treatment of soils for inorganic chemical analysis. QuRmica AnalitRca 13, 94 - 99.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1995). Influence of storage of plant samples on their chemical composition. The Science of the Total Environment 176, 73 - 79.
- Houba, V.J.G., I. Novozamsky and J.J. van der Lee (1996). Quality aspects in laboratories for soil and plant analysis. Commun. Soil Sci. Plant Anal. 27, 327 - 348.
- Houba, V.J.G., J. Uittenbogaard and P. Pellen (1996). Wageningen Evaluating Programmes for Analytical Laboratories (WEPAL), organisation and purpose. Commun. Soil Sci. Plant Anal. 27, 421 - 431.
- ISO/IEC 17043:2010 (E). Conformity assessment – General requirements for proficiency testing.
- ISO 13528: 2105 (Cor.2016-10),IDT Statistical methods for use in proficiency testing by interlaboratory comparison
- [redacted] W. P. Cofino, P.J.J.F. Torfs (2018). Efficient and robust analysis of interlaboratory studies. Chemometrics and Intelligent Laboratory Systems 175, 65-73
- Montfort, M. A.J. van (1996). Statistical remarks on laboratory-evaluating programs for comparing laboratories and methods. Commun. Soil Sci. Plant Anal. 27, 463 - 478.
- Novozamsky, I., V.J.G. Houba, R.Ch. Daniel and the members of CII (1993). Certification of cabbage and carnation samples and their use in an international proficiency study. Fresenius J. Anal. Chem. 345, 198 - 201.
- Sykes, M. and M. Thompson. Assesing the stability of a proficiency test material by participan-blind re-use after a period of storage. Analytical Methods, accepted manuscript royal socienty of chemistry.
- Thompson, M. and R. Wood (1993). The international harmonized protocol for the proficiency testing of (chemical) analytical laboratories. Pure and Appl. Chem. 65, 2123 - 2144.
- Thompson, M. On matrix reference materials characterised by proficiency test. Analytical Methods, accepted manuscript royal socienty of chemistry.

Used abbrevations and symbols

Table 2 *Used abbreviations and symbols*

Where	Abbreviation	Explanation
General information	NDA	Normal Distribution Approximation
General information	u_x	uncertainty
General information, Summary	LCV	left censored values (<)
General information, Results	CV	coëfficient of variation
Summary Statistics	NOBS	number of observations
Results	MIC	method indicating code
Results	MAD	median absolute deviation
Results	Sd	standard deviation
Results, Z-scores	<	value smaller than
Results, Z-scores	C	consistent with assigned value
Results, Z-scores	I	inconsistent with assigned value
Results, Z-scores	*	straggler
Results, Z-scores	**	outlier
Results, Z-scores	-	no result was submitted
Results statistical values	-	not calculated
Z-scores	#	less than 4 results, no mean and Sd calculated
Z-scores	&	no mean and SD calculated
Determinands		
PFBA		perfluorbutaanzuur
PFPeA		perfluorpentaanzuur
PFHxA		perfluorhexaanzuur
PFHpA		perfluorheptaanzuur
PFOA		perfluoroctaanzuur
PFNA		perfluornonaanzuur
PFDA		perfluordecaanzuur
PFUnDA		perfluorundecaanzuur
PFDoDA		perfluordodecaanzuur
PFTrDA		perfluortridecaanzuur
PFTeDA		perfluortetradecaanzuur
PFHxDA		perfluorhexadecaanzuur
PFODA		perfluoroctadecaanzuur
PFBS		perfluorbutaansulfonzuur
PFPeS		perfluorpentaansulfonzuur
PFHxS		perfluorhexaansulfonzuur
PFHpS		perfluorheptaansulfonzuur
PFOS		perfluoroctaansulfonzuur
PFDS		perfluordecaansulfonzuur
4:2 FTS		4:2 fluortelomeer sulfonzuur
6:2 FTS		6:2 fluortelomeer sulfonzuur
8:2 FTS		8:2 fluortelomeer sulfonzuur
10:2 FTS		10:2 fluortelomeer sulfonzuur
MeFOSAA		n-methyl perfluoroctaansulfonamide acetaat
EtFOSAA		n-ethyl perfluoroctaansulfonamide acetaat
PFOSA		perfluoroctaansulfonamide
MeFOSA		n-methyl perfluoroctaansulfonamide
8:2 DiPAP		8:2 fluortelomeer fosfaat diester
HFPO-DA		2,3,3,3-tetrafluor-2-(heptafluorpropoxy) propaanzuur

(Template vs PFAS)

Per- and Polyfluoroalkyl substances Analysis PFAS 2019

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
793										
Inorganic carbon	19.4	g C/kg	4.31	22.2	10	0	19.0	3.2		
Organic carbon	38.5	g C/kg	3.95	10.3	39	0	38.3	1.8		
Mineral oil, GC	461	mg/kg	98.8	21.4	77	0	460	68		
Particles < 2 µm	32.6	%	4.85	14.9	9	0	32.5	3.22		
Particles < 63 µm	72.8	%	12.6	17.3	10	0	71.5	8.1		
Particles > 63 µm		*%*			*7*	*0*	*3.00*	*2.50*		
PFBA		*ug/kg*			*3*	*5*	*0.321*	*0.057*		
PFPeA		*ug/kg*			*3*	*6*	*0.131*	*0.009*		
PFHxA	0.205	ug/kg	0.031	15.2	6	3	0.210	0.024	0.2053	0.0160
PFHpA		*ug/kg*			*3*	*6*	*0.063*	*0.002*		
PFOA (linear)	0.442	ug/kg	0.100	22.6	9	0	0.477	0.067	0.4425	0.0416
PFOA (branched)		*ug/kg*			*1*	*8*	*0.018*			
sum PFOA (0.7 factor)	0.492	ug/kg	0.018	3.6	9	0	0.494	0.014	0.4924	0.0075
PFNA		*ug/kg*			*2*	*7*	*0.066*	*0.002*		
PFDA	0.256	ug/kg	0.041	16.2	9	0	0.252	0.028	0.2562	0.0173
PFUnDA	0.254	ug/kg	0.046	18.0	8	1	0.255	0.030	0.2542	0.0202
PFDoA		*ug/kg*			*7*	*2*	*0.316*	*0.008*	*0.3185*	*0.0047*
PFTrDA	0.144	ug/kg	0.023	15.7	6	2	0.142	0.015	0.1444	0.0116
PFTeDA	0.117	ug/kg	0.004	3.6	6	2	0.119	0.003	0.1174	0.0022
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS	0.100	ug/kg	0.030	30.2	6	3	0.100	0.021	0.0996	0.0154
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*1*	*8*	*0.044*			
PFHpS		*ug/kg*			*1*	*6*	*0.051*			
PFOS (linear)	3.74	ug/kg	0.86	23.0	9	0	3.55	0.57	3.745	0.358
PFOS (branched)	0.365	ug/kg	0.171	46.7	9	0	0.410	0.120	0.3650	0.0711
sum PFOS (0.7 factor)	4.31	ug/kg	1.36	31.6	9	0	3.97	0.96	4.308	0.568
PFDS		*ug/kg*			*1*	*7*	*0.048*			
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS	0.683	ug/kg	0.217	31.8	7	0	0.740	0.157	0.6829	0.1024
8:2 FTS	0.261	ug/kg	0.128	49.2	7	0	0.240	0.083	0.2607	0.0654
10:2 FTS	0.325	ug/kg	0.210	64.8	7	0	0.320	0.150	0.3248	0.0994
N-MeFOSAA	0.216	ug/kg	0.041	19.2	6	1	0.224	0.030	0.2159	0.0211
N-EtFOSAA	0.375	ug/kg	0.165	43.9	7	0	0.397	0.118	0.3755	0.0779
PFOSA		*ug/kg*			*5*	*4*	*0.120*	*0.009*	*0.1141*	*0.0032*
N-MeOSA		*ug/kg*			*0*	*7*				
8:2 diPAP	0.248	ug/kg	0.064	25.9	5	0	0.237	0.053	0.2483	0.0360
HFPO-DA		*ug/kg*			*1*	*5*	*0.031*			

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
796										
Inorganic carbon	3.05	gC/kg	1.49	48.7	15		3.30	1.10		
Organic carbon	72.3	gC/kg	7.99	11.1	61		72.7	5.5		
Mineral oil, GC	66.2	mg/kg	32.5	49.1	112		73.4	23.5		
Particles < 2 µm		*%*			*16*		*15.9*	*6.3*		
Particles < 63 µm	40.8	%	8.1	19.8	16		39.7	5.25		
Particles > 63 µm	51.9	%	11.4	21.9	13		49.7	8.1		
PFBA		*ug/kg*			*1*	*7*	*0.067*			
PFPeA		*ug/kg*			*2*	*7*	*0.128*	*0.002*		
PFHxA		*ug/kg*			*1*	*8*	*0.029*			
PFHpA		*ug/kg*			*2*	*7*	*0.057*	*0.004*		
PFOA (linear)	0.581	ug/kg	0.149	25.7	9	0	0.652	0.108	0.5808	0.0622
PFOA (branched)		*ug/kg*			*1*	*8*	*0.018*			
sum PFOA (0.7 factor)	0.644	ug/kg	0.088	13.6	9	0	0.668	0.058	0.6443	0.0365
PFNA	0.093	ug/kg	0.010	10.3	4	5	0.093	0.007	0.0928	0.0060
PFDA		*ug/kg*			*3*	*6*	*0.067*	*0.008*		
PFUnDA		*ug/kg*			*1*	*8*	*0.025*			
PFDoA		*ug/kg*			*0*	*9*				
PFTrDA		*ug/kg*			*0*	*8*				
PFTeDA		*ug/kg*			*0*	*8*				
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*0*	*9*				
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*2*	*7*	*0.049*	*0.011*		
PFHpS		*ug/kg*			*0*	*7*				
PFOS (linear)	0.747	ug/kg	0.067	9.0	9	0	0.750	0.050	0.7470	0.0280
PFOS (branched)	0.261	ug/kg	0.086	33.0	9	0	0.280	0.060	0.2605	0.0359
sum PFOS (0.7 factor)	0.982	ug/kg	0.273	27.8	9	0	1.000	0.180	0.9817	0.1138
PFDS		*ug/kg*			*0*	*8*				
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*0*	*7*				
8:2 FTS		*ug/kg*			*0*	*7*				
10:2 FTS		*ug/kg*			*0*	*7*				
N-MeFOSAA		*ug/kg*			*0*	*7*				
N-EtFOSAA		*ug/kg*			*1*	*6*	*0.025*			
PFOSA		*ug/kg*			*0*	*9*				
N-MeOSA		*ug/kg*			*0*	*7*				
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
789										
Inorganic carbon	5.47	g/kg	1.74	31.7	10		5.52	1.11		
Organic carbon	113	gC/kg	8.1	7.2	47		112	5.6		
Mineral oil, GC	831	mg/kg	194	23.3	103		851	135		
Particles < 2 µm	30.2	%	9.3	30.9	21		32.0	6.0		
Particles < 63 µm	74.3	%	20.8	28.0	16		73.8	14.8		
Particles > 63 µm	10.1	%	3.7	36.7	14		11.5	2.9		
PFBA	0.219	ug/kg	0.048	22.1	6	2	0.225	0.033	0.2188	0.0247
PFPeA		*ug/kg*			*3*	*6*	*0.250*	*0.042*		
PFHxA	0.142	ug/kg	0.038	26.9	5	4	0.146	0.033	0.1419	0.0213
PFHpA	0.098	ug/kg	0.017	16.9	4	5	0.098	0.012	0.0977	0.0103
PFOA (linear)	0.414	ug/kg	0.103	24.9	9	0	0.450	0.070	0.4139	0.0429
PFOA (branched)		*ug/kg*			*2*	*7*	*0.045*	*0.007*		
sum PFOA (0.7 factor)	0.470	ug/kg	0.087	18.4	9	0	0.490	0.059	0.4703	0.0361
PFNA		*ug/kg*			*2*	*7*	*0.051*	*0.005*		
PFDA	0.138	ug/kg	0.017	12.4	7	2	0.139	0.011	0.1376	0.0080
PFUnDA		*ug/kg*			*2*	*7*	*0.085*	*0.007*		
PFDoA	0.096	ug/kg	0.012	12.8	4	5	0.099	0.011	0.0959	0.0077
PFTrDA		*ug/kg*			*2*	*6*	*0.054*	*0.000*		
PFTeDA		*ug/kg*			*1*	*7*	*0.035*			
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS	0.106	ug/kg	0.026	24.7	5	4	0.100	0.017	0.1061	0.0146
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*3*	*6*	*0.061*	*0.019*		
PFHpS		*ug/kg*			*0*	*7*				
PFOS (linear)	2.29	ug/kg	0.55	24.0	9	0	2.28	0.37	2.293	0.230
PFOS (branched)	0.392	ug/kg	0.188	47.9	9	0	0.378	0.132	0.3919	0.0783
sum PFOS (0.7 factor)	2.80	ug/kg	0.76	27.1	9	0	2.79	0.50	2.797	0.316
PFDS		*ug/kg*			*3*	*5*	*0.068*	*0.013*		
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS	*0.159*	*ug/kg*	*0.032*	*20.1*	*5*	*2*	*0.150*	*0.040*	*0.1593*	*0.0378*
8:2 FTS	0.205	ug/kg	0.061	29.8	5	2	0.210	0.040	0.2055	0.0343
10:2 FTS	0.191	ug/kg	0.103	53.8	6	1	0.181	0.071	0.1908	0.0524
N-MeFOSAA	1.00	ug/kg	0.35	34.6	7	0	1.11	0.24	1.004	0.164
N-EtFOSAA	4.71	ug/kg	1.16	24.6	7	0	4.86	0.74	4.711	0.548
PFOSA	0.178	ug/kg	0.041	23.2	6	3	0.187	0.026	0.1781	0.0211
N-MeOSA		*ug/kg*			*1*	*6*	*0.040*			
8:2 diPAP		*ug/kg*			*2*	*3*	*0.085*	*0.032*		
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
773										
Inorganic carbon	6.11	gC/kg	0.62	10.2	15		6.10	0.45		
Organic carbon	32.4	gC/kg	3.5	10.7	55		32.3	2.4		
Mineral oil, GC	315	mg/kg	122	38.8	108		313	85.5		
Particles < 2 µm	8.19	%	3.99	48.7	14		8.27	2.55		
Particles < 63 µm	22.4	%	5.58	25.0	14		21.7	4.05		
Particles > 63 µm	75.6	%	5.47	7.2	11		74.0	4.0		
PFBA		*ug/kg*			*0*	*8*				
PFPeA		*ug/kg*			*1*	*8*	*0.120*			
PFHxA		*ug/kg*			*0*	*9*				
PFHpA		*ug/kg*			*1*	*8*	*0.020*			
PFOA (linear)	0.221	ug/kg	0.042	18.9	9	0	0.235	0.027	0.2207	0.0174
PFOA (branched)		*ug/kg*			*0*	*9*				
sum PFOA (0.7 factor)	0.251	ug/kg	0.030	11.9	9	0	0.260	0.020	0.2506	0.0125
PFNA		*ug/kg*			*1*	*8*	*0.024*			
PFDA		*ug/kg*			*2*	*7*	*0.048*	*0.005*		
PFUnDA		*ug/kg*			*0*	*9*				
PFDoA		*ug/kg*			*0*	*9*				
PFTrDA		*ug/kg*			*0*	*8*				
PFTeDA		*ug/kg*			*0*	*8*				
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*0*	*9*				
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*1*	*8*	*0.016*			
PFHpS		*ug/kg*			*0*	*7*				
PFOS (linear)	0.512	ug/kg	0.092	18.0	9	0	0.524	0.064	0.5116	0.0383
PFOS (branched)	0.174	ug/kg	0.024	13.8	8	1	0.176	0.016	0.1739	0.0106
sum PFOS (0.7 factor)	0.692	ug/kg	0.175	25.2	9	0	0.697	0.124	0.6924	0.0727
PFDS		*ug/kg*			*0*	*8*				
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*0*	*7*				
8:2 FTS		*ug/kg*			*0*	*7*				
10:2 FTS		*ug/kg*			*0*	*7*				
N-MeFOSAA		*ug/kg*			*1*	*6*	*0.036*			
N-EtFOSAA	0.172	ug/kg	0.085	49.3	6	1	0.147	0.053	0.1719	0.0474
PFOSA		*ug/kg*			*1*	*8*	*0.014*			
N-MeOSA		*ug/kg*			*0*	*7*				
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
793-2										
Inorganic carbon	19.4	g C/kg	4.31	22.2	10	0	19.0	3.2		
Organic carbon	38.5	g C/kg	3.95	10.3	39	0	38.3	1.8		
Mineral oil, GC	461	mg/kg	98.8	21.4	77	0	460	68		
Particles < 2 µm	32.6	%	4.85	14.9	9	0	32.5	3.22		
Particles < 63 µm	72.8	%	12.6	17.3	10	0	71.5	8.1		
Particles > 63 µm		*%*			*7*	*0*	*3.00*	*2.50*		
PFBA	*0.168*	*ug/kg*	*0.126*	*75.0*	*4*	*4*	*0.194*	*0.084*	*0.1681*	*0.0788*
PFPeA		*ug/kg*			*3*	*6*	*0.138*	*0.003*		
PFHxA	0.195	ug/kg	0.028	14.4	6	3	0.200	0.019	0.1954	0.0144
PFHpA		*ug/kg*			*2*	*7*	*0.065*	*0.007*		
PFOA (linear)	0.446	ug/kg	0.112	25.1	9	0	0.470	0.079	0.4457	0.0466
PFOA (branched)		*ug/kg*			*0*	*9*				
sum PFOA (0.7 factor)	0.494	ug/kg	0.056	11.3	9	0	0.500	0.039	0.4940	0.0232
PFNA		*ug/kg*			*2*	*7*	*0.063*	*0.001*		
PFDA	0.264	ug/kg	0.053	20.2	8	1	0.278	0.038	0.2640	0.0235
PFUnDA	0.246	ug/kg	0.049	20.0	8	1	0.246	0.032	0.2459	0.0217
PFDoA	0.316	ug/kg	0.043	13.7	7	2	0.309	0.029	0.3164	0.0205
PFTrDA	0.142	ug/kg	0.039	27.3	6	2	0.141	0.025	0.1419	0.0197
PFTeDA	0.115	ug/kg	0.008	7.5	6	2	0.115	0.005	0.1148	0.0047
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS	0.105	ug/kg	0.046	44.2	5	4	0.110	0.035	0.1046	0.0258
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*3*	*6*	*0.053*	*0.010*		
PFHpS		*ug/kg*			*1*	*6*	*0.068*			
PFOS (linear)	4.27	ug/kg	0.83	19.5	9	0	4.07	0.57	4.270	0.346
PFOS (branched)	0.437	ug/kg	0.268	61.2	9	0	0.430	0.190	0.4372	0.1115
sum PFOS (0.7 factor)	4.82	ug/kg	1.03	21.4	9	0	4.96	0.73	4.816	0.430
PFDS		*ug/kg*			*1*	*7*	*0.038*			
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS	0.702	ug/kg	0.223	31.8	7	0	0.730	0.151	0.7024	0.1055
8:2 FTS	0.285	ug/kg	0.144	50.4	7	0	0.280	0.108	0.2850	0.0733
10:2 FTS	0.357	ug/kg	0.215	60.2	6	1	0.342	0.158	0.3566	0.1096
N-MeFOSAA	0.236	ug/kg	0.054	22.7	6	1	0.244	0.041	0.2362	0.0273
N-EtFOSAA	0.396	ug/kg	0.222	56.1	7	0	0.425	0.159	0.3957	0.1049
PFOSA	0.117	ug/kg	0.009	7.5	5	4	0.119	0.007	0.1170	0.0049
N-MeOSA		*ug/kg*			*1*	*6*	*0.013*			
8:2 diPAP	*0.262*	*ug/kg*	*0.016*	*5.9*	*5*	*0*	*0.257*	*0.013*	*0.2623*	*0.0087*
HFPO-DA		*ug/kg*			*1*	*5*	*0.025*			

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
758										
Inorganic carbon	4.67	gC/kg	1.98	42.4	11		5.40	1.50		
Organic carbon	13.4	gC/kg	2.1	15.6	52		13.6	1.5		
Mineral oil, GC	221	mg/kg	38.5	17.5	120		222	26.7		
Particles < 2 µm	8.42	%	1.46	17.3	15		8.50	1.00		
Particles < 63 µm	29.4	%	4.12	14.0	15		29.4	2.79		
Particles > 63 µm	68.1	%	2.2	3.2	11		67.8	1.70		
PFBA		*ug/kg*			*1*	*7*	*0.100*			
PFPeA		*ug/kg*			*0*	*9*				
PFHxA		*ug/kg*			*2*	*7*	*0.067*	*0.033*		
PFHpA		*ug/kg*			*0*	*9*				
PFOA (linear)	0.167	ug/kg	0.035	20.9	8	1	0.174	0.024	0.1669	0.0154
PFOA (branched)		*ug/kg*			*1*	*8*	*0.025*			
sum PFOA (0.7 factor)	0.203	ug/kg	0.040	19.4	9	0	0.220	0.029	0.2035	0.0165
PFNA		*ug/kg*			*0*	*9*				
PFDA		*ug/kg*			*1*	*8*	*0.037*			
PFUnDA		*ug/kg*			*1*	*8*	*0.036*			
PFDoA		*ug/kg*			*1*	*8*	*0.024*			
PFTrDA		*ug/kg*			*0*	*8*				
PFTeDA		*ug/kg*			*0*	*8*				
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*1*	*8*	*0.033*			
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*0*	*9*				
PFHpS		*ug/kg*			*0*	*7*				
PFOS (linear)	1.09	ug/kg	0.26	23.4	9	0	1.05	0.19	1.092	0.106
PFOS (branched)	0.143	ug/kg	0.032	22.4	6	3	0.135	0.025	0.1430	0.0176
sum PFOS (0.7 factor)	1.21	ug/kg	0.33	27.3	9	0	1.13	0.24	1.211	0.138
PFDS		*ug/kg*			*0*	*8*				
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*1*	*6*	*0.019*			
8:2 FTS		*ug/kg*			*1*	*6*	*0.046*			
10:2 FTS		*ug/kg*			*1*	*6*	*0.049*			
N-MeFOSAA	0.217	ug/kg	0.062	28.4	6	1	0.238	0.043	0.2170	0.0315
N-EtFOSAA	0.579	ug/kg	0.103	17.8	7	0	0.590	0.062	0.5794	0.0486
PFOSA		*ug/kg*			*3*	*6*	*0.080*	*0.013*		
N-MeOSA		*ug/kg*			*1*	*6*	*0.023*			
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
795										
Inorganic carbon	32.5	gC/kg	6.1	18.9	9		33.1	4.5		
Organic carbon	24.0	gC/kg	3.0	12.5	39		24.2	2.1		
Mineral oil, GC	183	mg/kg	35.6	19.4	83		187	24		
Particles < 2 µm	17.3	%	5.9	34.1	12		17.3	4.0		
Particles < 63 µm	70.8	%	8.1	11.4	11		70.1	5.5		
Particles > 63 µm	27.3	%	5.3	19.3	8		27.4	3.61		
PFBA		*ug/kg*			*0*	*8*				
PFPeA		*ug/kg*			*0*	*9*				
PFHxA		*ug/kg*			*3*	*6*	*0.057*	*0.004*		
PFHpA		*ug/kg*			*1*	*8*	*0.038*			
PFOA (linear)	0.229	ug/kg	0.043	19.0	9	0	0.234	0.027	0.2289	0.0181
PFOA (branched)		*ug/kg*			*1*	*8*	*0.028*			
sum PFOA (0.7 factor)	0.273	ug/kg	0.050	18.1	9	0	0.289	0.037	0.2732	0.0206
PFNA		*ug/kg*			*2*	*7*	*0.064*	*0.002*		
PFDA	0.166	ug/kg	0.028	16.6	7	2	0.170	0.014	0.1658	0.0130
PFUnDA	0.187	ug/kg	0.023	12.2	7	2	0.190	0.016	0.1870	0.0108
PFDoA	0.096	ug/kg	0.013	14.0	5	4	0.095	0.008	0.0960	0.0075
PFTrDA		*ug/kg*			*1*	*7*	*0.069*			
PFTeDA		*ug/kg*			*1*	*7*	*0.031*			
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*1*	*8*	*0.056*			
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*1*	*8*	*0.037*			
PFHpS		*ug/kg*			*0*	*7*				
PFOS (linear)	2.77	ug/kg	0.59	21.2	9	0	2.69	0.39	2.769	0.245
PFOS (branched)	0.327	ug/kg	0.080	24.4	8	1	0.325	0.053	0.3273	0.0354
sum PFOS (0.7 factor)	2.96	ug/kg	0.81	27.2	9	0	2.90	0.53	2.964	0.336
PFDS		*ug/kg*			*1*	*7*	*0.029*			
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*2*	*5*	*0.094*	*0.046*		
8:2 FTS	0.129	ug/kg	0.012	9.5	6	1	0.135	0.012	0.1286	0.0063
10:2 FTS	0.185	ug/kg	0.071	38.3	5	2	0.200	0.050	0.1850	0.0396
N-MeFOSAA	0.944	ug/kg	0.479	50.7	7	0	0.954	0.341	0.9444	0.2263
N-EtFOSAA	1.02	ug/kg	0.51	49.8	7	0	1.07	0.36	1.020	0.240
PFOSA	*0.095*	*ug/kg*	*0.018*	*18.6*	*4*	*5*	*0.101*	*0.013*	*0.0951*	*0.0210*
N-MeOSA		*ug/kg*			*1*	*6*	*0.070*			
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
685										
Inorganic carbon		*g/kg*			*3*		*11.2*	*1.33*		
Organic carbon	51.4	g/kg	4.5	8.7	14		51.8	3.0		
Mineral oil, GC	525	mg/kg	113	21.6	21		511	78.1		
Particles < 2 µm		*%*			*3*		*25.0*	*6.4*		
Particles < 63 µm		*%*			*4*		*68.8*	*6.0*		
Particles > 63 µm		*%*			*2*		*4.21*	*0.21*		
PFBA		*ug/kg*			*2*	*6*	*0.120*	*0.050*		
PFPeA		*ug/kg*			*2*	*7*	*0.095*	*0.021*		
PFHxA	0.112	ug/kg	0.023	20.1	5	4	0.120	0.020	0.1123	0.0126
PFHpA	0.124	ug/kg	0.018	14.5	6	3	0.131	0.014	0.1237	0.0091
PFOA (linear)	0.825	ug/kg	0.198	24.0	9	0	0.795	0.136	0.8251	0.0827
PFOA (branched)		*ug/kg*			*1*	*8*	*0.051*			
sum PFOA (0.7 factor)	0.865	ug/kg	0.190	22.0	9	0	0.845	0.137	0.8654	0.0793
PFNA	0.222	ug/kg	0.026	11.6	7	2	0.221	0.019	0.2218	0.0122
PFDA	0.417	ug/kg	0.098	23.6	9	0	0.434	0.066	0.4167	0.0410
PFUnDA	0.211	ug/kg	0.053	25.0	7	2	0.210	0.040	0.2113	0.0250
PFDoA	0.141	ug/kg	0.012	8.5	6	3	0.142	0.005	0.1405	0.0061
PFTrDA	0.143	ug/kg	0.022	15.4	5	3	0.150	0.010	0.1435	0.0123
PFTeDA		*ug/kg*			*2*	*6*	*0.056*	*0.001*		
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*1*	*8*	*0.045*			
PFPeS		*ug/kg*			*0*	*7*				
PFHxS	0.143	ug/kg	0.005	3.4	7	2	0.144	0.006	0.1429	0.0023
PFHpS	0.142	ug/kg	0.050	35.1	4	3	0.144	0.035	0.1422	0.0312
PFOS (linear)	28.9	ug/kg	5.4	18.6	9	0	28.4	3.6	28.89	2.24
PFOS (branched)	3.10	ug/kg	0.60	19.3	9	0	3.10	0.41	3.098	0.249
sum PFOS (0.7 factor)	30.8	ug/kg	8.3	26.8	9	0	30.4	5.5	30.84	3.45
PFDS		*ug/kg*			*2*	*6*	*0.074*	*0.036*		
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*0*	*7*				
8:2 FTS		*ug/kg*			*0*	*7*				
10:2 FTS		*ug/kg*			*0*	*7*				
N-MeFOSAA		*ug/kg*			*2*	*5*	*0.051*	*0.014*		
N-EtFOSAA	0.527	ug/kg	0.264	50.1	7	0	0.451	0.171	0.5274	0.1249
PFOSA	0.220	ug/kg	0.060	27.4	6	3	0.226	0.040	0.2196	0.0307
N-MeOSA		*ug/kg*			*0*	*7*				
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Summary Statistics

Sample/ Determinand	Assigned Value	Units	NDA st.dev	NDA rel. st.dev (%)	Nobs numerical	Nobs LCV	Median	MAD	Model Mean	Uncer-tainty
785										
Inorganic carbon	12.7	g/kg	2.3	17.7	15		12.5	1.5		
Organic carbon	65.8	g/kg	4.9	7.4	55		65.2	3.5		
Mineral oil, GC	779	mg/kg	168	21.5	107		799	114		
Particles < 2 µm	31.5	%	11.4	36.2	11		31.2	8.1		
Particles < 63 µm	75.3	%	13.6	18.0	11		70.0	9.1		
Particles > 63 µm	11.4	%	2.7	23.7	8		12.5	2.17		
PFBA	0.234	ug/kg	0.079	33.9	7	1	0.239	0.056	0.2337	0.0374
PFPeA		*ug/kg*			*2*	*7*	*0.151*	*0.009*		
PFHxA		*ug/kg*			*2*	*7*	*0.115*	*0.045*		
PFHpA		*ug/kg*			*2*	*7*	*0.051*	*0.001*		
PFOA (linear)	0.687	ug/kg	0.149	21.7	9	0	0.710	0.096	0.6866	0.0620
PFOA (branched)	0.107	ug/kg	0.010	9.4	4	4	0.106	0.006	0.1067	0.0063
sum PFOA (0.7 factor)	0.817	ug/kg	0.084	10.2	9	0	0.810	0.060	0.8174	0.0348
PFNA		*ug/kg*			*0*	*9*				
PFDA		*ug/kg*			*2*	*7*	*0.044*	*0.009*		
PFUnDA		*ug/kg*			*1*	*8*	*0.024*			
PFDoA		*ug/kg*			*1*	*8*	*0.033*			
PFTrDA		*ug/kg*			*1*	*7*	*0.019*			
PFTeDA		*ug/kg*			*0*	*8*				
PFHxDA		*ug/kg*			*0*	*7*				
PFODA		*ug/kg*			*0*	*7*				
PFBS		*ug/kg*			*2*	*7*	*0.189*	*0.049*		
PFPeS		*ug/kg*			*0*	*7*				
PFHxS		*ug/kg*			*1*	*8*	*0.023*			
PFHpS		*ug/kg*			*1*	*6*	*0.038*			
PFOS (linear)	2.04	ug/kg	0.58	28.4	9	0	2.04	0.40	2.045	0.242
PFOS (branched)	0.343	ug/kg	0.144	41.9	9	0	0.355	0.105	0.3430	0.0598
sum PFOS (0.7 factor)	2.32	ug/kg	1.01	43.3	9	0	2.40	0.73	2.321	0.419
PFDS		*ug/kg*			*1*	*7*	*0.033*			
4:2 FTS		*ug/kg*			*0*	*7*				
6:2 FTS		*ug/kg*			*0*	*7*				
8:2 FTS		*ug/kg*			*0*	*7*				
10:2 FTS		*ug/kg*			*1*	*6*	*0.034*			
N-MeFOSAA	0.380	ug/kg	0.110	29.0	7	0	0.359	0.069	0.3800	0.0520
N-EtFOSAA	6.02	ug/kg	1.65	27.4	7	0	6.30	1.10	6.016	0.779
PFOSA	0.215	ug/kg	0.050	23.2	6	3	0.219	0.033	0.2150	0.0254
N-MeOSA		*ug/kg*			*2*	*5*	*0.052*	*0.002*		
8:2 diPAP		*ug/kg*			*0*	*5*				
HFPO-DA		*ug/kg*			*0*	*6*				

Per- and Polyfluoroalkyl substances Data and Statistics

PFBA (ug/kg) – *mean values*

Sample	793	796	789	773	793	758	MIC
PFAS1	0.073	0.067	0.174	0.100 <	0.069	0.100 <	G|MB| -|LA
PFAS10	0.200 <	0.200 <	0.300 <	0.100 <	0.200 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.210	0.100 <	0.150	0.100	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.210	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.321	0.100 <	0.854	0.100 <	0.238	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.378	0.100 <	0.239	0.100 <	0.505	0.100 <	C|HB|EB|LC
PFAS9	0.250 <	0.250 <	0.290	0.250 <	0.250 <	0.250 <	H|AC|EB|LD
			Statistical Results				
NDA mean	-	-	0.2188	-	0.1681	-	
NDA st dev	-	-	0.0484	-	0.1261	-	
Coeff Var (%)	-	-	22.1	-	75.0	-	
N	3	1	6	-	4	1	
Median	0.3210	0.0674	0.2247	-	0.1940	0.1000	
MAD	0.0569	-	0.0327	-	0.0845	-	
Total Error	-	-	0.0543	-	0.1487	-	

Sample	795	685	785	MIC
PFAS1	0.100 <	0.070	0.183	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.303	J|MB| -|LA
PFAS2	0.100 <	0.170	0.130	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.220	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.361	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.100 <	0.100 <	0.239	C|HB|EB|LC
PFAS9	0.250 <	0.250 <	0.240	H|AC|EB|LD
		Statistical Results		
NDA mean	-	-	0.2337	
NDA st dev	-	-	0.0792	
Coeff Var (%)	-	-	33.9	
N	-	2	7	
Median	-	0.1200	0.2388	
MAD	-	0.0500	0.0556	
Total Error	-	-	0.0876	

PFBA (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793	758
PFAS1	0.002	0.001	0.006	- <	0.004	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	0.040	- <	0.010	0.030
PFAS3	- <	- <	0.010	- <	- <	- <
PFAS4	0.028	- <	0.255	- <	0.074	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	0.174	- <	0.131	- <	0.054	- <
PFAS9	- <	- <	0.040	- <	- <	- <
			Statistical Results			
N	3	1	6	-	4	1
σ_r	-	-	0.031	-	0.025	-
σ_L	-	-	0.043	-	0.125	-
σ_R	-	-	0.053	-	0.127	-

(cont.)

PFBA (ug/kg) absolute differences duplicate (cont.)

Sample	795	685	785
PFAS1	- <	0.008	0.011
PFAS10	- <	- <	0.009
PFAS2	- <	0.090	0.040
PFAS3	- <	- <	0.010
PFAS4	- <	- <	0.049
PFAS5	- <	- <	- <
PFAS7	- <	- <	0.047
PFAS9	- <	- <	0.000
	Statistical Results		
N	-	2	7
σ_r	-	-	0.014
σ_L	-	-	0.079
σ_R	-	-	0.080

PFPeA (ug/kg)- *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.087	0.127	0.100 <	0.100 <	0.090	0.100 <	G|MB| -|LA
PFAS10	0.200 <	0.100 <	0.200 <	0.100 <	0.200 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.110	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.131	0.100 <	0.292	0.100 <	0.138	0.100 <	C|HB|EB|LC
PFAS9	0.140	0.130	0.250	0.120	0.140	0.100 <	H|AC|EB|LD
	Statistical Results (no NDA)						
N	3	2	3	1	3	-	
Median	0.1308	0.1284	0.2500	0.1200	0.1375	-	
MAD	0.0092	0.0017	0.0417	-	0.0025	-	

Sample	795	685	785
PFAS1	0.100 <	0.075	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.100 <	0.116	0.142
PFAS9	0.100 <	0.100 <	0.160
	Statistical Results (no NDA)		
N	-	2	2
Median	-	0.0952	0.1508
MAD	-	0.0205	0.0092

PFPeA (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	0.002	0.011	- <	- <	0.008	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	0.010	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.046	- <	0.090	- <	0.038	- <
PFAS9	0.010	0.000	0.020	0.050 <	-	- <
	no Statistical Results					
N	3	2	3	-	3	-

(cont.)

PFPeA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795		685		785	
PFAS1	0.041	<	0.012		-	<
PFAS10	-	<	-	<	-	<
PFAS2	-	<	-	<	-	<
PFAS3	-	<	-	<	-	<
PFAS4	-	<	-	<	-	<
PFAS5	-	<	-	<	-	<
PFAS6	-	<	-	<	-	<
PFAS7	-	<	-	<	0.023	
PFAS9	-	<	-	<	0.010	
	==========		no Statistical Results		==========	
N	-		1		2	

PFHxA (ug/kg) *mean values*

Sample	793		796		789		773		793-2		758		MIC
PFAS1	0.186		0.100	<	0.146		0.100	<	0.178		0.100	<	G|MB| -|LA
PFAS10	0.209		0.100	<	0.113		0.100	<	0.183		0.100	<	J|MB| -|LA
PFAS2	0.210		0.100	<	0.140		0.100	<	0.190		0.100	<	D|AA|EB|LA
PFAS3	0.240		0.100	<	0.180		0.100	<	0.250		0.100	<	E|AA|EB|LA
PFAS4	0.100	<	0.100	<	0.100	<	0.100	<	0.100	<	0.100	<	A|MA| -|LB
PFAS5	0.100	<	0.100	<	0.100	<	0.100	<	0.100	<	0.100	<	E|MB|NC|LB
PFAS6	0.500	<	0.500	<	0.500	<	0.500	<	0.500	<	0.500	<	A|AB|EB|LA
PFAS7	0.186		0.029		0.020	<	0.020	<	0.209		0.034		C|HB|EB|LC
PFAS9	0.330		0.100	<	0.310		0.100	<	0.300		0.100		H|AC|EB|LD
	==========				Statistical Results				==========				
NDA mean	0.2053		-		0.1419		-		0.1954		-		
NDA st dev	0.0313		-		0.0382		-		0.0282		-		
Coeff Var (%)	15.2		-		26.9		-		14.4		-		
N	6		1		5		-		6		2		
Median	0.2095		0.0289		0.1455		-		0.1996		0.0668		
MAD	0.0236		-		0.0327		-		0.0192		0.0332		
Total Error	0.0351		-		0.0437		-		0.0316		-		

Sample	795		685		785	
PFAS1	0.057		0.093		0.100	<
PFAS10	0.100	<	0.100	<	0.100	<
PFAS2	0.100	<	0.120		0.100	<
PFAS3	0.100	<	0.140		0.100	<
PFAS4	0.100	<	0.100	<	0.100	<
PFAS5	0.100	<	0.100	<	0.100	<
PFAS6	0.500	<	0.500	<	0.500	<
PFAS7	0.053		0.103		0.069	
PFAS9	0.120		0.270		0.160	
	==========		Statistical Results		==========	
NDA mean	-		0.1123		-	
NDA st dev	-		0.0226		-	
Coeff Var (%)	-		20.1		-	
N	3		5		2	
Median	0.0569		0.1200		0.1146	
MAD	0.0042		0.0200		0.0454	
Total Error	-		0.0259		-	

(cont.)

PFHxA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	0.024	- <	0.004	- <	0.009	- <
PFAS10	0.011	- <	0.009	- <	0.004	- <
PFAS2	0.000	- <	0.010	- <	0.040	- <
PFAS3	0.020	- <	0.010	- <	0.020	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.022	0.000	- <	- <	0.000	0.003
PFAS9	0.140	- <	0.040	- <	0.020	-
Statistical Results						
N	6	1	5	-	6	2
σ_r	0.007	-	0.001	-	0.008	-
σ_L	0.031	-	0.038	-	0.028	-
σ_R	0.032	-	0.038	-	0.029	-

Sample	795	685	785
PFAS1	0.004 <	0.006	- <
PFAS10	- <	- <	- <
PFAS2	- <	0.000	- <
PFAS3	- <	0.010	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS6	- <	- <	- <
PFAS7	0.004	0.005	0.011
PFAS9	0.000	0.070	0.030
Statistical Results			
N	3	5	2
σ_r	-	0.004	-
σ_L	-	0.022	-
σ_R	-	0.023	-

PFHpA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.061	0.053	0.084	0.100 <	0.057	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 < C	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 < C	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.110	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 < C	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 < C	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 < I	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.063	0.061	0.087	0.020	0.072	0.020 <	C|HB|EB|LC
PFAS9	0.100	0.100 <	0.110	0.100 <	0.100 <	0.100 <	H|AC|EB|LD
Statistical results							
NDA mean	-	-	0.0977	-	-	-	
NDA st dev	-	-	0.0165	-	-	-	
Coeff Var (%)	-	-	16.9	-	-	-	
N	3	2	4	1	2	-	
Median	0.0630	0.0572	0.0984	0.0200	0.0645	-	
MAD	0.0019	0.0038	0.0117	-	0.0074	-	
Total Error	-	-	0.0195	-	-	-	

(cont.)

PFHpA (ug/kg) ***mean values*** (cont.)

Sample	**795**		**685**		**785**	
PFAS1	0.100	<	0.111		0.052	
PFAS10	0.100	<	0.100		0.100	<
PFAS2	0.100	<	0.130		0.100	<
PFAS3	0.100	<	0.170		0.100	<
PFAS4	0.100	<	0.100	<	0.100	<
PFAS5	0.100	<	0.100	<	0.100	<
PFAS6	0.500	<	0.500	<	0.500	<
PFAS7	0.038		0.131		0.050	
PFAS9	0.100	<	0.140		0.100	<

Statistical Results

NDA mean	-	0.1237	-
NDA st dev	-	0.0179	-
Coeff Var (%)	-	14.5	-
N	1	6	2
Median	0.0376	0.1307	0.0513
MAD	-	0.0144	0.0009
Total Error	-	0.0201	-

PFHpA (ug/kg) ***absolute differences duplicate***

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFAS1	0.002	0.005	0.000	- <	0.001	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	0.000	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.008	0.005	0.006	0.007	0.000	- <
PFAS9	- <	- <	0.000	- <	- <	- <

Statistical Results

N	2	2	4	1	2	-
σ_r	-	-	0.003	-	-	-
σ_L	-	-	0.016	-	-	-
σ_R	-	-	0.017	-	-	-

Sample	**795**		**685**		**785**	
PFAS1	-	<	0.014		0.002	
PFAS10	-	<	0.008		-	<
PFAS2	-	<	0.010		-	<
PFAS3	-	<	0.010		-	<
PFAS4	-	<	-	<	-	<
PFAS5	-	<	-	<	-	<
PFAS6	-	<	-	<	-	<
PFAS7	0.006		0.005		0.004	
PFAS9	-	<	0.010		-	<

Statistical Results

N	1	6	2
σ_r	-	0.004	-
σ_L	-	0.018	-
σ_R	-	0.018	-

Per- and Polyfluoroalkyl substances Data and Statistics

PFOA (linear) (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.484	0.652	0.453	0.235	0.470	0.170	G|MB| -|LA
PFAS10	0.414	0.544	0.362	0.207	0.391	0.150	J|MB| -|LA
PFAS2	0.410	0.540	0.400	0.210	0.430	0.150	D|AA|EB|LA
PFAS3	0.560	0.690	0.520	0.280	0.550	0.230	E|AA|EB|LA
PFAS4	0.238	0.358	0.196	0.150	0.178 *	0.100 < C	A|MA| -|LB
PFAS5	0.270	0.410	0.270	0.140	0.310	0.110	E|MB|NC|LB
PFAS6	0.990 **	1.17 **	0.810 **	0.580 **	0.890 **	0.440 **	A|AB|EB|LA
PFAS7	0.477	0.654	0.460	0.235	0.493	0.178	C|HB|EB|LC
PFAS9	0.480	0.660	0.450	0.240	0.500	0.190	H|AC|EB|LD

Statistical Results

NDA mean	0.4425	0.5808	0.4139	0.2207	0.4457	0.1669
NDA st dev	0.0999	0.1492	0.1030	0.0417	0.1117	0.0348
Coeff Var (%)	22.6	25.7	24.9	18.9	25.1	20.9
N	9	9	9	9	9	8
Median	0.4769	0.6519	0.4500	0.2348	0.4698	0.1738
MAD	0.0669	0.1076	0.0700	0.0274	0.0788	0.0239
Total Error	0.1083	0.1617	0.1115	0.0452	0.1210	0.0380

Sample	795	685	785
PFAS1	0.234	0.795	0.731
PFAS10	0.209	0.775	0.614
PFAS2	0.230	0.760	0.680
PFAS3	0.320	0.980	0.880
PFAS4	0.167	0.297 *	0.379
PFAS5	0.160	0.550	0.440
PFAS6	0.570 **	1.33 *	1.11 *
PFAS7	0.261	0.931	0.733
PFAS9	0.260	0.890	0.710

Statistical Results

NDA mean	0.2289	0.8251	0.6866
NDA st dev	0.0434	0.1984	0.1488
Coeff Var (%)	19.0	24.0	21.7
N	9	9	9
Median	0.2340	0.7950	0.7100
MAD	0.0269	0.1360	0.0958
Total Error	0.0470	0.2150	0.1612

PFOA (linear) (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.000	0.118	0.038	0.020	0.001	0.013
PFAS10	0.009	0.007	0.011	0.029	0.013	0.001
PFAS2	0.010	0.030	0.020	0.020	0.030	0.040
PFAS3	0.040	0.010	0.050	0.010	0.010	0.010
PFAS4	0.066	0.003	0.081	0.002	0.039	- <
PFAS5	0.000	0.000	0.010	0.020	0.030	0.010
PFAS6	0.000	0.120	0.120	0.070	0.190	0.070
PFAS7	0.014	0.045	0.048	0.029	0.002	0.008
PFAS9	0.010	0.030	0.030	0.000	0.030	0.010

Statistical Results

N	9	9	9	9	9	8
σ_r	0.009	0.021	0.018	0.009	0.015	0.002
σ_L	0.104	0.148	0.102	0.041	0.107	0.034
σ_R	0.104	0.150	0.103	0.042	0.108	0.034

(cont.)

PFOA (linear) (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	**795**	**685**	**785**
PFAS1	0.014	0.039	0.075
PFAS10	0.006	0.001	0.009
PFAS2	0.020	0.040	0.036
PFAS3	0.030	0.030	0.020
PFAS4	0.061	0.058	0.023
PFAS5	0.002	0.030	0.021
PFAS6	0.140	0.250	0.190
PFAS7	0.007	0.057	0.040
PFAS9	0.008	0.010	0.040
Statistical Results			
N	9	9	9
σ_r	0.013	0.006	0.017
σ_L	0.042	0.198	0.149
σ_R	0.044	0.198	0.150

PFOA (branched) (ug/kg) *mean values*

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**	**MIC**
PFAS1	0.100 <	0.100 <	0.052	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.018	0.018	0.038	0.020 <	0.020 <	0.025	C|HB|EB|LC
PFAS9	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	H|AC|EB|LD
Statistical Results (no NDA)							
N	1	1	2	-	-	1	
Median	0.0175	0.0180	0.0451	-	-	0.0249	
MAD	-	-	0.0071	-	-	-	

Sample	**795**	**685**	**785**
PFAS1	0.100 <	0.100 <	0.106
PFAS10	0.100 <	0.100 <	0.165
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.028	0.051	0.115
PFAS9	0.100 <	0.100 <	0.100
Statistical Results			
NDA mean	-	-	0.1067
NDA st dev	-	-	0.0100
Coeff Var (%)	-	-	9.4
N	1	1	5
Median	0.0280	0.0506	0.1055
MAD	-	-	0.0055
Total Error	-	-	0.0118

(cont.)

PFOA (branched) (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	- <	- <	- <	- <	- <	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	- <	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.006	0.008	0.011	- <	- <	0.001
PFAS9	- <	- <	- <	- <	- <	- <
	==========	no Statistical Results	==========			
N	1	1	1	-	-	1

Sample	795	685	785
PFAS1	- <	- <	0.019
PFAS10	- <	- <	0.004
PFAS2	- <	- <	- <
PFAS3	- <	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS6	- <	- <	- <
PFAS7	0.000	0.002	0.009
PFAS9	- <	- <	0.000
	==========	Statistical Results	==========
N	1	1	4
σ_r	-	-	0.005
σ_L	-	-	0.009
σ_R	-	-	0.011

sum PFOA (0.7 factor) (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.503	0.668	0.500	0.242	0.488	0.191	G|MB| -|LA
PFAS10	0.484	0.614	0.431	0.277	0.461	0.220	J|MB| -|LA
PFAS2	0.480	0.610	0.470	0.280	0.500	0.220	D|AA|EB|LA
PFAS3	0.630 **	0.760	0.590	0.350 **	0.620 *	0.300 *	E|AA|EB|LA
PFAS4	0.308 **	0.428 *	0.266 *	0.220	0.248 **	0.140	A|MA| -|LB
PFAS5	0.340 **	0.480	0.340	0.210	0.380	0.180	E|MB|NC|LB
PFAS6	1.34 **	1.52 **	1.16 **	0.930 **	1.24 **	0.790 **	A|AB|EB|LA
PFAS7	0.494	0.672	0.498	0.249	0.507	0.203	C|HB|EB|LC
PFAS9	0.500	0.680	0.490	0.260	0.520	0.220	H|AC|EB|LD
	==========	Statistical Results	==========				
NDA mean	0.4924	0.6443	0.4703	0.2506	0.4940	0.2035	
NDA st dev	0.0179	0.0875	0.0867	0.0299	0.0557	0.0395	
Coeff Var (%)	3.6	13.6	18.4	11.9	11.3	19.4	
N	9	9	9	9	9	9	
Median	0.4944	0.6680	0.4900	0.2600	0.5000	0.2195	
MAD	0.0144	0.0580	0.0590	0.0200	0.0390	0.0287	
Total Error	0.0194	0.0948	0.0939	0.0324	0.0604	0.0428	

========== (cont.)

sum PFOA (0.7 factor) (ug/kg) ***mean values*** (cont.)

Sample	**795**		**685**		**785**	
PFAS1	0.252		0.840		0.836	
PFAS10	0.279		0.845		0.779	
PFAS2	0.300		0.830		0.750	
PFAS3	0.390	*	1.05		0.950	
PFAS4	0.237		0.367	*	0.449	**
PFAS5	0.230		0.620		0.520	**
PFAS6	0.920	**	1.68	**	1.46	**
PFAS7	0.289		0.982		0.848	
PFAS9	0.290		0.920		0.810	
	==========		Statistical Results		==========	
NDA mean	0.2732		0.8654		0.8174	
NDA st dev	0.0495		0.1904		0.0836	
Coeff Var (%)	18.1		22.0		10.2	
N	9		9		9	
Median	0.2889		0.8448		0.8100	
MAD	0.0370		0.1368		0.0600	
Total Error	0.0536		0.2063		0.0906	

sum PFOA (0.7 factor) (ug/kg) ***absolute differences duplicate***

Sample	**793**	**796**		**789**	**773**	**793-2**	**758**
PFAS1	0.007	0.119		0.049	0.014	0.008	0.026
PFAS10	0.009	0.007		0.012	0.029	0.013	0.001
PFAS2	0.010	0.030		0.020	0.020	0.030	0.040
PFAS3	0.040	0.010		0.050	0.010	0.010	0.010
PFAS4	0.066	0.003		0.081	0.002	0.039	0.000
PFAS5	0.000	0.000		0.010	0.020	0.030	0.010
PFAS6	0.000	0.110	*	0.120	0.070	0.190	0.070
PFAS7	0.020	0.053		0.059	0.029	0.002	0.009
PFAS9	0.000	0.030		0.020	0.010	0.030	0.010
	==========			Statistical Results		==========	
N	9	9		9	9	9	9
σ_r	0.008	0.023		0.028	0.008	0.015	0.009
σ_L	0.023	0.092		0.084	0.035	0.047	0.034
σ_R	0.024	0.095		0.089	0.036	0.049	0.035

Sample	**795**	**685**	**785**
PFAS1	0.007	0.008	0.094
PFAS10	0.007	0.063	0.019
PFAS2	0.020	0.013	0.030
PFAS3	0.030	0.032	0.020
PFAS4	0.061	0.044	0.023
PFAS5	0.010	0.002	0.040
PFAS6	0.140	0.250	0.190
PFAS7	0.011	0.045	0.035
PFAS9	0.008	0.004	0.040
	==========	Statistical Results	==========
N	9	9	9
σ_r	0.007	0.005	0.011
σ_L	0.049	0.190	0.091
σ_R	0.050	0.190	0.092

Per- and Polyfluoroalkyl substances Data and Statistics

PFNA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.068	0.084	0.056	0.100 <	0.061	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.064	0.087	0.046	0.024	0.064	0.020 <	C|HB|EB|LC
PFAS9	0.100 <	0.100	0.100 <	0.100 <	0.100 <	0.100 <	H|AC|EB|LD
	==========	Statistical Results	==========				
NDA mean	-	0.0928	-	-	-	-	
NDA st dev	-	0.0096	-	-	-	-	
Coeff Var (%)	-	10.3	-	-	-	-	
N	2	4	2	1	2	-	
Median	0.0659	0.0933	0.0506	0.0236	0.0627	-	
MAD	0.0021	0.0067	0.0050	-	0.0014	-	
Total Error	-	0.0113	-	-	-	-	

Sample	795	685	785
PFAS1	0.065	0.238	0.100 <
PFAS10	0.100 <	0.207	0.100 <
PFAS2	0.100 <	0.200	0.100 <
PFAS3	0.100 <	0.280	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.150	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.062	0.221	0.020 <
PFAS9	0.100 <	0.240	0.100 <
	==========	Statistical Results	==========
NDA mean	-	0.2218	-
NDA st dev	-	0.0258	-
Coeff Var (%)	-	11.6	-
N	2	7	-
Median	0.0637	0.2208	-
MAD	0.0017	0.0192	-
Total Error	-	0.0285	-

PFNA (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.006	0.008	- <	- <	0.010	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	0.000	- <	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.005	0.021	0.002	0.005	0.003	- <
PFAS9	- <	0.000	- <	- <	- <	- <
	==========	Statistical Results	==========			
N	2	4	1	1	2	-
σ_r	-	0.004	-	-	-	-
σ_L	-	0.009	-	-	-	-
σ_R	-	0.010	-	-	-	-

(cont.)

PFNA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	0.019	0.021	- <
PFAS10	- <	0.015	- <
PFAS2	- <	0.020	- <
PFAS3	- <	0.005	- <
PFAS4	- <	- <	- <
PFAS5	- <	0.012	- <
PFAS6	- <	- <	- <
PFAS7	0.003	0.019	- <
PFAS9	- <	0.030	- <
Statistical Results			
N	2	7	-
σ_r	-	0.010	-
σ_L	-	0.025	-
σ_R	-	0.027	-

PFDA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.269	0.059	0.139	0.053	0.280	0.100 <	G|MB| -|LA
PFAS10	0.252	0.100 <	0.129	0.100 <	0.244	0.100 <	J|MB| -|LA
PFAS2	0.240	0.100 <	0.110	0.100 <	0.220	0.100 <	D|AA|EB|LA
PFAS3	0.330	0.100 <	0.160	0.100 <	0.320	0.100 <	E|AA|EB|LA
PFAS4	0.106 **	0.100 <	0.100 <	0.100 <	0.100 < I	0.100 <	A|MA| -|LB
PFAS5	0.170	0.100 <	0.120	0.100 <	0.170	0.100 <	E|MB|NC|LB
PFAS6	0.540 **	0.500 <	0.500 <	0.500 <	0.530 **	0.500 <	A|AB|EB|LA
PFAS7	0.280	0.067	0.144	0.043	0.276	0.037	C|HB|EB|LC
PFAS9	0.240	0.100	0.150	0.100 <	0.290	0.100 <	H|AC|EB|LD
Statistical Results							
NDA mean	0.2562	-	0.1376	-	0.2640	-	
NDA st dev	0.0414	-	0.0170	-	0.0532	-	
Coeff Var (%)	16.2	-	12.4	-	20.2	-	
N	9	3	7	2	8	1	
Median	0.2524	0.0669	0.1391	0.0478	0.2781	0.0366	
MAD	0.0280	0.0075	0.0109	0.0051	0.0379	-	
Total Error	0.0449	-	0.0188	-	0.0582	-	

Sample	795	685	785
PFAS1	0.184	0.462	0.053
PFAS10	0.156	0.434	0.100 <
PFAS2	0.140	0.350	0.100 <
PFAS3	0.200	0.500	0.100 <
PFAS4	0.100 <	0.190 *	0.100 <
PFAS5	0.140	0.270	0.100 <
PFAS6	0.500 <	0.770 **	0.500 <
PFAS7	0.180	0.472	0.035
PFAS9	0.170	0.410	0.100 <
Statistical Results			
NDA mean	0.1658	0.4167	-
NDA st dev	0.0275	0.0983	-
Coeff Var (%)	16.6	23.6	-
N	7	9	2
Median	0.1700	0.4340	0.0436
MAD	0.0144	0.0660	0.0090
Total Error	0.0304	0.1065	-

(cont.)

PFDA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	0.004	0.006	0.009	- <	0.023	- <
PFAS10	0.002	- <	0.006	- <	0.009	- <
PFAS2	0.050	- <	0.010	- <	0.000	- <
PFAS3	0.010	- <	0.000	- <	0.010	- <
PFAS4	0.013	- <	- <	- <	- <	- <
PFAS5	0.000	- <	0.000	- <	0.020	- <
PFAS6	0.040	- <	- <	- <	0.080	- <
PFAS7	0.013	0.008	0.006	0.002	0.004	0.000
PFAS9	0.020	- <	0.000	- <	0.040	- <
Statistical Results						
N	9	2	7	1	8	1
σ_r	0.009	-	0.004	-	0.009	-
σ_L	0.041	-	0.017	-	0.050	-
σ_R	0.042	-	0.017	-	0.051	-

Sample	795	685	785
PFAS1	0.024	0.055	- <
PFAS10	0.002	0.021	- <
PFAS2	0.020	0.020	- <
PFAS3	0.000	0.030	- <
PFAS4	- <	0.001	- <
PFAS5	0.010	0.035	- <
PFAS6	- <	0.100	- <
PFAS7	0.009	0.014	0.002
PFAS9	0.010	0.010	- <
Statistical Results			
N	7	9	1
σ_r	0.008	0.010	-
σ_L	0.027	0.049	-
σ_R	0.028	0.050	-

PFUnDA (ug/kg) mean values

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.265	0.100 <	0.092	0.100 <	0.274	0.100 <	G|MB| -|LA
PFAS10	0.260	0.100 <	0.100 <	0.100 <	0.248	0.100 <	J|MB| -|LA
PFAS2	0.220	0.100 <	0.100 <	0.100 <	0.210	0.100 <	D|AA|EB|LA
PFAS3	0.320	0.100 <	0.100 <	0.100 <	0.300	0.100 <	E|AA|EB|LA
PFAS4	0.176	0.100 <	0.100 <	0.100 <	0.138 *	0.100 <	A|MA| -|LB
PFAS5	0.120 *	0.100 <	0.100 <	0.100 <	0.130 *	0.100 <	E|MB|NC|LB
PFAS6	0.500 < C	0.500 <	0.500 <	0.500 <	0.500 < C	0.500 <	A|AB|EB|LA
PFAS7	0.250	0.025	0.078	0.020 <	0.243	0.036	C|HB|EB|LC
PFAS9	0.280	0.100 <	0.100 <	0.100 <	0.260	0.100 <	H|AC|EB|LD
Statistical Results							
NDA mean	0.2542	-	-	-	0.2459	-	
NDA st dev	0.0457	-	-	-	0.0491	-	
Coeff Var (%)	18.0	-	-	-	20.0	-	
N	8	1	2	-	8	1	
Median	0.2552	0.0254	0.0852	-	0.2456	0.0359	
MAD	0.0300	-	0.0072	-	0.0320	-	
Total Error	0.0499	-	-	-	0.0537	-	

(cont.)

Per- and Polyfluoroalkyl substances Data and Statistics

PFUnDA (ug/kg) ***mean values*** (cont.)

Sample	**795**		**685**		**785**	
PFAS1	0.199		0.196		0.100	<
PFAS10	0.174		0.235		0.100	<
PFAS2	0.170		0.170		0.100	<
PFAS3	0.220		0.250		0.100	<
PFAS4	0.100	<	0.100	<	0.100	<
PFAS5	0.150		0.130		0.100	<
PFAS6	0.500	<	0.500	<	0.500	<
PFAS7	0.199		0.210		0.024	
PFAS9	0.190		0.300		0.100	<
Statistical Results						
NDA mean	0.1870		0.2113		-	
NDA st dev	0.0228		0.0529		-	
Coeff Var (%)	12.2		25.0		-	
N	7		7		1	
Median	0.1900		0.2097		0.0238	
MAD	0.0157		0.0397		-	
Total Error	0.0252		0.0585		-	

PFUnDA (ug/kg) ***absolute differences duplicate***

Sample	**793**		**796**		**789**		**773**		**793-2**		**758**	
PFAS1	0.005		-	<	0.003		-	<	0.024		-	<
PFAS10	0.016		-	<	-	<	-	<	0.002		-	<
PFAS2	0.010		-	<	-	<	-	<	0.010		-	<
PFAS3	0.030		-	<	-	<	-	<	0.010		-	<
PFAS4	0.055		-	<	-	<	-	<	0.017		-	<
PFAS5	0.000		-	<	-	<	-	<	0.010		-	<
PFAS6	-	< C	-	<	-	<	-	<	-	< C	-	<
PFAS7	0.027		0.006		0.007		-	<	0.002		0.005	
PFAS9	0.020		-	<	-	<	-	<	0.030		-	<
Statistical Results												
N	8		1		2		-		8		1	
σ_r	0.011		-		-		-		0.008		-	
σ_L	0.049		-		-		-		0.052		-	
σ_R	0.050		-		-		-		0.053		-	

Sample	**795**		**685**		**785**	
PFAS1	0.021		0.024		-	<
PFAS10	0.008		0.024		-	<
PFAS2	0.020		0.010		-	<
PFAS3	0.010		0.010		-	<
PFAS4	-	<	-	<	-	<
PFAS5	0.020		0.010		-	<
PFAS6	-	<	-	<	-	<
PFAS7	0.015		0.010		0.002	
PFAS9	0.004		0.030		-	<
Statistical Results						
N	7		7		1	
σ_r	0.006		0.000		-	
σ_L	0.022		0.052		-	
σ_R	0.023		0.053		-	

Per- and Polyfluoroalkyl substances Data and Statistics

PFDoA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.316	0.100 <	0.086	0.100 <	0.309	0.100 <	G|MB| -|LA
PFAS10	0.314	0.100 <	0.100 <	0.100 <	0.298	0.100 <	J|MB| -|LA
PFAS2	0.270	0.100 <	0.100 <	0.100 <	0.280	0.100 <	D|AA|EB|LA
PFAS3	0.370	0.100 <	0.110	0.100 <	0.360	0.100 <	E|AA|EB|LA
PFAS4	0.220	0.100 <	0.100 <	0.100 <	0.196	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.324	0.020 <	0.088	0.020 <	0.333	0.024	C|HB|EB|LC
PFAS9	0.320	0.100 <	0.110	0.100 <	0.340	0.100 <	H|AC|EB|LD
			Statistical Results				
NDA mean	0.3185	-	0.0959	-	0.3164	-	
NDA st dev	0.0100	-	0.0123	-	0.0435	-	
Coeff Var (%)	3.1	-	12.8	-	13.7	-	
N	7	-	4	-	7	1	
Median	0.3162	-	0.0988	-	0.3091	0.0236	
MAD	0.0082	-	0.0112	-	0.0291	-	
Total Error	-	-	0.0145	-	0.0481	-	

Sample	795	685	785
PFAS1	0.087	0.126	0.100 <
PFAS10	0.100 <	0.151	0.100 <
PFAS2	0.090	0.140	0.100 <
PFAS3	0.110	0.160	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.095	0.144	0.033
PFAS9	0.110	0.140	0.100 <
	Statistical Results		
NDA mean	0.0960	0.1405	-
NDA st dev	0.0135	0.0119	-
Coeff Var (%)	14.0	8.5	-
N	5	6	1
Median	0.0949	0.1419	0.0333
MAD	0.0077	0.0053	-
Total Error	0.0154	0.0134	-

PFDoA (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.004	- <	0.003	- <	0.030	- <
PFAS10	0.027	- <	- <	- <	0.008	- <
PFAS2	0.010	- <	- <	- <	0.010	- <
PFAS3	0.020	- <	0.010	- <	0.020	- <
PFAS4	0.067	- <	- <	- <	0.069	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.011	- <	0.003	- <	0.003	0.001
PFAS9	0.000	- <	0.010	- <	0.000	- <
			Statistical Results			
N	7	-	4	-	7	1
σ_r	0.009	-	-	-	0.010	-
σ_L	0.008	-	-	-	0.043	-
σ_R	0.012	-	-	-	0.044	-

(cont.)

PFDoA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	0.006	0.026	- <
PFAS10	- <	0.006	- <
PFAS2	0.030	0.030	- <
PFAS3	0.000	0.000	- <
PFAS4	- <	0.007 <	- <
PFAS5	- <	0.001 <	- <
PFAS6	- <	0.001 <	- <
PFAS7	0.003	0.004	0.005
PFAS9	0.010	0.010	- <
Statistical Results			
N	5	6	1
σ_r	0.004	0.006	-
σ_L	0.013	0.011	-
σ_R	0.014	0.013	-

PFTrDA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.134	0.100 <	0.054	0.100 <	0.128	0.100 <	G|MB| -|LA
PFAS10	0.119	0.100 <	0.100 <	0.100 <	0.101	0.100 <	J|MB| -|LA
PFAS2	0.140	0.100 <	0.100 <	0.100 <	0.120	0.100 <	D|AA|EB|LA
PFAS3	0.170	0.100 <	0.100 <	0.100 <	0.170	0.100 <	E|AA|EB|LA
PFAS4	0.143	0.100 <	0.100 <	0.100 <	0.155	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.180	0.020 <	0.054	0.020 <	0.184	0.020 <	C|HB|EB|LC
PFAS9	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	H|AC|EB|LD
Statistical Results							
NDA mean	0.1444	-	-	-	0.1419	-	
NDA st dev	0.0227	-	-	-	0.0387	-	
Coeff Var (%)	15.7	-	-	-	27.3	-	
N	6	-	2	-	6	-	
Median	0.1415	-	0.0537	-	0.1414	-	
MAD	0.0152	-	0.0002	-	0.0250	-	
Total Error	0.0254	-	-	-	0.0434	-	

Sample	795	685	785
PFAS1	0.100 <	0.110	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.160	0.100 <
PFAS3	0.100 <	0.160	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.069	0.129	0.019
PFAS9	0.100 <	0.150	0.100 <
Statistical Results			
NDA mean	-	0.1435	-
NDA st dev	-	0.0221	-
Coeff Var (%)	-	15.4	-
N	1	5	1
Median	0.0688	0.1500	0.0191
MAD	-	0.0100	-
Total Error	-	0.0253	-

(cont.)

PFTrDA (ug/kg) ***absolute differences duplicates*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	0.010	- <	- <	- <	0.018	- <
PFAS10	0.007	- <	- <	- <	0.003	- <
PFAS2	0.020	- <	- <	- <	0.010	- <
PFAS3	0.000	- <	- <	- <	0.000	- <
PFAS4	0.007	- <	- <	- <	0.020	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	0.000	- <	0.007	- <	0.001	- <
PFAS9	- <	- <	- <	- <	- <	- <
	==========	Statistical Results	==========			
N	6	-	1	-	6	-
σ_r	0.005	-	-	-	0.006	-
σ_L	0.022	-	-	-	0.038	-
σ_R	0.023	-	-	-	0.039	-

Sample	795	685	785
PFAS1	- <	0.005	- <
PFAS10	- <	- <	- <
PFAS2	- <	0.000	- <
PFAS3	- <	0.000	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS7	0.000	0.001	0.000
PFAS9	- <	0.030	- <
	==========	Statistical Results	==========
N	1	5	1
σ_r	-	0.001	-
σ_L	-	0.022	-
σ_R	-	0.022	-

PFTeDA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.116	0.100 <	0.100 <	0.100 <	0.116	0.100 <	G|MB| -|LA
PFAS10	0.114	0.100 <	0.100 <	0.100 <	0.110	0.100 <	J|MB| -|LA
PFAS2	0.120	0.100 <	0.100 <	0.100 <	0.110	0.100 <	D|AA|EB|LA
PFAS3	0.150	0.100 <	0.100 <	0.100 <	0.140	0.100 <	E|AA|EB|LA
PFAS4	0.117	0.100 <	0.100 <	0.100 <	0.114	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.122	0.020 <	0.035	0.020 <	0.126	0.020 <	C|HB|EB|LC
PFAS9	0.200 <	0.200 <	0.200 <	0.200 <	0.200 <	0.200 <	H|AC|EB|LD
	==========	Statistical Results	==========				
NDA mean	0.1174	-	-	-	0.1148	-	
NDA st dev	0.0043	-	-	-	0.0083	-	
Coeff Var (%)	3.6	-	-	-	7.3	-	
N	6	-	1	-	6	-	
Median	0.1185	-	0.0352	-	0.1148	-	
MAD	0.0032	-	-	-	0.0047	-	
Total Error	0.0048	-	-	-	0.0096	-	

Sample	795	685	785
PFAS1	0.100 <	0.055	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.031	0.058	0.020 <
PFAS9	0.200 <	0.200 <	0.200 <
	==========	Statistical Results (no NDA)	==========
N	1	2	-
Median	0.0310	0.0565	-
MAD	-	0.0013	-

(cont.)

Per- and Polyfluoroalkyl substances Data and Statistics

PFTeDA (ug/kg) ***absolute differences duplicates*** (cont.)

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFAS1	0.005	- <	- <	- <	0.003	- <
PFAS10	0.004	- <	- <	- <	0.004	- <
PFAS2	0.020	- <	- <	- <	0.040	- <
PFAS3	0.010	- <	- <	- <	0.000	- <
PFAS4	0.021	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	0.008	- <	0.002	- <	0.007	- <
PFAS9	- <	- <	- <	- <	- <	- <
	==========	Statistical Results	==========			
N	6	-	1	-	5	-
σ_r	0.005	-	-	-	0.003	-
σ_L	0.002	-	-	-	0.008	-
σ_R	0.006	-	-	-	0.009	-

Sample	**795**	**685**	**785**
PFAS1	- <	- <	- <
PFAS10	- <	- <	- <
PFAS2	- <	- <	- <
PFAS3	- <	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS7	0.002	0.004	- <
PFAS9	- <	- <	- <
	==========	no Statistical Results	==========
N	1	1	-

PFHxDA (ug/kg) *mean values*

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**	**MIC**
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	C|HB|EB|LC
	==========	no Statistical Results	==========				
N	-	-	-	-	-	-	

Sample	**795**	**685**	**785**
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.020 <	0.020 <	0.020 <
	==========	no Statistical Results	==========
N	-	-	-

Per- and Polyfluoroalkyl substances Data and Statistics

PFODA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.200 <	0.200 <	0.200 <	0.200 <	0.200 <	0.200 <	E|MB|NC|LB
PFAS7	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	C|HB|EB|LC
	==========	no Statistical Results	==========				
N	-	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.200 <	0.200 <	0.200 <
PFAS7	0.020 <	0.020 <	0.020 <
	==========	no Statistical Results	==========
N	-	-	-

PFBS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.078	0.100 <	0.083	0.100 <	0.075	0.100 <	G|MB| -|LA
PFAS10	0.120	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.090	0.100 <	0.100	0.100 <	0.120	0.100 <	D|AA|EB|LA
PFAS3	0.110	0.100 <	0.140	0.100 <	0.110	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.064	0.020 <	0.089	0.020 <	0.075	0.033	C|HB|EB|LC
PFAS9	0.140	0.100 <	0.140	0.100 <	0.170	0.100 <	H|AC|EB|LD
	==========	Statistical Results	==========				
NDA mean	0.0996	-	0.1061	-	0.1046	-	
NDA st dev	0.0301	-	0.0262	-	0.0462	-	
Coeff Var (%)	30.2	-	24.7	-	44.2	-	
N	6	-	5	-	5	1	
Median	0.1000	-	0.1000	-	0.1100	0.0328	
MAD	0.0210	-	0.0170	-	0.0348	-	
Total Error	0.0338	-	0.0300	-	0.0530	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.056	0.045	0.239
PFAS9	0.100 <	0.100 <	0.140
	==========	Statistical Results (no NDA)	==========
N	1	1	2
Median	0.0556	0.0445	0.1895
MAD	-	-	0.0495

(cont.)

PFBS (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	0.048	- <	0.003	- <	0.007	- <
PFAS10	0.012	- <	- <	- <	- <	- <
PFAS2	0.020	- <	0.020	- <	0.050	- <
PFAS3	0.000	- <	0.010	- <	0.000	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.020	- <	0.014	- <	0.009	0.003
PFAS9	0.010	- <	0.010	- <	0.010	- <
	==========	Statistical Results	==========			
N	6	-	5	-	5	1
σ_r	0.005	-	0.004	-	0.002	-
σ_L	0.030	-	0.026	-	0.046	-
σ_R	0.030	-	0.026	-	0.046	-

Sample	795	685	785
PFAS1	- <	- <	- <
PFAS10	- <	- <	- <
PFAS2	- <	- <	- <
PFAS3	- <	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS6	- <	- <	- <
PFAS7	0.009	0.004	0.012
PFAS9	- <	- <	0.020
	==========	no Statistical Results	==========
N	1	1	2

PFPeS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	C|HB|EB|LC
	==========	no Statistical Results	==========				
N	-	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.020 <	0.020 <	0.020 <
	==========	no Statistical Results)	==========
N	-	-	-

Per- and Polyfluoroalkyl substances Data and Statistics

PFHxS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.060	0.061	0.100 <	0.053	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.110	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.044	0.038	0.042	0.016	0.043	0.020 <	C|HB|EB|LC
PFAS9	0.100 <	0.100 <	0.100 <	0.100 <	0.100	0.100 <	H|AC|EB|LD
	==========	Statistical Results (no NDA)	==========				
N	1	1	3	1	3	-	
Median	0.0442	0.0490	0.0610	0.0155	0.0529	-	
MAD	-	0.0115	0.0190	-	0.0099	-	

Sample	795	685	785
PFAS1	0.100 <	0.127	0.100 <
PFAS10	0.100 <	0.144	0.100 <
PFAS2	0.100 <	0.140	0.100 <
PFAS3	0.100 <	0.200	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.150	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.037	0.144	0.023
PFAS9	0.100 <	0.190	0.100 <
	==========	Statistical Results	==========
NDA mean	-	0.1429	-
NDA st dev	-	0.0048	-
Coeff Var (%)	-	3.4	-
N	1	7	1
Median	0.0366	0.1438	0.0231
MAD	-	0.0062	-
Total Error	-	0.0054	-

PFHxS (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	- <	- <	0.004	- <	0.002	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	0.020	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.003	0.003	0.019	0.004	0.000	- <
PFAS9	- <	- <	- <	- <	- <	- <
	==========	no Statistical Results	==========			
N	1	1	3	1	2	-

(cont.)

PFHxS (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	- <	0.002	- <
PFAS10	- <	0.013	- <
PFAS2	- <	0.020	- <
PFAS3	- <	0.010	- <
PFAS4	- <	- <	- <
PFAS5	- <	0.010	- <
PFAS6	- <	- <	- <
PFAS7	0.006	0.061	0.000
PFAS9	- <	0.030	- <
Statistical Results			
N	1	7	1
σ_r	-	0.007	-
σ_L	-	0.000	-
σ_R	-	0.007	-

PFHpS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.051	0.020 <	0.020 <	0.020 <	0.068	0.020 <	C|HB|EB|LC
Statistical Results (no NDA)							
N	1	-	-	-	1	-	
Median	0.0511	-	-	-	0.0682	-	
MAD	-	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.118	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100	0.100 <
PFAS3	0.100 <	0.170	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.020 <	0.195	0.038
Statistical Results			
NDA mean	-	0.1422	-
NDA st dev	-	0.0499	-
Coeff Var (%)	-	35.1	-
N	-	4	1
Median	-	0.1438	0.0382
MAD	-	0.0350	-
Total Error	-	0.0589	-

PFHpS (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	- <	- <	- <	- <	- <	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	- <	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	0.011	- <	- <	- <	0.015	- <
no Statistical Results						
N	1	-	-	-	1	-

(cont.)

PFHpS (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	- <	0.007	- <
PFAS10	- <	0.007 <	- <
PFAS2	- <	0.010	- <
PFAS3	- <	0.030	- <
PFAS4	- <	0.006 <	- <
PFAS5	- <	0.001 <	- <
PFAS7	- <	0.048	0.002
	========== Statistical Results ==========		
N	-	4	1
σ_r	-	0.016	-
σ_L	-	0.049	-
σ_R	-	0.051	-

PFOS (linear) (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	3.50	0.752	1.91	0.460	4.54	1.24	G|MB| -|LA
PFAS10	3.44	0.719	2.09	0.524	3.78	1.02	J|MB| -|LA
PFAS2	2.98	0.460 **	1.76	0.430	2.81	0.810	D|AA|EB|LA
PFAS3	4.90	0.750	2.83	0.640	4.64	1.28	E|AA|EB|LA
PFAS4	1.60 *	0.484 **	0.847 *	0.393	1.24 **	0.383 *	A|MA| -|LB
PFAS5	3.55	0.700	2.28	0.500	3.80	0.980	E|MB|NC|LB
PFAS6	6.12 *	1.33 **	3.65 *	0.980 **	5.43	1.31	A|AB|EB|LA
PFAS7	3.92	0.762	2.52	0.572	4.07	1.05	C|HB|EB|LC
PFAS9	4.45	0.850	2.60	0.580	4.78	1.12	H|AC|EB|LD
	========== Statistical Results ==========						
NDA mean	3.745	0.7470	2.293	0.5116	4.270	1.092	
NDA st dev	0.860	0.0672	0.551	0.0919	0.831	0.255	
Coeff Var (%)	23.0	9.0	24.0	18.0	19.5	23.4	
N	9	9	9	9	9	9	
Median	3.550	0.7500	2.280	0.5239	4.067	1.051	
MAD	0.570	0.0500	0.368	0.0636	0.573	0.188	
Total Error	0.931	0.0728	0.597	0.0996	0.900	0.277	

Sample	795	685	785
PFAS1	2.30	26.9	1.30
PFAS10	2.69	28.4	2.04
PFAS2	2.19	22.8	1.64
PFAS3	3.35	36.3	2.46
PFAS4	1.41 *	10.2 **	0.948
PFAS5	2.60	25.5	1.95
PFAS6	3.67	39.0	2.73
PFAS7	3.00	32.0	2.24
PFAS9	3.02	28.6	2.34
	========== Statistical Results ==========		
NDA mean	2.769	28.89	2.045
NDA st dev	0.588	5.38	0.581
Coeff Var (%)	21.2	18.6	28.4
N	9	9	9
Median	2.686	28.41	2.037
MAD	0.388	3.56	0.397
Total Error	0.637	5.83	0.629

========== (cont.)

PFOS (linear) (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	793	796	789	773	793-2	758
PFAS1	0.293	0.075	0.188	0.018	0.300	0.502
PFAS10	0.098	0.031	0.047	0.056	0.567	0.076
PFAS2	0.050	0.010	0.000	0.040	0.000	0.090
PFAS3	0.210	0.040	0.270	0.030	0.280	0.010
PFAS4	0.450	0.075	0.406	0.033	0.343	0.026
PFAS5	0.100	0.000	0.010	0.010	0.400	0.020
PFAS6	2.42	0.370	0.760	0.160	0.950	0.000
PFAS7	0.189	0.039	0.043	0.002	0.310	0.076
PFAS9	0.560	0.070	0.030	0.010	0.100	0.100
Statistical Results						
N	9	9	9	9	9	9
σ_r	0.118	0.028	0.045	0.018	0.096	0.045
σ_L	0.862	0.064	0.543	0.091	0.828	0.253
σ_R	0.870	0.070	0.545	0.092	0.833	0.257

Sample	795	685	785
PFAS1	0.120	5.62	0.228
PFAS10	0.224	1.47	0.208
PFAS2	0.138	0.749	0.340
PFAS3	0.210	1.99	0.089
PFAS4	0.390	1.00	0.055
PFAS5	0.034	1.00	0.100
PFAS6	0.152	6.10	0.110
PFAS7	0.178	1.83	0.190
PFAS9	0.040	0.301	0.178
Statistical Results			
N	9	9	9
σ_r	0.076	0.762	0.071
σ_L	0.585	5.351	0.578
σ_R	0.590	5.404	0.582

PFOS (branched) (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.477	0.317	0.378	0.185	0.634	0.170	G|MB| -|LA
PFAS10	0.308	0.251	0.373	0.173	0.355	0.110	J|MB| -|LA
PFAS2	0.210	0.170	0.310	0.140	0.240	0.100 <	D|AA|EB|LA
PFAS3	0.290	0.250	0.340	0.180	0.320	0.120	E|AA|EB|LA
PFAS4	0.198	0.162	0.160	0.119 *	0.153	0.100 <	A|MA| -|LB
PFAS5	0.410	0.280	0.510	0.170	0.430	0.150	E|MB|NC|LB
PFAS6	0.630	0.510 *	0.950 *	0.500 < I	0.700	0.500 <	A|AB|EB|LA
PFAS7	1.13 **	0.968 **	0.960 *	0.473 **	1.04 *	0.080	C|HB|EB|LC
PFAS9	0.480	0.340	0.520	0.200	0.510	0.160	H|AC|EB|LD
Statistical Results							
NDA mean	0.3650	0.2605	0.3919	0.1739	0.4372	0.1430	
NDA st dev	0.1707	0.0861	0.1879	0.0239	0.2677	0.0315	
Coeff Var (%)	46.7	33.0	47.9	13.8	61.2	22.0	
N	9	9	9	8	9	6	
Median	0.4100	0.2800	0.3779	0.1763	0.4300	0.1350	
MAD	0.1200	0.0600	0.1321	0.0162	0.1900	0.0250	
Total Error	0.1849	0.0932	0.2035	0.0262	0.2900	0.0361	

(cont.)

PFOS (branched) (ug/kg) ***mean values*** (cont.)

Sample	795		685		785	
PFAS1	0.346		3.51		0.252	
PFAS10	0.306		3.10		0.355	
PFAS2	0.220		2.15		0.250	
PFAS3	0.320		2.80		0.300	
PFAS4	0.185		1.08	**	0.215	
PFAS5	0.330		2.75		0.440	
PFAS6	0.500	< C	5.08	**	0.520	
PFAS7	0.426		3.58		1.43	**
PFAS9	0.410		3.40		0.460	
Statistical Results						
NDA mean	0.3273		3.098		0.3430	
NDA st dev	0.0800		0.599		0.1436	
Coeff Var (%)	24.4		19.3		41.9	
N	8		9		9	
Median	0.3250		3.100		0.3552	
MAD	0.0532		0.406		0.1048	

PFOS (branched) (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	0.088	0.019	0.045	0.033	0.048	0.098
PFAS10	0.008	0.006	0.005	0.015	0.067	0.002
PFAS2	0.080	0.030	0.050	0.020	0.010	- <
PFAS3	0.080	0.010	0.010	0.000	0.010	- <
PFAS4	0.006	0.024	0.119	0.005	0.047	- <
PFAS5	0.000	0.010	0.080	0.010	0.020	0.020
PFAS6	- <	- <	- <	<	- <	- <
PFAS7	0.381	0.243	0.227	0.087	0.626	0.029
PFAS9	0.040	0.010	0.040		0.060	0.030
Statistical Results						
N	8	8	8	8	8	5
σ_r	0.038	0.007	0.034	0.010	0.022	0.009
σ_L	0.158	0.085	0.140	0.025	0.195	0.031
σ_R	0.162	0.086	0.144	0.027	0.197	0.032

Sample	795		685		785	
PFAS1	0.018		0.224		0.051	
PFAS10	0.024		0.056		0.093	
PFAS2	0.010		0.280		0.090	
PFAS3	0.060		1.36		0.055	
PFAS4	0.076		0.202		0.032	
PFAS5	0.010		0.100		0.034	
PFAS6	-	<	1.90		-	<
PFAS7	0.046		0.919		0.150	
PFAS9	0.030		0.120		0.059	
Statistical Results						
N	8		9		8	
σ_r	0.017		0.109		0.027	
σ_L	0.079		0.593		0.127	
σ_R	0.081		0.603		0.130	

Per- and Polyfluoroalkyl substances Data and Statistics

sum PFOS (0.7 factor) (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	3.97	1.07	2.29	0.645	5.18	1.41	G|MB| -|LA
PFAS10	3.75	0.970	2.47	0.697	4.13	1.13	J|MB| -|LA
PFAS2	3.19	0.620	2.07	0.570	3.05	0.880	D|AA|EB|LA
PFAS3	5.19	1.00	3.17	0.820	4.96	1.37	E|AA|EB|LA
PFAS4	1.79	0.646	1.01 *	0.511	1.39 **	0.453 *	A|MA| -|LB
PFAS5	3.96	0.990	2.79	0.660	4.23	1.13	E|MB|NC|LB
PFAS6	6.61	1.76 *	4.30	1.33 **	5.95	1.66	A|AB|EB|LA
PFAS7	5.05	1.73 *	3.48	1.05	5.11	1.13	C|HB|EB|LC
PFAS9	4.93	1.18	3.12	0.780	5.30	1.28	H|AC|EB|LD
	==========	Statistical Results	==========				
NDA mean	4.308	0.9817	2.797	0.6924	4.816	1.211	
NDA st dev	1.362	0.2732	0.757	0.1745	1.032	0.331	
Coeff Var (%)	31.6	27.8	27.1	25.2	21.4	27.3	
N	9	9	9	9	9	9	
Median	3.974	1.0000	2.790	0.6965	4.960	1.131	
MAD	0.956	0.1800	0.500	0.1235	0.730	0.239	
Total Error	1.476	0.2959	0.820	0.1890	1.118	0.359	
	==========						

Sample	795	685	785
PFAS1	2.64	30.4	1.55
PFAS10	2.09	22.1	1.67
PFAS2	2.40	24.9	1.89
PFAS3	3.66	39.1	2.75
PFAS4	1.59	11.2 *	1.16
PFAS5	2.90	28.5	2.40
PFAS6	4.02	44.0	3.16
PFAS7	3.42	35.5	3.67
PFAS9	3.43	32.0	2.80
	==========	Statistical Results	==========
NDA mean	2.964	30.84	2.321
NDA st dev	0.808	8.27	1.006
Coeff Var (%)	27.2	26.8	43.3
N	9	9	9
Median	2.900	30.40	2.400
MAD	0.530	5.47	0.725
Total Error	0.875	8.96	1.090
	==========		

sum PFOS (0.7 factor) (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.382	0.056	0.233	0.015	0.348	0.598
PFAS10	0.106	0.037	0.043	0.071	0.634 *	0.073
PFAS2	0.130	0.040	0.050	0.060	0.010 *	0.090
PFAS3	0.290	0.040	0.260	0.030	0.280	0.060
PFAS4	0.444	0.099	0.525	0.038	0.390	0.026
PFAS5	0.110	0.010	0.070	0.000	0.420	0.040
PFAS6	2.14	0.530	0.160	0.160	0.600	0.000
PFAS7	0.570	0.282	0.270	0.085	0.315	0.048
PFAS9	0.600	0.070	0.010	0.010	0.150	0.130
	==========	Statistical Results	==========			
N	9	9	9	9	9	9
σ_r	0.203	0.020	0.109	0.028	0.086	0.030
σ_L	1.354	0.265	0.748	0.166	1.030	0.331
σ_R	1.369	0.266	0.756	0.168	1.033	0.332
	==========						(cont.)

sum PFOS (0.7 factor) (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	0.177	5.40	0.069
PFAS10	0.174	2.66	0.256
PFAS2	0.133	2.05	0.430
PFAS3	0.160	2.59	0.242
PFAS4	0.466	1.20	0.001
PFAS5	0.111	2.06	0.140
PFAS6	0.150	8.00	0.280
PFAS7	0.159	4.19	0.096
PFAS9	0.111	1.76	0.163
	Statistical Results		
N	9	9	9
σ_r	0.042	0.512	0.036
σ_L	0.802	8.267	1.006
σ_R	0.803	8.283	1.006

PFDS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.055	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.048	0.020 <	0.068	0.020 <	0.038	0.020 <	C|HB|EB|LC
PFAS9	0.100 <	0.100 <	0.120	0.100 <	0.100 <	0.100 <	H|AC|EB|LD
	Statistical Results (no NDA)						
N	1	-	3	-	1	-	
Median	0.0482	-	0.0675	-	0.0381	-	
MAD	-	-	0.0125	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.029	0.038	0.033
PFAS9	0.100 <	0.110	0.100 <
	Statistical Results (no NDA)		
N	1	2	1
Median	0.0288	0.0741	0.0330
MAD	-	0.0359	-

PFDS (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	- <	- <	0.015 <	- <	- <	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	- <	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	0.002	- <	0.021	- <	0.000	- <
PFAS9	- <	- <	0.000	- <	- <	- <
	no Statistical Results					
N	1	-	2	-	1	-

(cont.)

PFDS (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	- <	- <	- <
PFAS10	- <	- <	- <
PFAS2	- <	- <	- <
PFAS3	- <	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS7	0.007	0.001	0.003
PFAS9	- <	- <	- <
==========	no Statistical Results	==========	
N	1	1	1

4:2 FTS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	0.020 <	C|HB|EB|LC
==========	no Statistical Results	==========					
N	-	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.020 <	0.020 <	0.020 <
==========	no Statistical Results	==========	
N	-	-	-

6:2 FTS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.583	0.100 <	0.051	0.100 <	0.593	0.100 <	G|MB| -|LA
PFAS10	0.679	0.100 <	0.100 <	0.100 <	0.628	0.100 <	J|MB| -|LA
PFAS2	0.740	0.100 <	0.150	0.100 <	0.880	0.100 <	D|AA|EB|LA
PFAS3	1.24	0.100 <	0.160	0.100 <	1.24	0.100 <	E|AA|EB|LA
PFAS4	0.165	0.100 <	0.100 <	0.100 <	0.158	0.100 <	A|MA| -|LB
PFAS5	2.15	0.100 <	0.190	0.100 <	2.30	0.100 <	E|MB|NC|LB
PFAS7	0.747	0.020 <	0.054	0.020 <	0.730	0.019	C|HB|EB|LC
==========	Statistical Results	==========					
NDA mean	0.6829	-	0.1593	-	0.7024	-	
NDA st dev	0.2168	-	0.0321	-	0.2234	-	
Coeff Var (%)	31.8	-	20.1	-	31.8	-	
N	7	-	5	-	7	1	
Median	0.7400	-	0.1500	-	0.7295	0.0191	
MAD	0.1570	-	0.0400	-	0.1505	-	
Total Error	0.2398	-	-	-	0.2471	-	

========== (cont.)

6:2 FTS (ug/kg) ***mean values*** (cont.)

Sample	795		685		785	
PFAS1	0.100	<	0.100	<	0.100	<
PFAS10	0.100	<	0.100	<	0.100	<
PFAS2	0.100	<	0.100	<	0.100	<
PFAS3	0.100	<	0.100	<	0.100	<
PFAS4	0.100	<	0.100	<	0.100	<
PFAS5	0.140		0.100	<	0.100	<
PFAS7	0.048		0.020	<	0.020	<
	Statistical Results (no NDA)					
N	2		-		-	
Median	0.0939		-		-	
MAD	0.0462		-		-	

6:2 FTS (ug/kg) ***absolute differences duplicate***

Sample	793	796		789		773		793-2	758	
PFAS1	0.018	-	<	-	<	-	<	0.009	-	<
PFAS10	0.015	-	<	-	<	-	<	0.008	-	<
PFAS2	0.090	-	<	0.050		-	<	0.190	-	<
PFAS3	0.180	-	<	0.050		-	<	0.060	-	<
PFAS4	0.013	-	<	-	<	-	<	0.034	-	<
PFAS5	0.300	-	<	0.060		-	<	0.000	-	<
PFAS7	0.094	-	<	0.004		-	<	0.095	0.004	
	Statistical Results									
N	7	-		4		-		7	1	
σ_r	0.074	-		0.005		-		0.024	-	
σ_L	0.211	-		0.032		-		0.223	-	
σ_R	0.223	-		0.032		-		0.224	-	

Sample	795		685		785	
PFAS1	-	<	-	<	-	<
PFAS10	-	<	-	<	-	<
PFAS2	-	<	-	<	-	<
PFAS3	-	<	-	<	-	<
PFAS4	-	<	-	<	-	<
PFAS5	0.080		-	<	-	<
PFAS7	0.000		-	<	-	<
	Statistical Results					
N	2		-		-	

8:2 FTS (ug/kg) *mean values*

Sample	793	796		789		773		793-2	758		MIC
PFAS1	0.161	0.100	<	0.071		0.100	<	0.176	0.100	<	G|MB| -|LA
PFAS10	0.157	0.100	<	0.100	<	0.100	<	0.172	0.100	<	J|MB| -|LA
PFAS2	0.240	0.100	<	0.210		0.100	<	0.280	0.100	<	D|AA|EB|LA
PFAS3	0.380	0.100	<	0.250		0.100	<	0.390	0.100	<	E|AA|EB|LA
PFAS4	0.126	0.100	<	0.100	<	0.100	<	0.124	0.100	<	A|MA| -|LB
PFAS5	0.430	0.100	<	0.240		0.100	<	0.500	0.100	<	E|MB|NC|LB
PFAS7	0.265	0.020	<	0.111		0.020	<	0.280	0.046		C|HB|EB|LC
	Statistical Results										
NDA mean	0.2607	-		0.2055		-		0.2850	-		
NDA st dev	0.1282	-		0.0613		-		0.1436	-		
Coeff Var (%)	49.2	-		29.8		-		50.4	-		
N	7	-		5		-		7	1		
Median	0.2400	-		0.2100		-		0.2800	0.0455		
MAD	0.0827	-		0.0400		-		0.1082	-		
Total Error	0.1439	-		0.0702		-		0.1612	-		

(cont.)

8:2 FTS (ug/kg) ***mean values*** (cont.)

Sample	795	685	785
PFAS1	0.123	0.100 <	0.100 <
PFAS10	0.123	0.100 <	0.100 <
PFAS2	0.140	0.100 <	0.100 <
PFAS3	0.130	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.280	0.100 <	0.100 <
PFAS7	0.167	0.020 <	0.020 <
Statistical Results			
NDA mean	0.1286	-	-
NDA st dev	0.0123	-	-
Coeff Var (%)	9.5	-	-
N	6	-	-
Median	0.1350	-	-
MAD	0.0119	-	-
Total Error	0.0138	-	-

8:2 FTS (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	0.003	- <	0.011	- <	0.008	- <
PFAS10	0.007	- <	- <	- <	0.019	- <
PFAS2	0.010	- <	0.040	- <	0.010	- <
PFAS3	0.030	- <	0.010	- <	0.020	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	0.040	- <	0.130	- <	0.030	- <
PFAS7	0.003	- <	0.006	- <	0.021	0.007
Statistical Results						
N	6	-	5	-	6	1
σ_r	0.005	-	0.004	-	0.006	-
σ_L	0.128	-	0.061	-	0.144	-
σ_R	0.128	-	0.061	-	0.144	-

Sample	795	685	785
PFAS1	0.036	- <	- <
PFAS10	0.011	- <	- <
PFAS2	0.030	- <	- <
PFAS3	0.020	- <	- <
PFAS4	- <	- <	- <
PFAS5	0.010	- <	- <
PFAS7	0.017	- <	- <
Statistical Results			
N	6	-	-
σ_r	0.008	-	-
σ_L	0.011	-	-
σ_R	0.014	-	-

Per- and Polyfluoroalkyl substances Data and Statistics

10:2 FTS (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.241	0.100 <	0.091	0.100 <	0.224	0.100 <	G|MB| -|LA
PFAS10	0.576	0.100 <	0.300	0.100 <	0.572	0.100 <	J|MB| -|LA
PFAS2	0.320	0.100 <	0.190	0.100 <	0.320	0.100 <	D|AA|EB|LA
PFAS3	0.570	0.100 <	0.320	0.100 <	0.540	0.100 <	E|AA|EB|LA
PFAS4	0.170	0.100 <	0.100 <	0.100 <	0.143	0.100 <	A|MA| -|LB
PFAS5	0.130	0.100 <	0.130	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.366	0.020 <	0.173	0.020 <	0.363	0.049	C|HB|EB|LC
	==========	Statistical Results	==========				
NDA mean	0.3248	-	0.1908	-	0.3566	-	
NDA st dev	0.2103	-	0.1026	-	0.2148	-	
Coeff Var (%)	64.8	-	53.8	-	60.2	-	
N	7	-	6	-	6	1	
Median	0.3200	-	0.1815	-	0.3416	0.0485	
MAD	0.1500	-	0.0712	-	0.1583	-	
Total Error	0.2326	-	0.1152	-	0.2412	-	

Sample	795	685	785
PFAS1	0.150	0.100 <	0.100 <
PFAS10	0.320	0.100 <	0.100 <
PFAS2	0.130	0.100 <	0.100 <
PFAS3	0.200	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.206	0.020 <	0.034
	==========	Statistical Results	==========
NDA mean	0.1850	-	-
NDA st dev	0.0708	-	-
Coeff Var (%)	38.3	-	-
N	5	-	1
Median	0.2000	-	0.0339
MAD	0.0501	-	-
Total Error	0.0811	-	-

10:2 FTS (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.029	- <	0.006	- <	0.018	- <
PFAS10	0.038	- <	0.002	- <	0.013	- <
PFAS2	0.140	- <	0.070	- <	0.080	- <
PFAS3	0.100	- <	0.000	- <	0.040	- <
PFAS4	0.044	- <	- <	- <	0.017	- <
PFAS5	0.020	- <	0.010	- <	- <	- <
PFAS7	0.002	- <	0.006	- <	0.024	0.004
	==========	Statistical Results	==========			
N	7	-	6	-	6	1
σ_r	0.018	-	0.004	-	0.006	-
σ_L	0.210	-	0.103	-	0.215	-
σ_R	0.211	-	0.103	-	0.215	-

Sample	795	685	785
PFAS1	0.024	- <	- <
PFAS10	0.006	- <	- <
PFAS2	0.070	- <	- <
PFAS3	0.020	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS7	0.021	- <	0.010
	==========	Statistical Results	==========
N	5	-	1
σ_r	0.002	-	-
σ_L	0.071	-	-
σ_R	0.071	-	-

Per- and Polyfluoroalkyl substances Data and Statistics

N-MeFOSAA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.198	0.100 <	0.873	0.100 <	0.177	0.218	G|MB| -|LA
PFAS10	0.228	0.100 <	0.970	0.100 <	0.227	0.257	J|MB| -|LA
PFAS2	0.190	0.100 <	1.19	0.100 <	0.240	0.140	D|AA|EB|LA
PFAS3	1.02	0.100 <	5.10	0.100 <	1.02	0.180	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.390	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.310	0.200 <	1.90	0.200 <	0.320	0.440	E|MB|NC|LB
PFAS7	0.221	0.020 <	1.11	0.036	0.247	0.266	C|HB|EB|LC
	==========		Statistical Results		==========		
NDA mean	0.2159	-	1.004	-	0.2362	0.2170	
NDA st dev	0.0414	-	0.347	-	0.0535	0.0617	
Coeff Var (%)	19.2	-	34.6	-	22.7	28.4	
N	6	-	7	1	6	6	
Median	0.2243	-	1.111	0.0356	0.2435	0.2375	
MAD	0.0305	-	0.238	-	0.0413	0.0428	
Total Error	0.0465	-	0.384	-	0.0601	0.0693	

Sample	795	685	785
PFAS1	0.954	0.064	0.350
PFAS10	1.13	0.100 <	0.359
PFAS2	0.550	0.100 <	0.290
PFAS3	0.930	0.100 <	0.540
PFAS4	0.471	0.100 <	0.141
PFAS5	2.10	0.200 <	0.410
PFAS7	1.29	0.037	0.462
	==========	Statistical Results	==========
NDA mean	0.9444	-	0.3800
NDA st dev	0.4789	-	0.1101
Coeff Var (%)	50.7	-	29.0
N	7	2	7
Median	0.9538	0.0506	0.3589
MAD	0.3411	0.0137	0.0689
Total Error	0.5296	-	0.1218

N-MeFOSAA (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.027	- <	0.116	- <	0.002	0.036
PFAS10	0.004	- <	0.005	- <	0.027	0.001
PFAS2	0.100	- <	0.010	- <	0.050	0.020
PFAS3	0.040	- <	0.570	- <	0.050	0.000
PFAS4	- <	- <	0.148	- <	- <	- <
PFAS5	0.090	- <	0.000	- <	0.180	0.020
PFAS7	0.015	- <	0.019	0.004	0.010	0.026
	==========		Statistical Results		==========	
N	6	-	7	1	6	6
σ_r	0.027	-	0.016	-	0.019	0.011
σ_L	0.037	-	0.347	-	0.052	0.061
σ_R	0.046	-	0.347	-	0.055	0.062

Sample	795	685	785
PFAS1	0.075	- <	0.010
PFAS10	0.012	- <	0.024
PFAS2	0.110	- <	0.150
PFAS3	0.020	- <	0.030
PFAS4	0.070	- <	0.003
PFAS5	0.200	- <	0.060
PFAS7	0.004	0.005	0.047
	==========	Statistical Results	==========
N	7	1	7
σ_r	0.049	-	0.020
σ_L	0.478	-	0.109
σ_R	0.480	-	0.111

Per- and Polyfluoroalkyl substances Data and Statistics

N-EtFOSAA (ug/kg) *mean values*

Sample	793	796		789	773		793-2	758	MIC
PFAS1	0.279	0.100	<	2.95	0.087		0.266	0.407	G|MB| -|LA
PFAS10	0.397	0.100	<	4.86	0.144		0.425	0.652	J|MB| -|LA
PFAS2	0.450	0.100	<	5.38	0.100		0.490	0.590	D|AA|EB|LA
PFAS3	1.33	0.100	<	9.70	0.230		1.32	0.560	E|AA|EB|LA
PFAS4	0.192	0.100	<	1.98	0.100	<	0.161	0.297	A|MA| -|LB
PFAS5	0.660	0.100	<	5.60	0.270		0.750	1.15	E|MB|NC|LB
PFAS7	0.379	0.025		4.52	0.149		0.393	0.636	C|HB|EB|LC
	==========			Statistical Results			==========		
NDA mean	0.3755	-		4.711	0.1719		0.3957	0.5794	
NDA st dev	0.1650	-		1.160	0.0848		0.2221	0.1029	
Coeff Var (%)	43.9	-		24.6	49.3		56.1	17.8	
N	7	1		7	6		7	7	
Median	0.3972	0.0249		4.862	0.1466		0.4245	0.5900	
MAD	0.1182	-		0.738	0.0530		0.1590	0.0620	
Total Error	0.1825	-		1.283	0.0972		0.2456	0.1138	

Sample	795	685	785
PFAS1	0.838	0.451	4.26
PFAS10	1.43	0.833	7.37
PFAS2	0.660	0.410	5.10
PFAS3	1.07	0.280	6.75
PFAS4	0.607	0.296	3.25
PFAS5	2.20	0.870	7.40
PFAS7	1.23	0.710	6.30
	==========	Statistical Results	==========
NDA mean	1.020	0.5274	6.016
NDA st dev	0.508	0.2643	1.648
Coeff Var (%)	49.8	50.1	27.4
N	7	7	7
Median	1.070	0.4512	6.304
MAD	0.359	0.1712	1.096
Total Error	0.562	0.2923	1.823

N-EtFOSAA (ug/kg) *absolute differences duplicate*

Sample	793	796		789	773		793-2	758
PFAS1	0.002	-	<	0.261	0.009		0.011	0.052
PFAS10	0.025	-	<	0.135	0.025		0.026	0.014
PFAS2	0.020	-	<	0.160	-	<	0.050	0.090
PFAS3	0.030	-	<	0.320	0.030		0.040	0.100
PFAS4	0.018	-	<	0.454	-	<	0.058	0.030
PFAS5	0.150	-	<	0.800	0.030		0.140	0.100
PFAS7	0.015	0.005		0.056	0.010		0.010	0.084
	==========			Statistical Results			==========	
N	7	1		7	5		7	7
σ_r	0.006	-		0.128	0.006		0.018	0.020
σ_L	0.165	-		1.157	0.085		0.222	0.102
σ_R	0.165	-		1.164	0.085		0.222	0.104

Sample	795	685	785
PFAS1	0.012	0.023	0.575
PFAS10	0.212	0.070	0.363
PFAS2	0.110	0.100	1.58
PFAS3	0.210	0.035	0.540
PFAS4	0.136	0.076	0.110
PFAS5	0.200	0.050	0.244
PFAS7	0.057	0.014	0.975
	==========	Statistical Results	==========
N	7	7	7
σ_r	0.071	0.030	0.119
σ_L	0.506	0.264	1.646
σ_R	0.511	0.265	1.650

Per- and Polyfluoroalkyl substances Data and Statistics

PFOSA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.131	0.100 <	0.212	0.100 <	0.126	0.080	G|MB| -|LA
PFAS10	0.114	0.100 <	0.205	0.100 <	0.119	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.160	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.120	0.100 <	0.140	0.100 <	0.110	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS6	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	0.500 <	A|AB|EB|LA
PFAS7	0.111	0.020 <	0.169	0.014	0.114	0.068	C|HB|EB|LC
PFAS9	0.210	0.100 <	0.310	0.100 <	0.250	0.140	H|AC|EB|LD

Statistical Results

NDA mean	0.1141	-	0.1781	-	0.1170	-
NDA st dev	0.0059	-	0.0413	-	0.0087	-
Coeff Var (%)	5.1	-	23.2	-	7.5	-
N	5	-	6	1	5	3
Median	0.1200	-	0.1871	0.0141	0.1192	0.0804
MAD	0.0093	-	0.0261	-	0.0066	0.0128

Sample	795	685	785
PFAS1	0.084	0.194	0.222
PFAS10	0.100 <	0.202	0.246
PFAS2	0.100 <	0.380	0.100 <
PFAS3	0.110	0.250	0.180
PFAS4	0.100 <	0.100 <	0.147
PFAS5	0.100 <	0.100 <	0.100 <
PFAS6	0.500 <	0.500 <	0.500 <
PFAS7	0.092	0.179	0.216
PFAS9	0.170	0.340	0.310

Statistical Results

NDA mean	0.0951	0.2196	0.2150
NDA st dev	0.0178	0.0602	0.0498
Coeff Var (%)	18.6	27.4	23.2
N	4	6	6
Median	0.1009	0.2261	0.2190
MAD	0.0130	0.0397	0.0332
Total Error	-	0.0676	0.0559

PFOSA (ug/kg) *absolute differences duplicate*

Sample	793	796	789	773	793-2	758
PFAS1	0.001	- <	0.017	- <	0.016	0.003
PFAS10	0.001	- <	0.009	- <	0.002	- <
PFAS2	- <	- <	0.010	- <	- <	- <
PFAS3	0.010	- <	0.020	- <	0.020	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS6	- <	- <	- <	- <	- <	- <
PFAS7	0.002	- <	0.006	0.001	0.001	0.000
PFAS9	0.050	- <	0.030	- <	0.130	0.010

Statistical Results

N	5	-	6	1	5	3
σ_r	0.001	-	0.006	-	0.012	-
σ_L	0.006	-	0.041	-	0.002	-
σ_R	0.006	-	0.041	-	0.012	-

(c0nt.)

PFOSA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	0.001	0.017	0.014
PFAS10	- <	0.008	0.004
PFAS2	- <	0.030	- <
PFAS3	0.000	0.010	0.040
PFAS4	- <	0.006 <	0.012
PFAS5	- <	0.005 <	- <
PFAS6	- <	0.001 <	- <
PFAS7	0.000	0.011	0.016
PFAS9	0.030	0.001	0.010
Statistical Results			
N	4	6	6
σ_r	0.000	0.004	0.003
σ_L	0.018	0.060	0.050
σ_R	0.018	0.060	0.050

N-MeOSA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS3	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.020 <	0.020 <	0.040	0.020 <	0.013	0.023	C|HB|EB|LC
Statistical Results (no NDA)							
N	-	-	1	-	1	1	
Median	-	-	0.0396	-	0.0134	0.0228	
MAD	-	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.053
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.070	0.020 <	0.050
Statistical Results (no NDA)			
N	1	-	2
Median	0.0702	-	0.0518
MAD	-	-	0.0015

N-MeOSA (ug/kg) ***absolute differences*** **duplicate**

Sample	793	796	789	773	793-2	758
PFAS1	- <	- <	- <	- <	- <	- <
PFAS10	- <	- <	- <	- <	- <	- <
PFAS2	- <	- <	- <	- <	- <	- <
PFAS3	- <	- <	- <	- <	- <	- <
PFAS4	- <	- <	- <	- <	- <	- <
PFAS5	- <	- <	- <	- <	- <	- <
PFAS7	- <	- <	0.004	- <	0.000	0.006
no Statistical Results						
N	-	-	1	-	1	1

N-MeOSA (ug/kg) ***absolute differences duplicate*** (cont.)

Sample	795	685	785
PFAS1	- <	- <	0.003
PFAS10	- <	- <	- <
PFAS2	- <	- <	- <
PFAS3	- <	- <	- <
PFAS4	- <	- <	- <
PFAS5	- <	- <	- <
PFAS7	0.032	- <	0.014
	========== no Statistical Results ==========		
N	1	-	2

8:2 diPAP (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.171	0.100 <	0.053	0.100 <	0.163	0.100 <	G|MB| -|LA
PFAS10	0.237	0.100 <	0.100 <	0.100 <	0.260	0.100 <	J|MB| -|LA
PFAS2	0.230	0.100 <	0.100 <	0.100 <	0.170	0.100 <	D|AA|EB|LA
PFAS3	0.290	0.100 <	0.100 <	0.100 <	0.270	0.100 <	E|AA|EB|LA
PFAS4	0.308	0.100 <	0.117	0.100 <	0.257	0.100 <	A|MA| -|LB
		========== Statistical Results ==========					
NDA mean	0.2483	-	-	-	0.2623	-	
NDA st dev	0.0644	-	-	-	0.0156	-	
Coeff Var (%)	25.9	-	-	-	5.9	-	
N	5	-	2	-	5	-	
Median	0.2374	-	0.0847	-	0.2570	-	
MAD	0.0526	-	0.0322	-	0.0130	-	
Total Error	0.0738	-	-	-	-	-	

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS3	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
	========== no Statistical Results (no NDA) ==========		
N	-	-	-

8:2 diPAP (ug/kg) ***absolute differences duplicate***

Sample	793	796	789	773	793-2	758
PFAS1	0.029	- <	- <	- <	0.006	- <
PFAS10	0.012	- <	- <	- <	0.003	- <
PFAS2	0.020	- <	- <	- <	0.050	- <
PFAS3	0.010	- <	- <	- <	0.040	- <
PFAS4	0.033	- <	- <	- <	0.060	- <
		========== Statistical Results ==========				
N	5	-	-	-	5	-
σ_r	0.009	-	-	-	0.021	-
σ_L	0.064	-	-	-	0.003	-
σ_R	0.065	-	-	-	0.021	-

Per- and Polyfluoroalkyl substances Data and Statistics

HFPO-DA (ug/kg) *mean values*

Sample	793	796	789	773	793-2	758	MIC
PFAS1	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	G|MB| -|LA
PFAS10	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	J|MB| -|LA
PFAS2	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	D|AA|EB|LA
PFAS4	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	A|MA| -|LB
PFAS5	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	0.100 <	E|MB|NC|LB
PFAS7	0.031	0.020 <	0.020 <	0.020 <	0.025	0.020 <	C|HB|EB|LC

Statistical Results (no NDA)

N	1	-	-	-	1	-
Median	0.0306	-	-	-	0.0249	-
MAD	-	-	-	-	-	-

Sample	795	685	785
PFAS1	0.100 <	0.100 <	0.100 <
PFAS10	0.100 <	0.100 <	0.100 <
PFAS2	0.100 <	0.100 <	0.100 <
PFAS4	0.100 <	0.100 <	0.100 <
PFAS5	0.100 <	0.100 <	0.100 <
PFAS7	0.020 <	0.020 <	0.020 <

no Statistical Results

N	-	-	-

Method group Per- and Polyfluoroalkyl substances

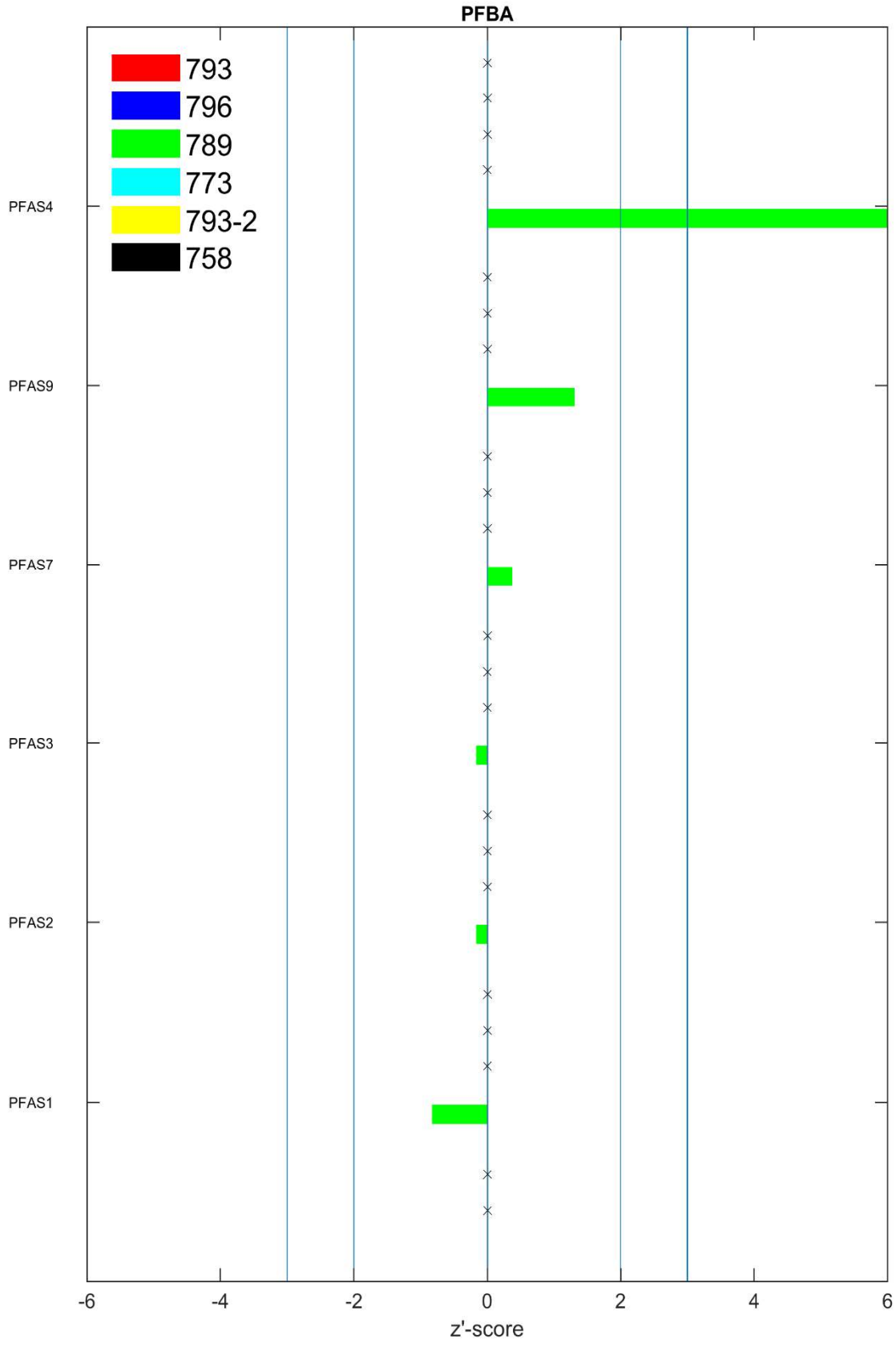
Code	Sample amount
A	1 gram
C	3 gram
D	2.5 – 5 gram
E	5 gram
G	7 gram
H	10 gram
J	depending on concentration 5-7.5 gram
Z	Other (specify)

Code	Extraction technique and amount
AA	Acetonitrile-Methanol (50-50) 20 ml
AB	2 steps Acetonitrile-Methanol 2*10 ml
AC	Acetonitrile- Methanol. 40 ml
MA	Methanol 4 ml
MB	Methanol 10 ml
HB	2 steps 0.1%OH in Methanol 10 ml - 1%Acetic Acid in Methanol 10ml
Z	Other (specify)

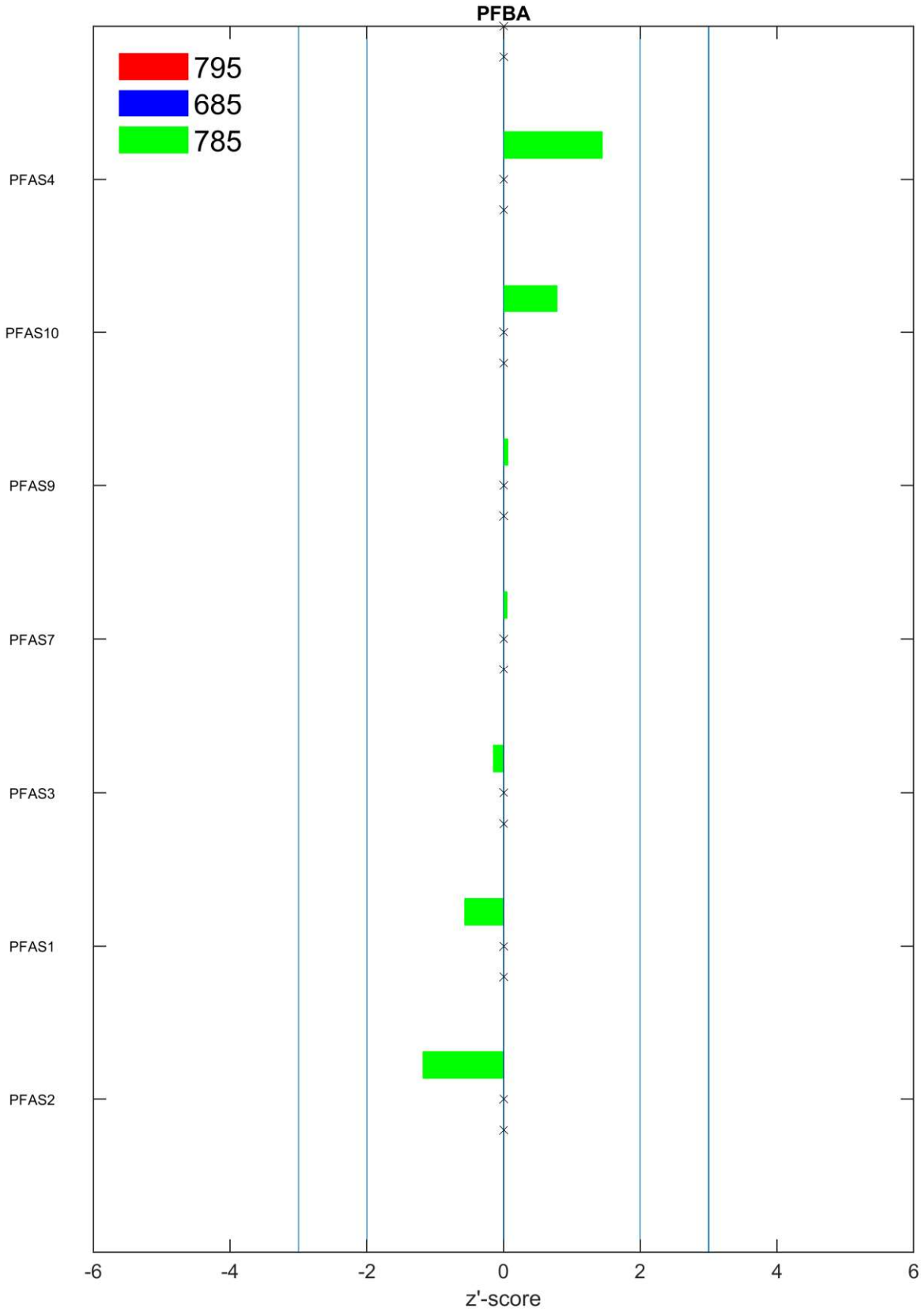
Code	Clean-up and concentrate
-	No Clean-up / No concentration
NC	No clean-up/ concentration factor 5
EB	ENVI carb / incl concentration
Z	Other (specify)

Code	Detection technique
LA	LC/MSMS
LB	UHP LC/MSMS
LC	LC/TQMS ESI-neg
LD	LC/MSMS QqQ
Z	Other (specify)

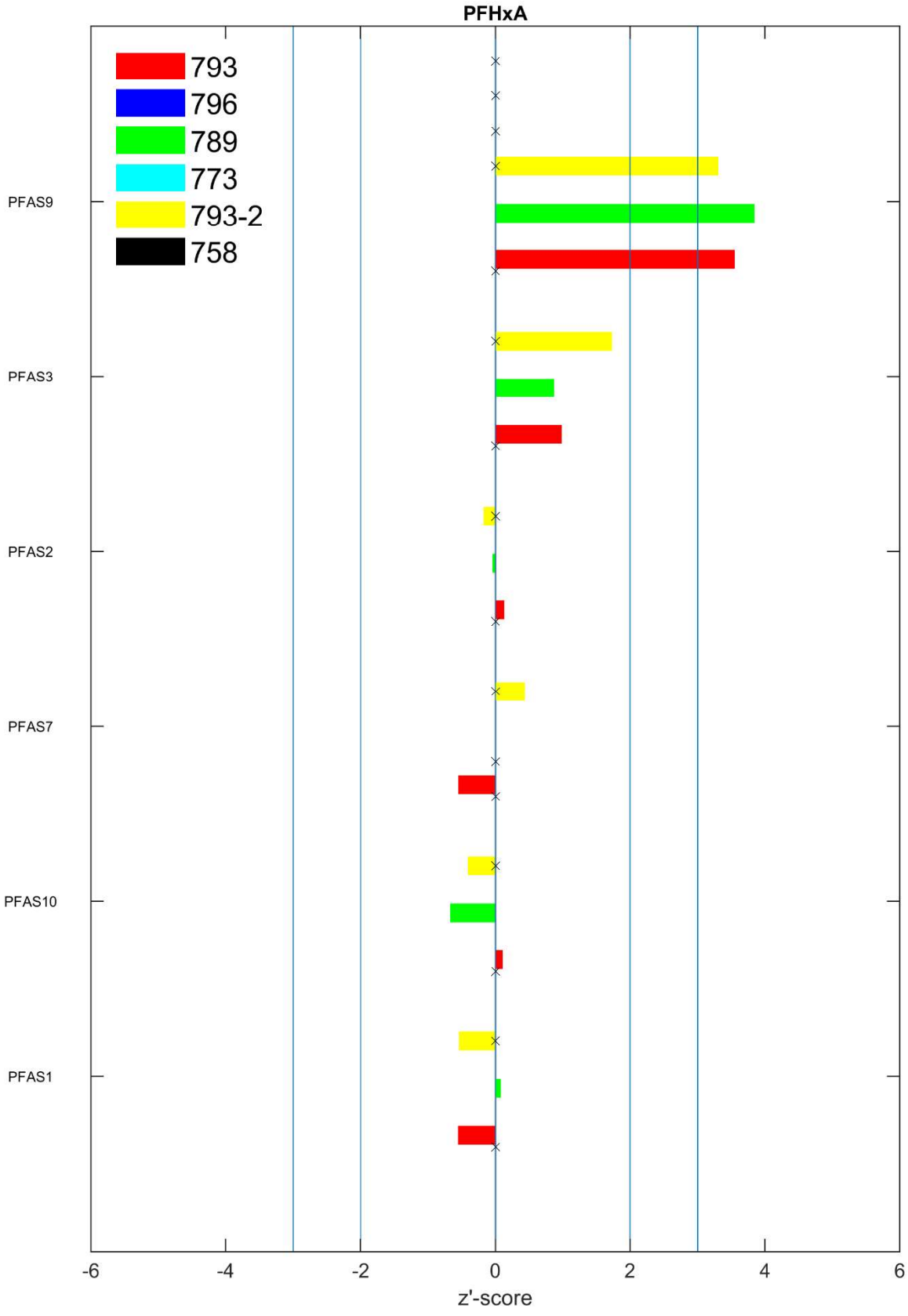
Per- and Polyfluoroalkyl substances z'-scores-values



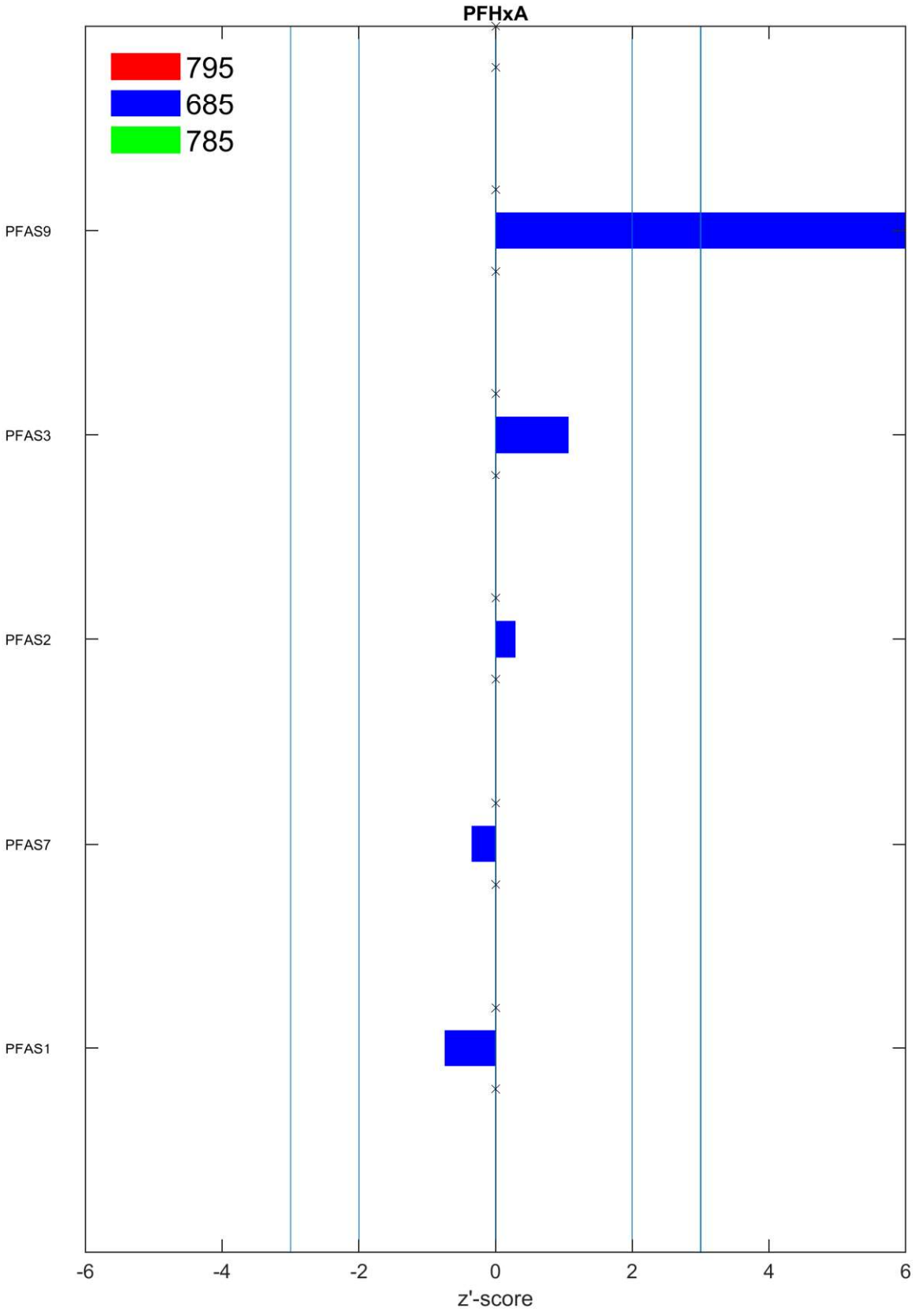
Per- and Polyfluoroalkyl substances z'-scores-values



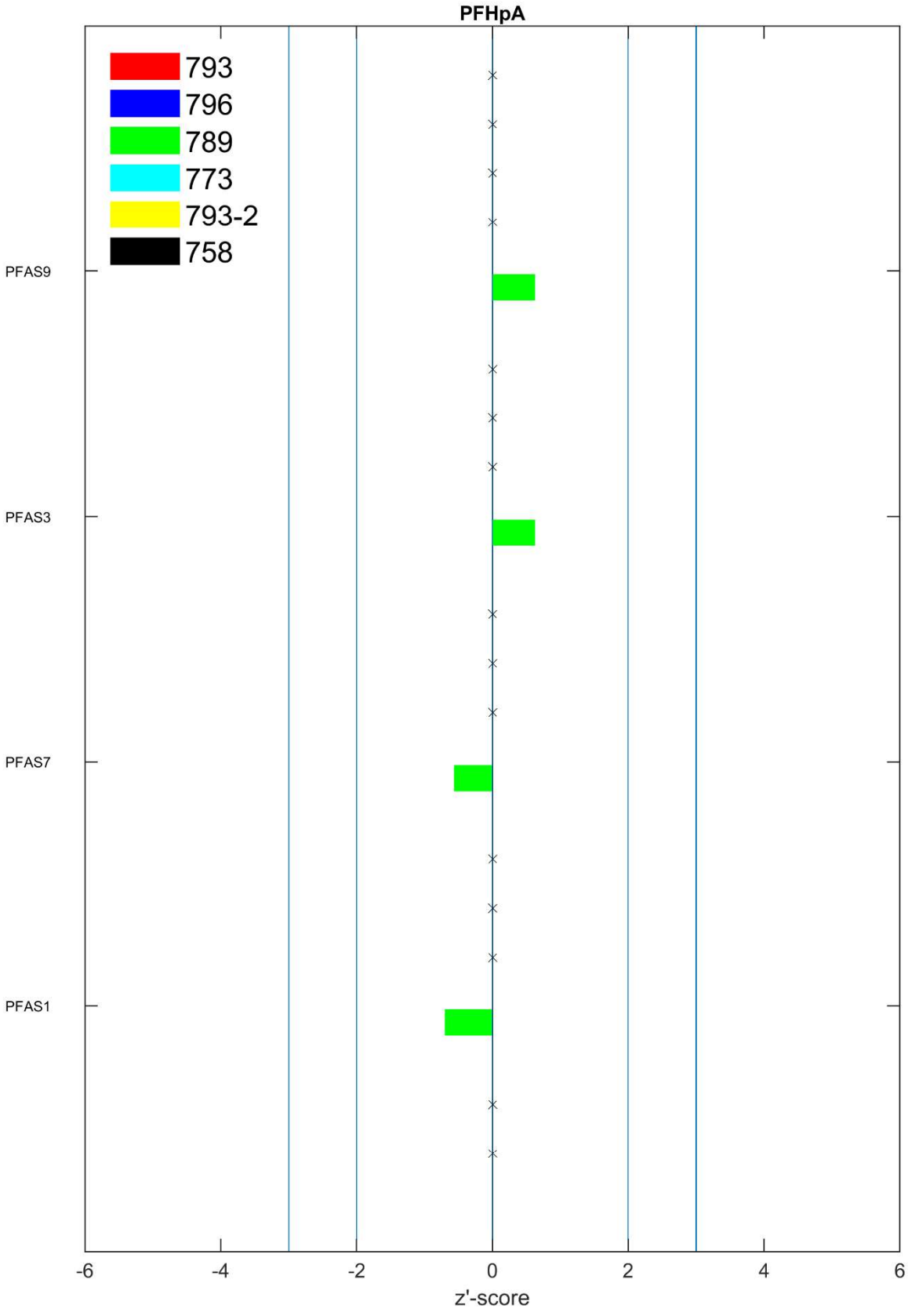
Per- and Polyfluoroalkyl substances z'-scores-values



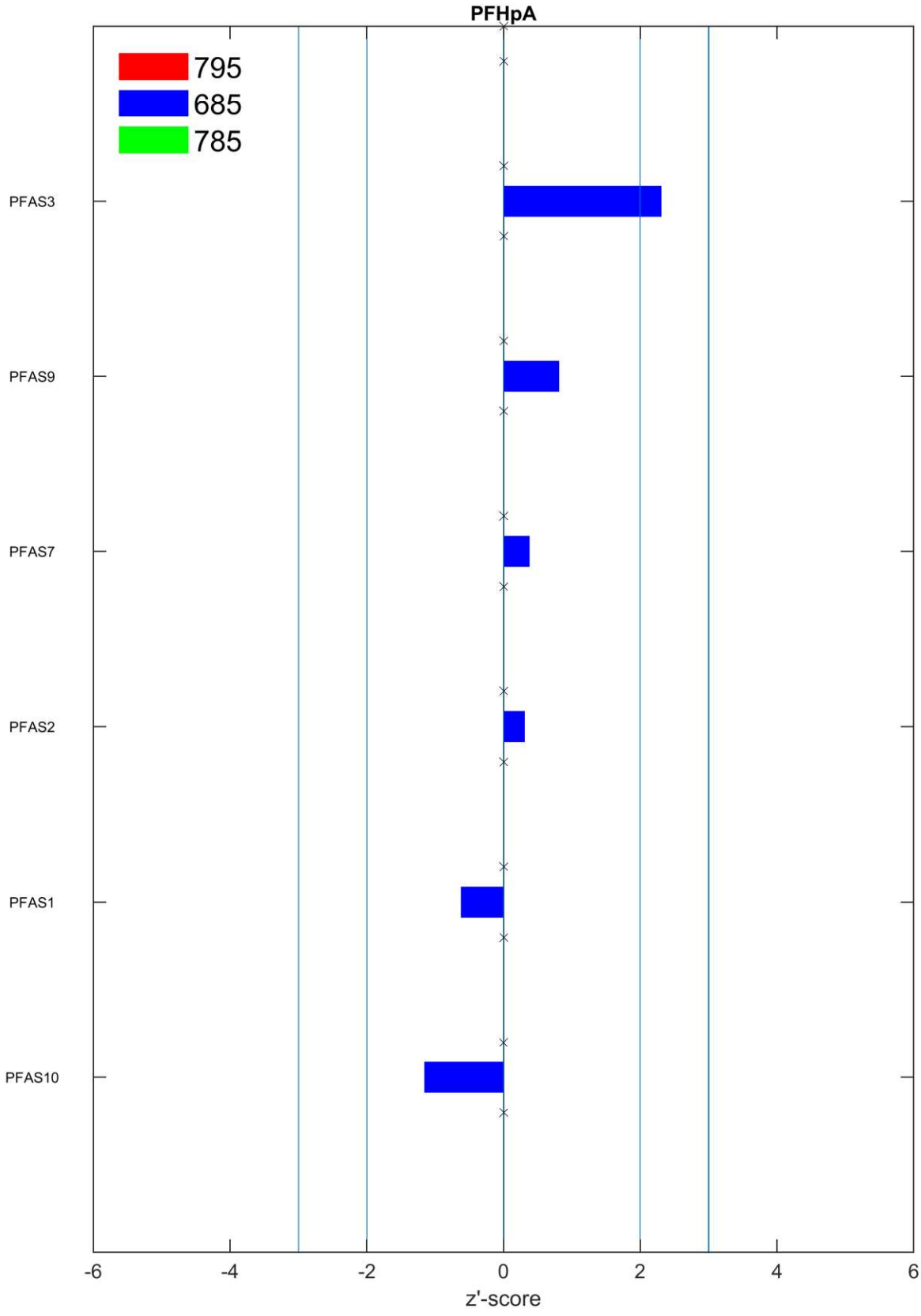
Per- and Polyfluoroalkyl substances z'-scores-values



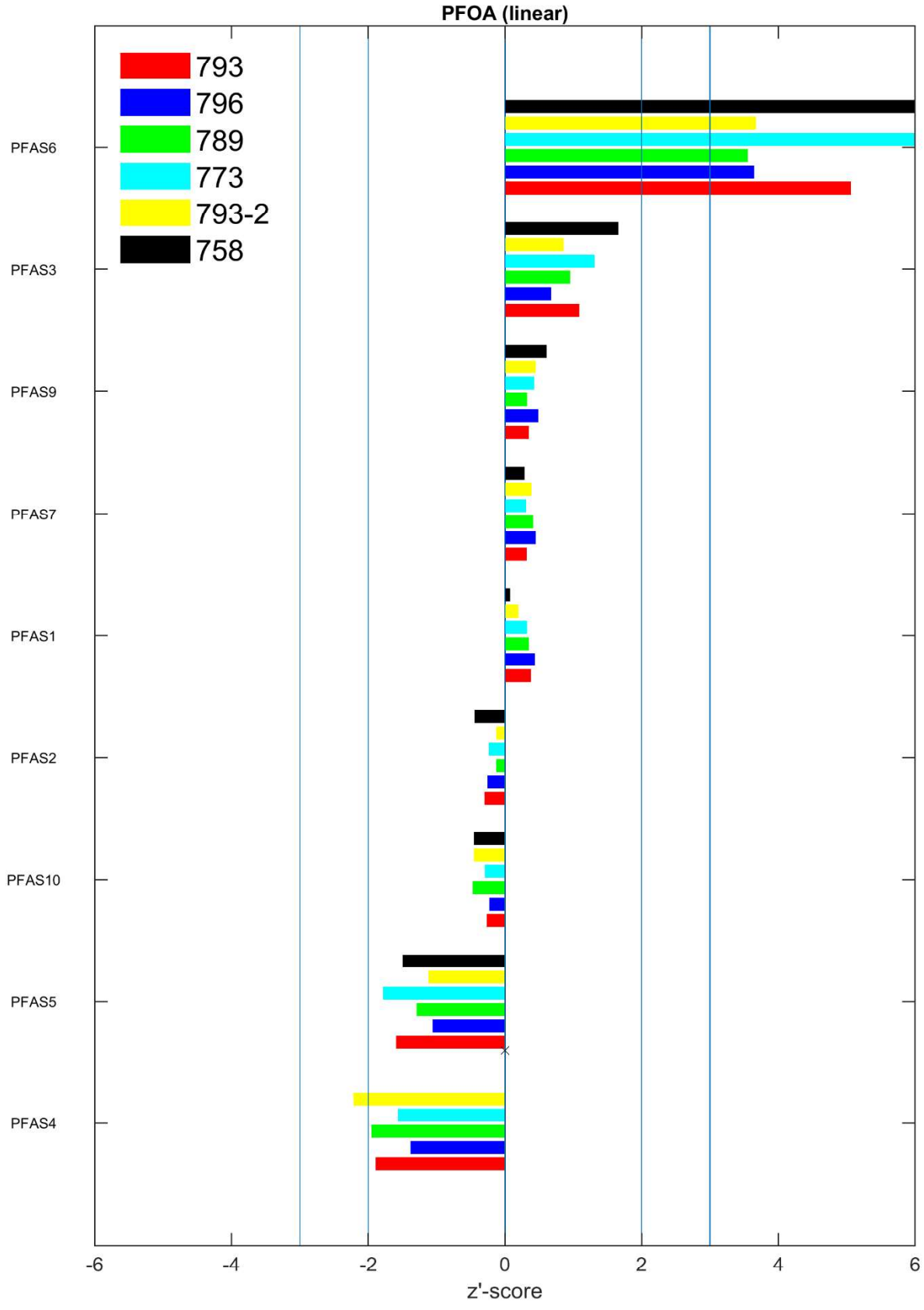
Per- and Polyfluoroalkyl substances z'-scores-values



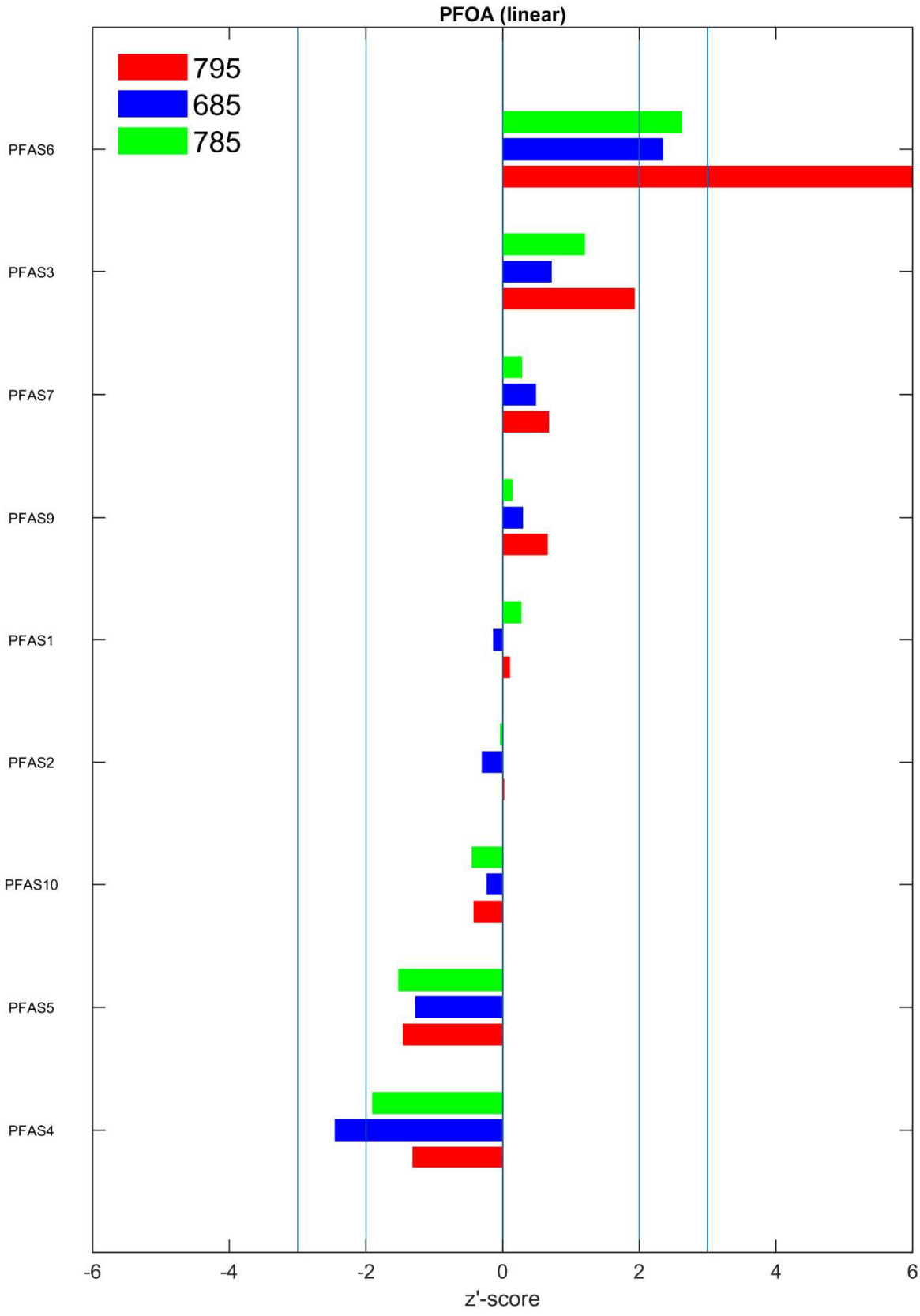
Per- and Polyfluoroalkyl substances z'-scores-values



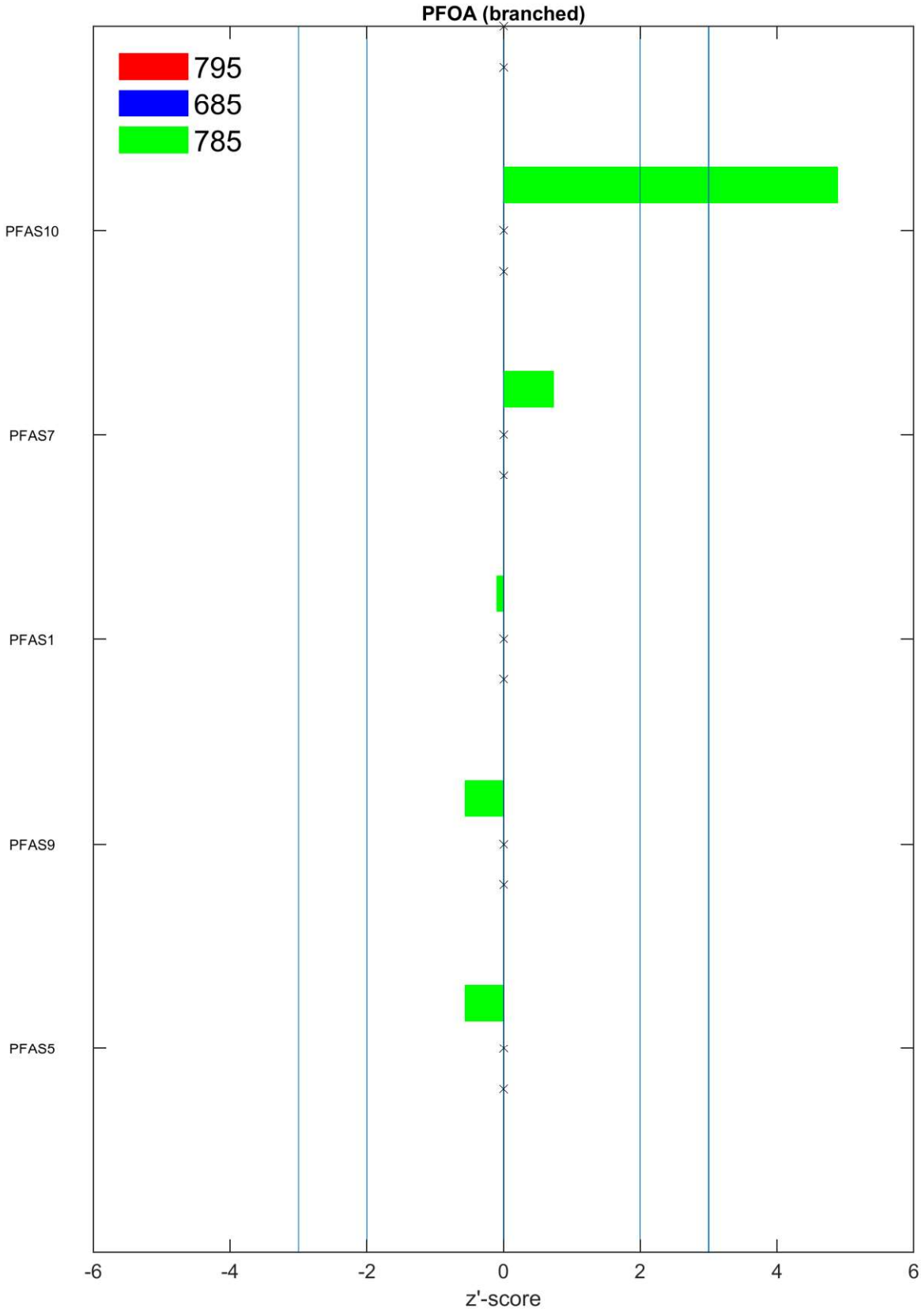
Per- and Polyfluoroalkyl substances z'-scores-values



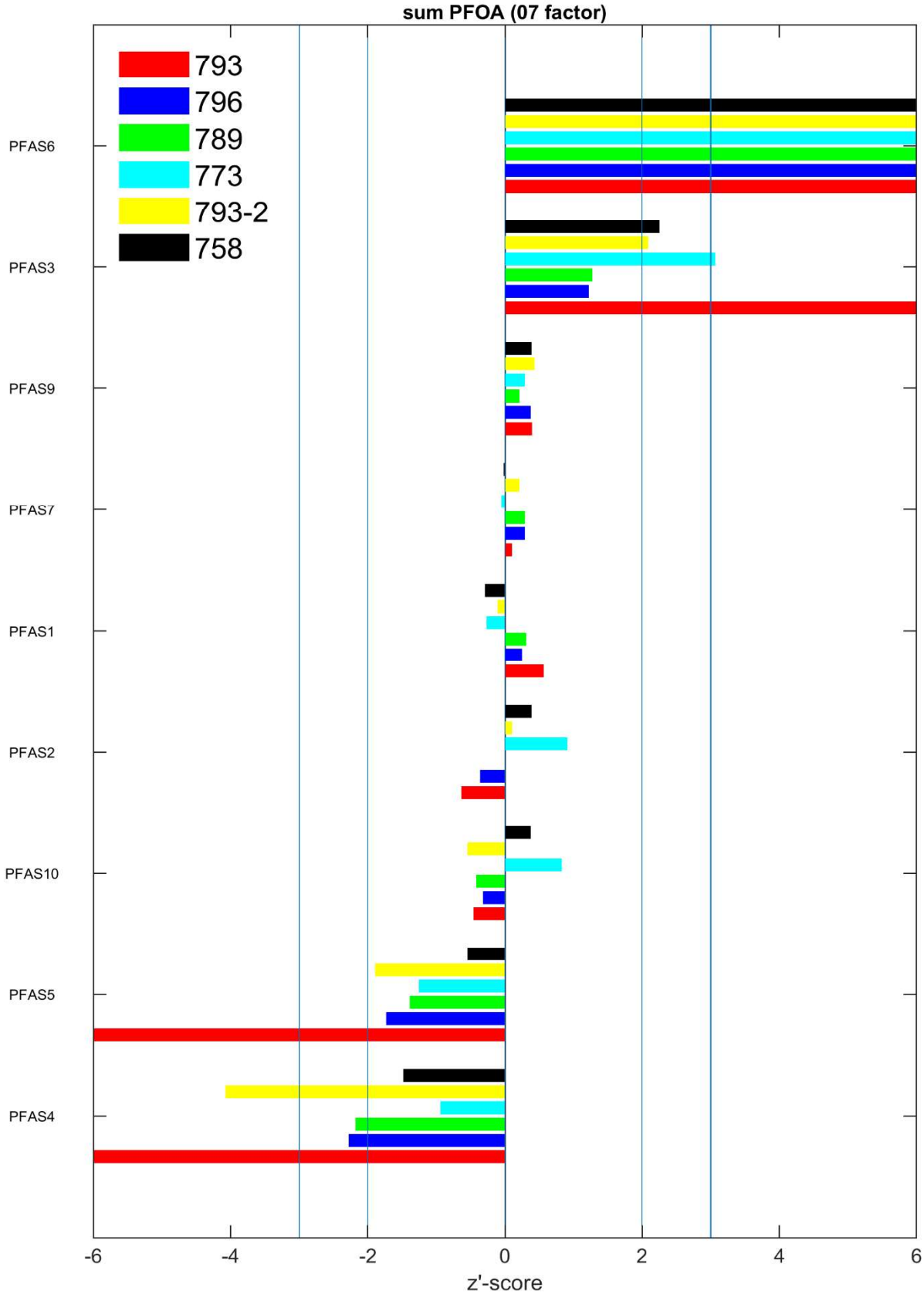
Per- and Polyfluoroalkyl substances z'-scores-values



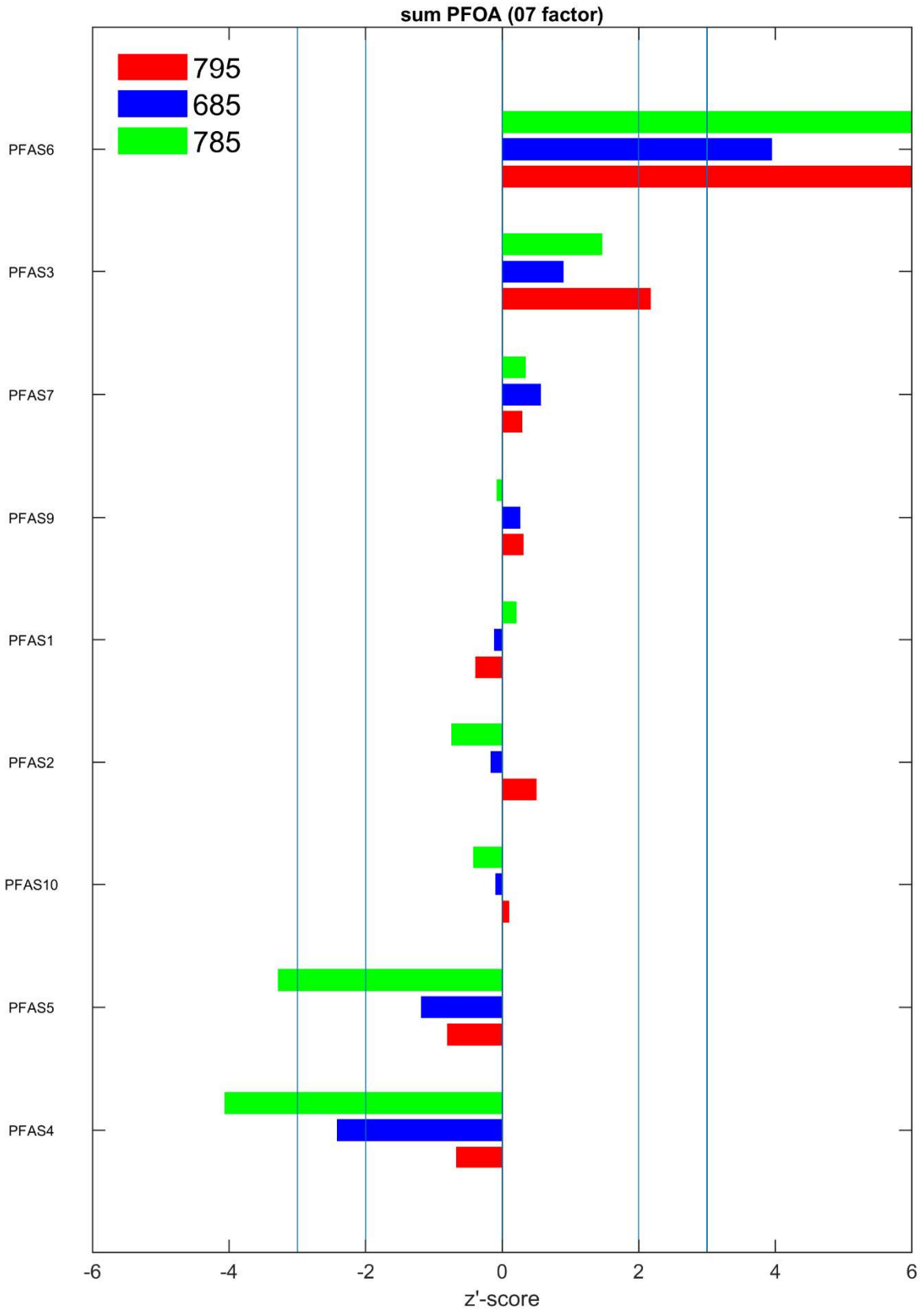
Per- and Polyfluoroalkyl substances z'-scores-values



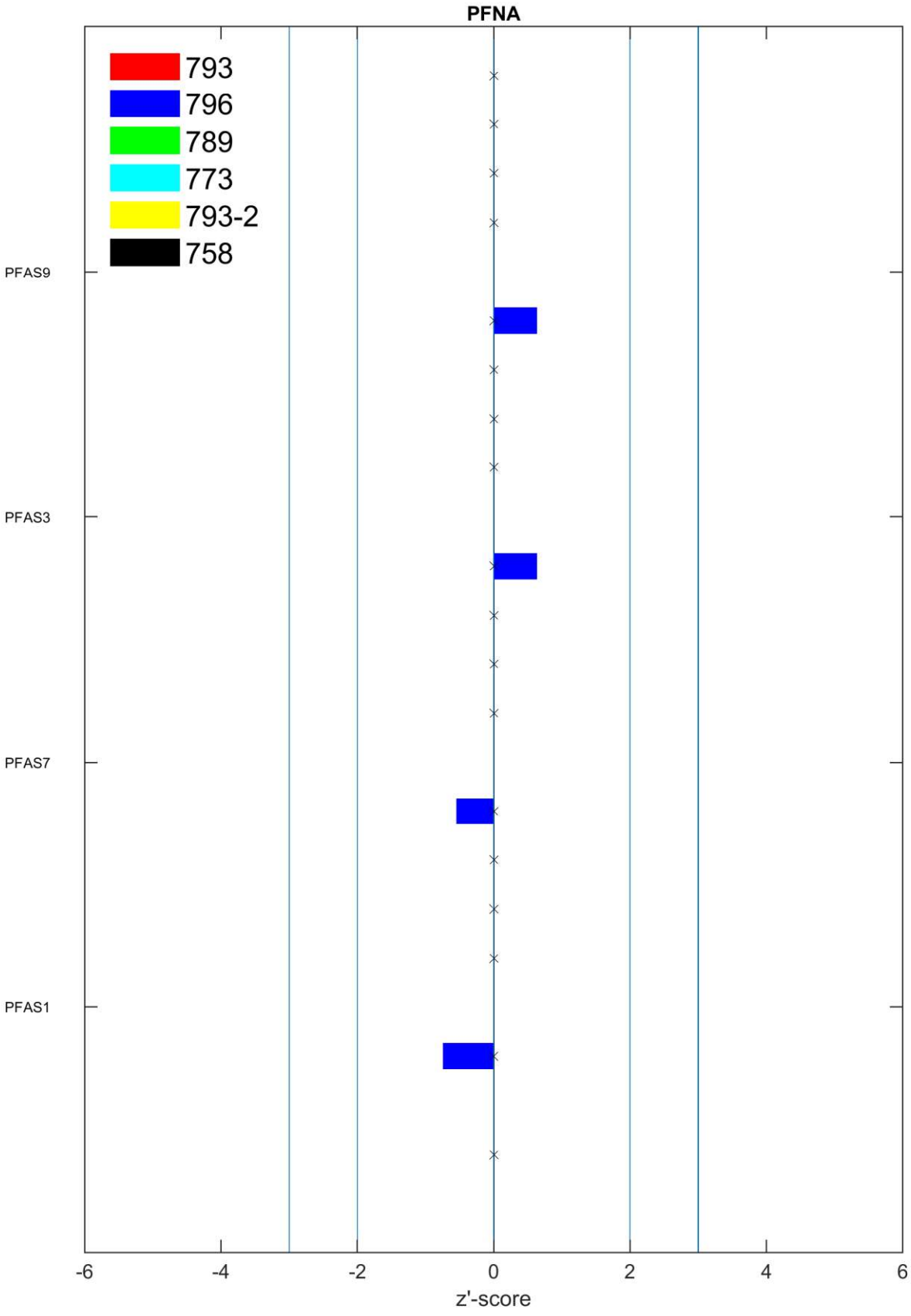
Per- and Polyfluoroalkyl substances z'-scores-values



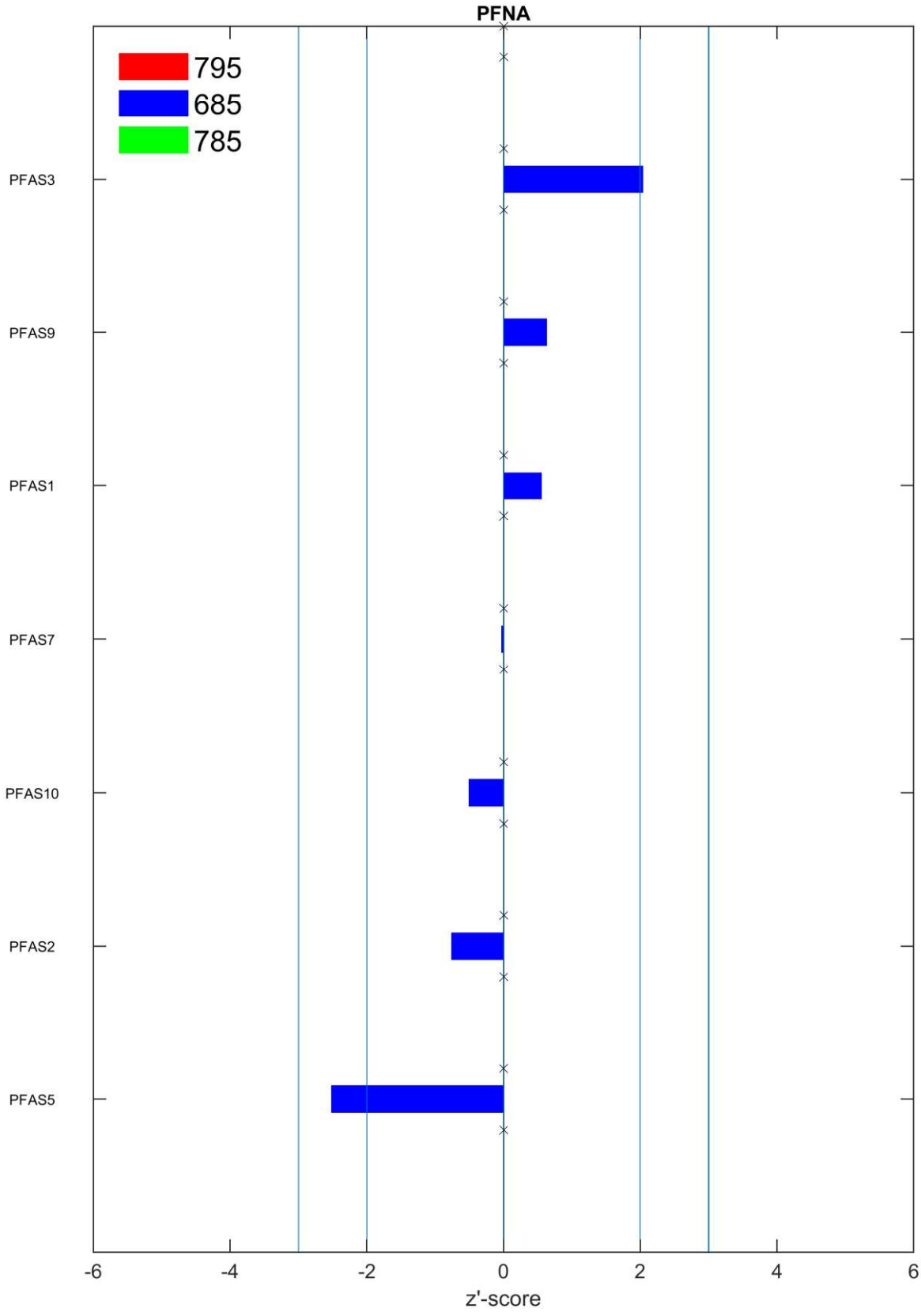
Per- and Polyfluoroalkyl substances z'-scores-values



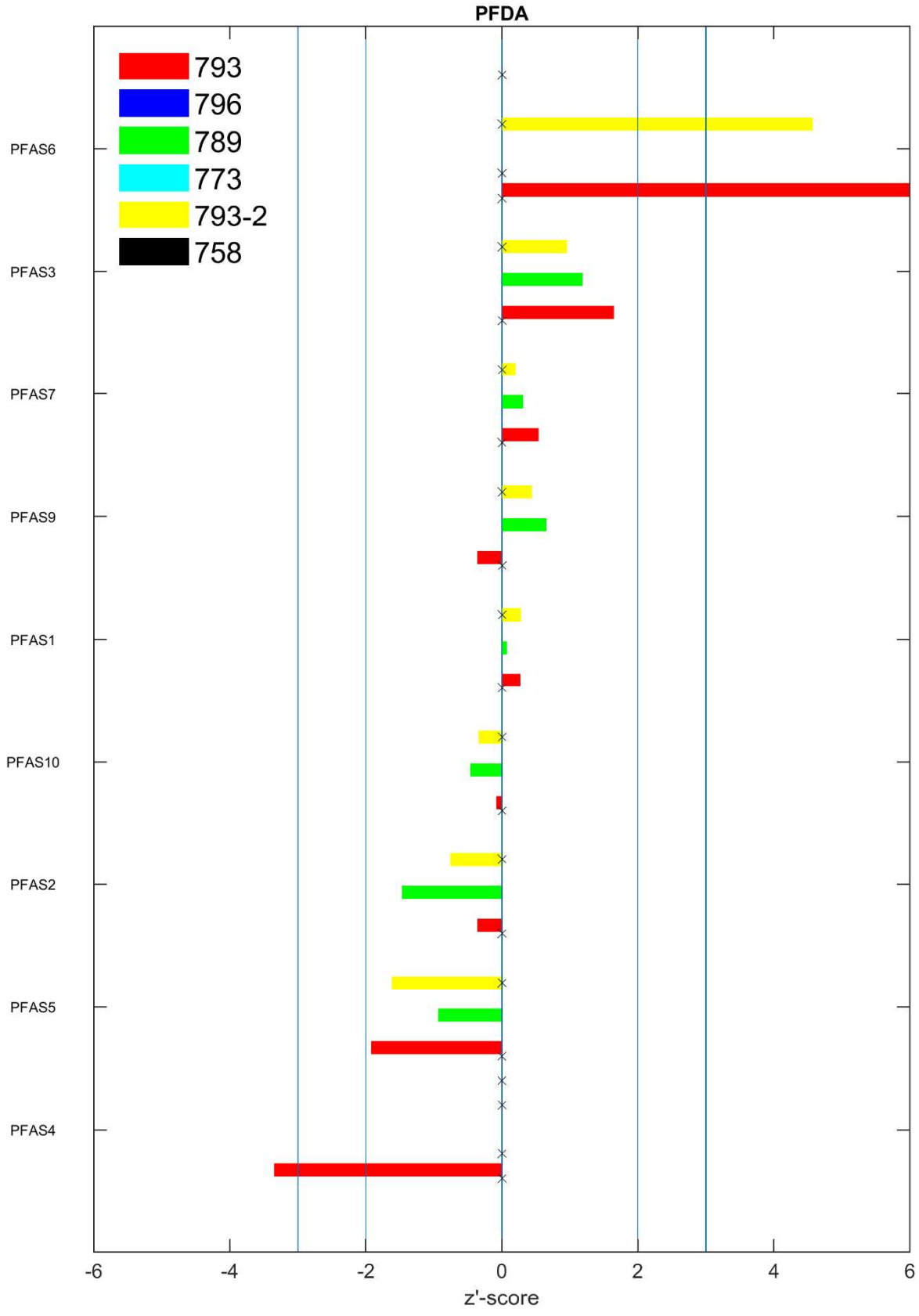
Per- and Polyfluoroalkyl substances z'-scores-values



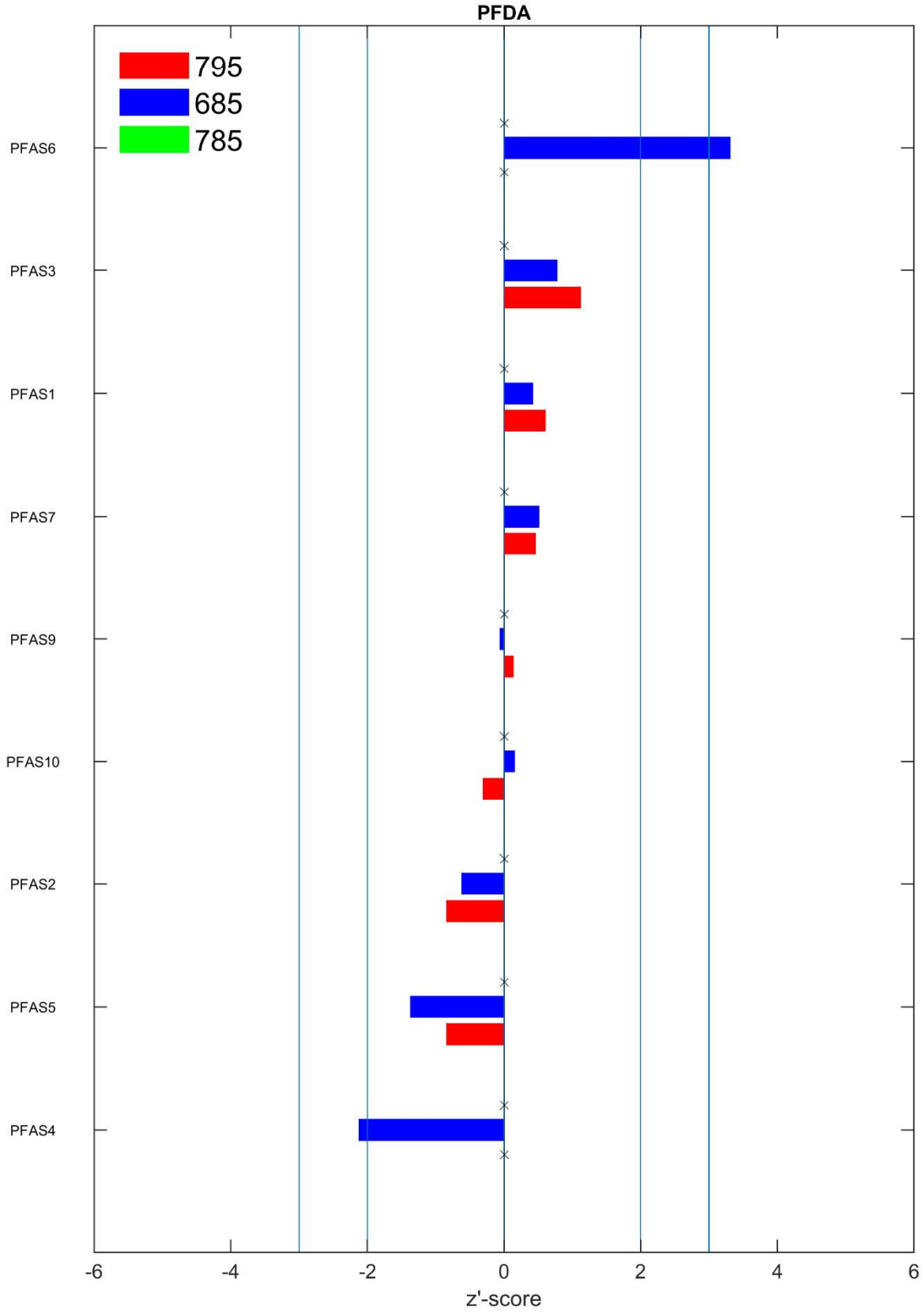
Per- and Polyfluoroalkyl substances z'-scores-values



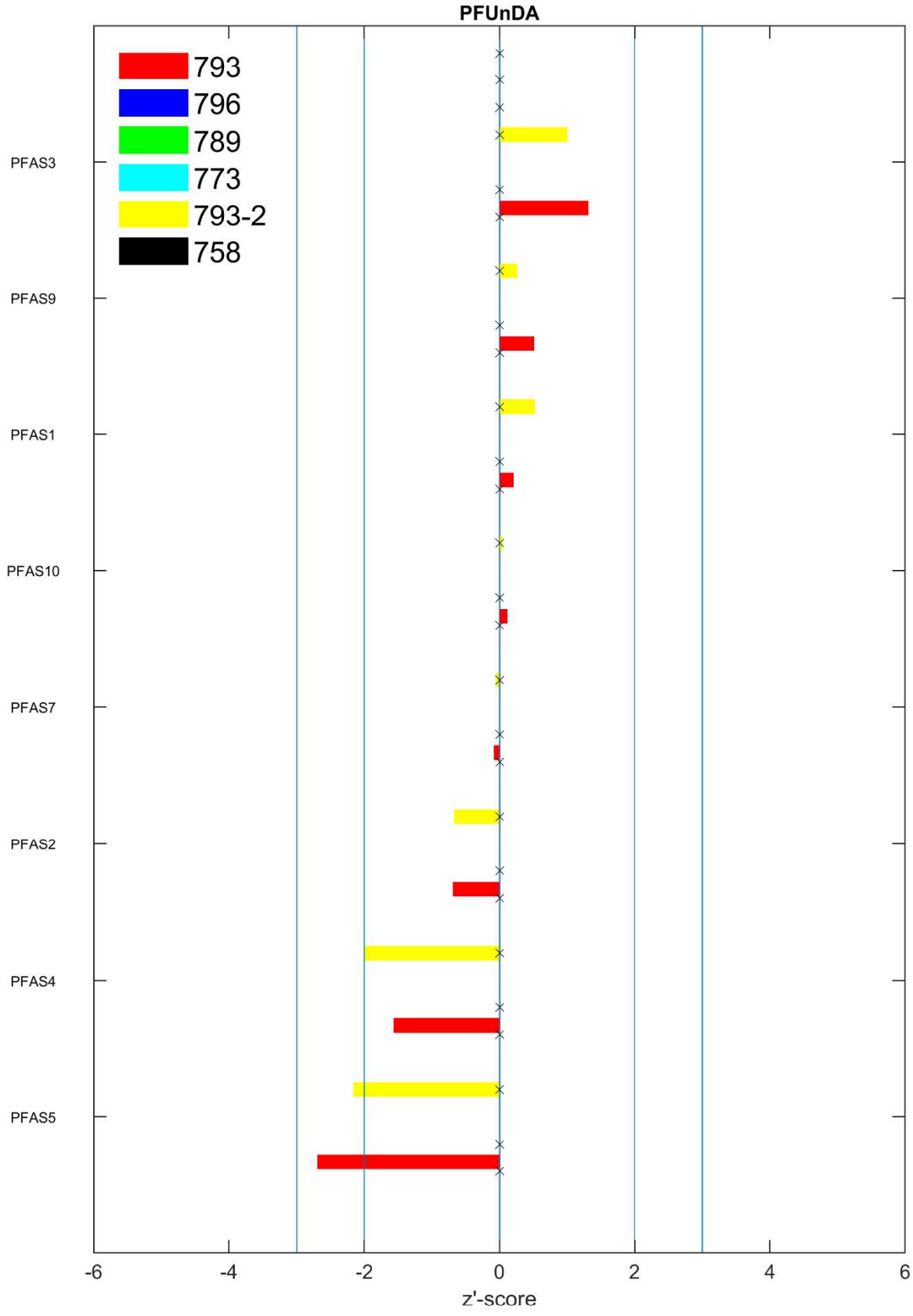
Per- and Polyfluoroalkyl substances z'-scores-values



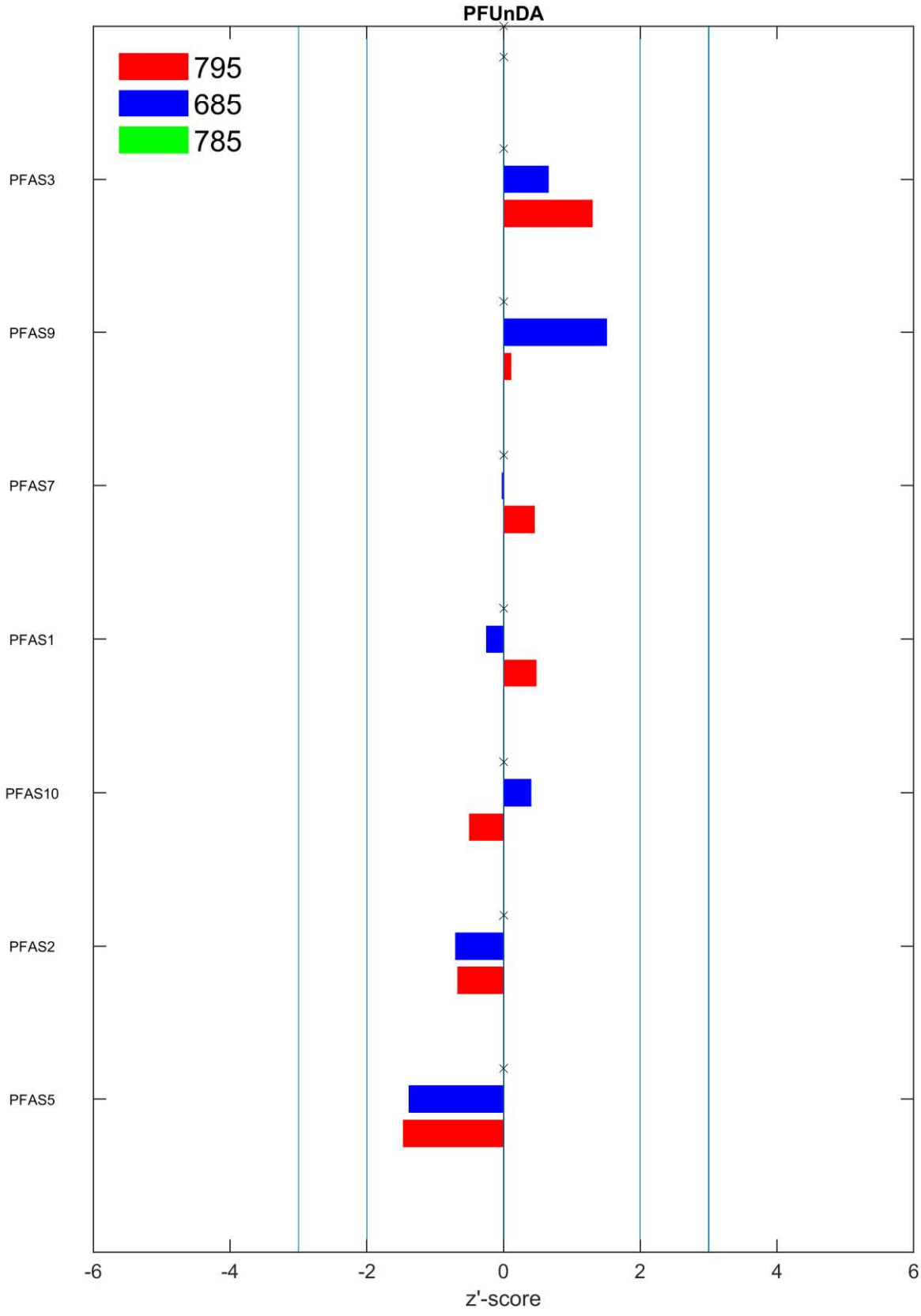
Per- and Polyfluoroalkyl substances z'-scores-values



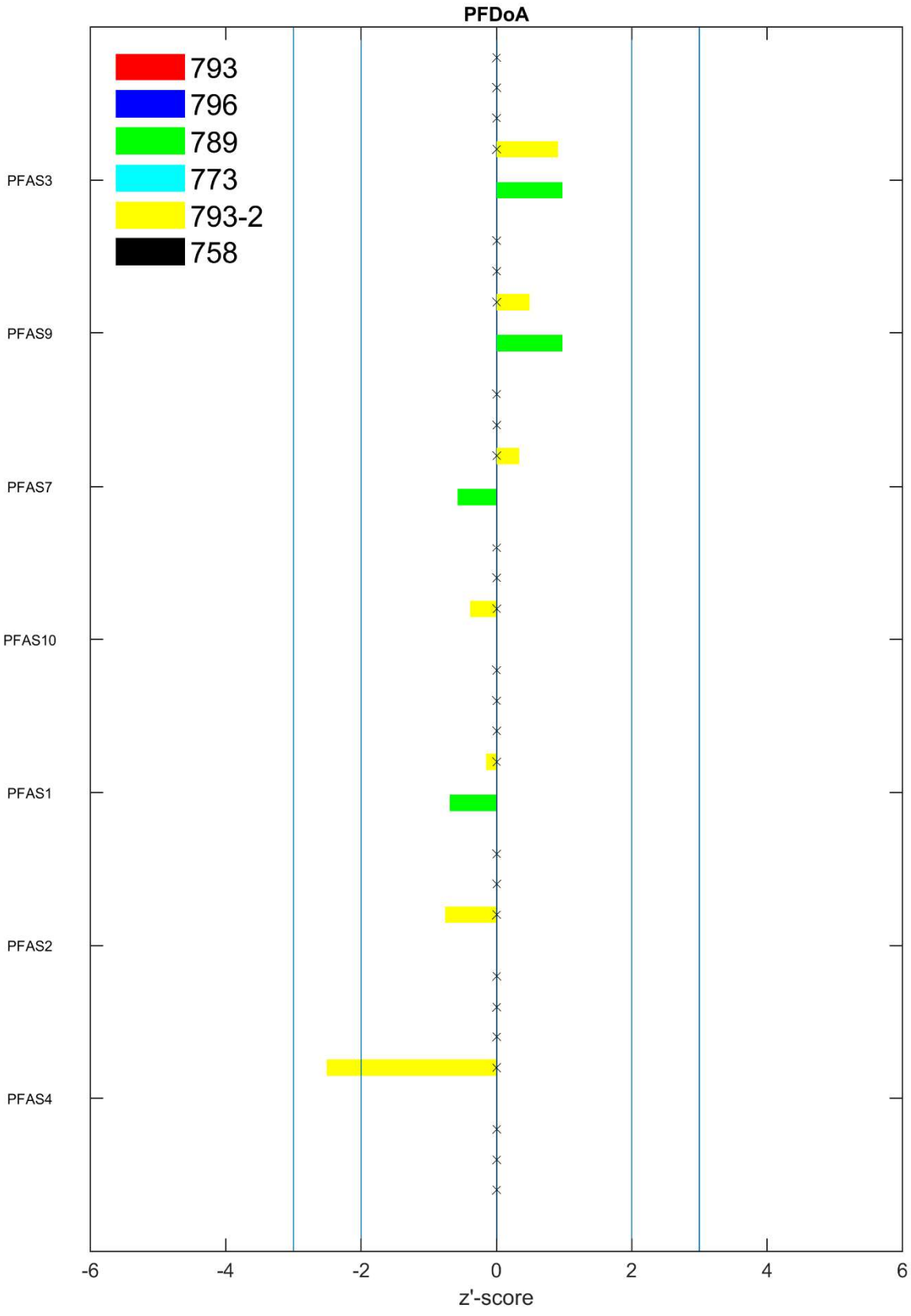
Per- and Polyfluoroalkyl substances z'-scores-values



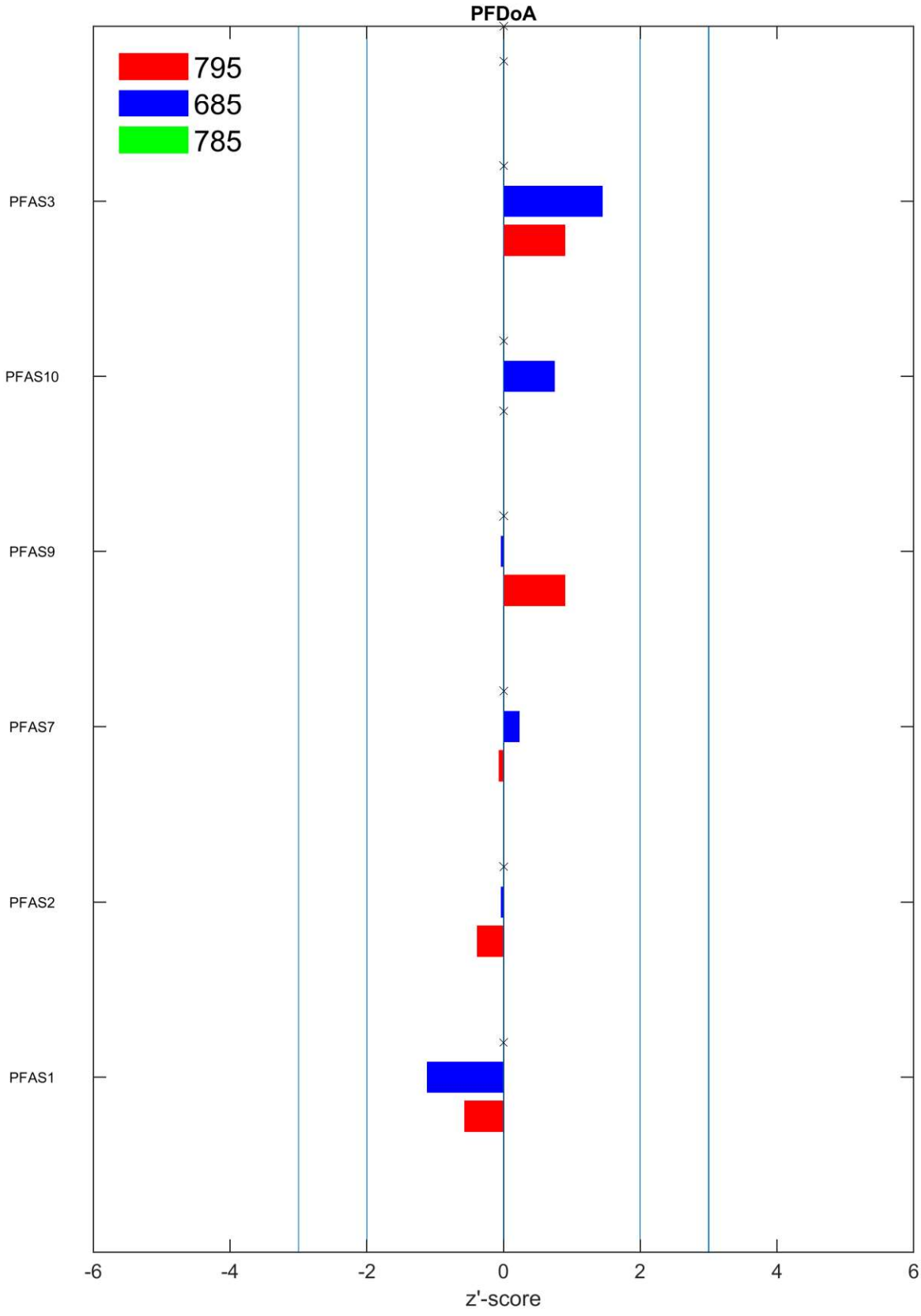
Per- and Polyfluoroalkyl substances z'-scores-values



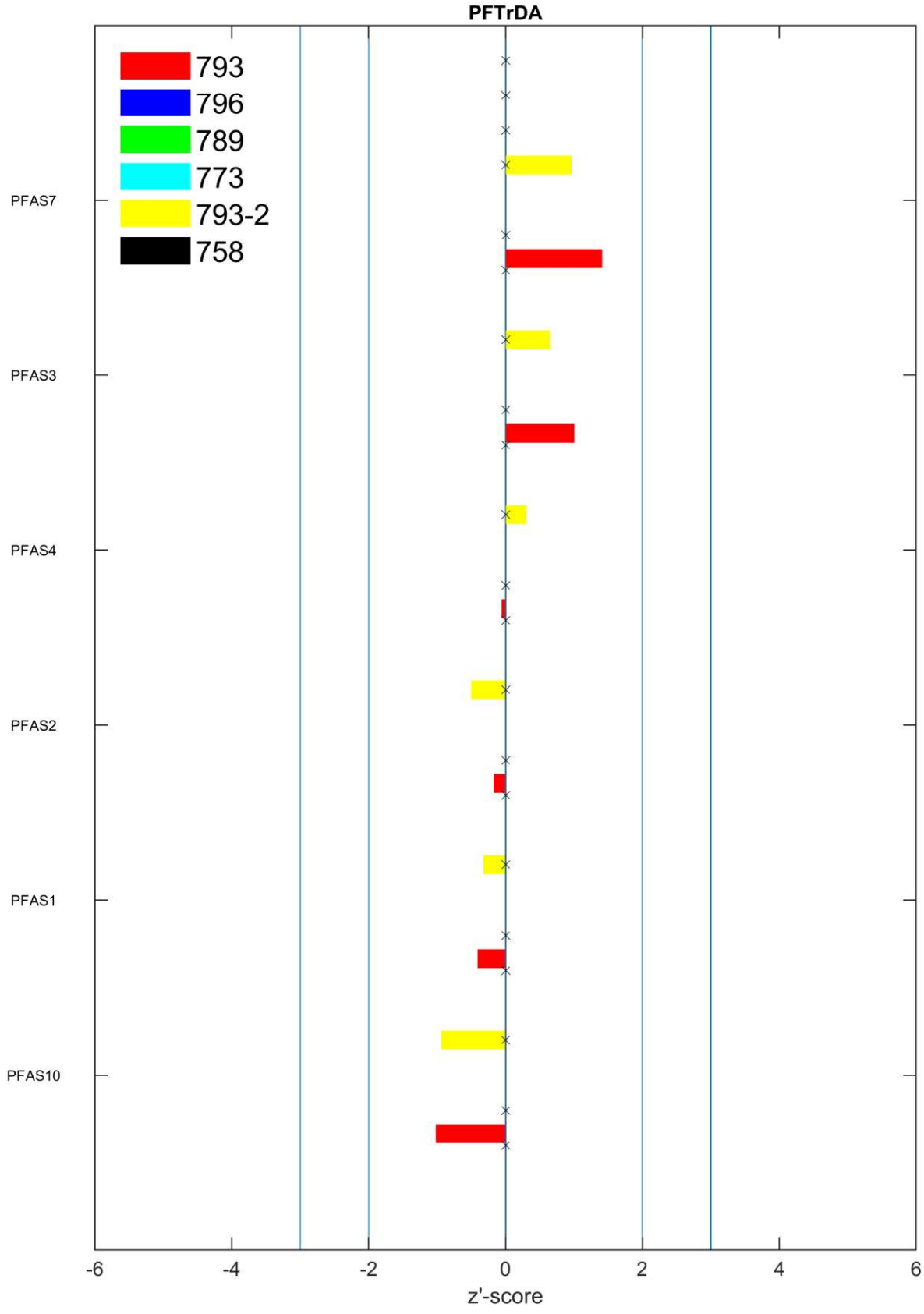
Per- and Polyfluoroalkyl substances z'-scores-values



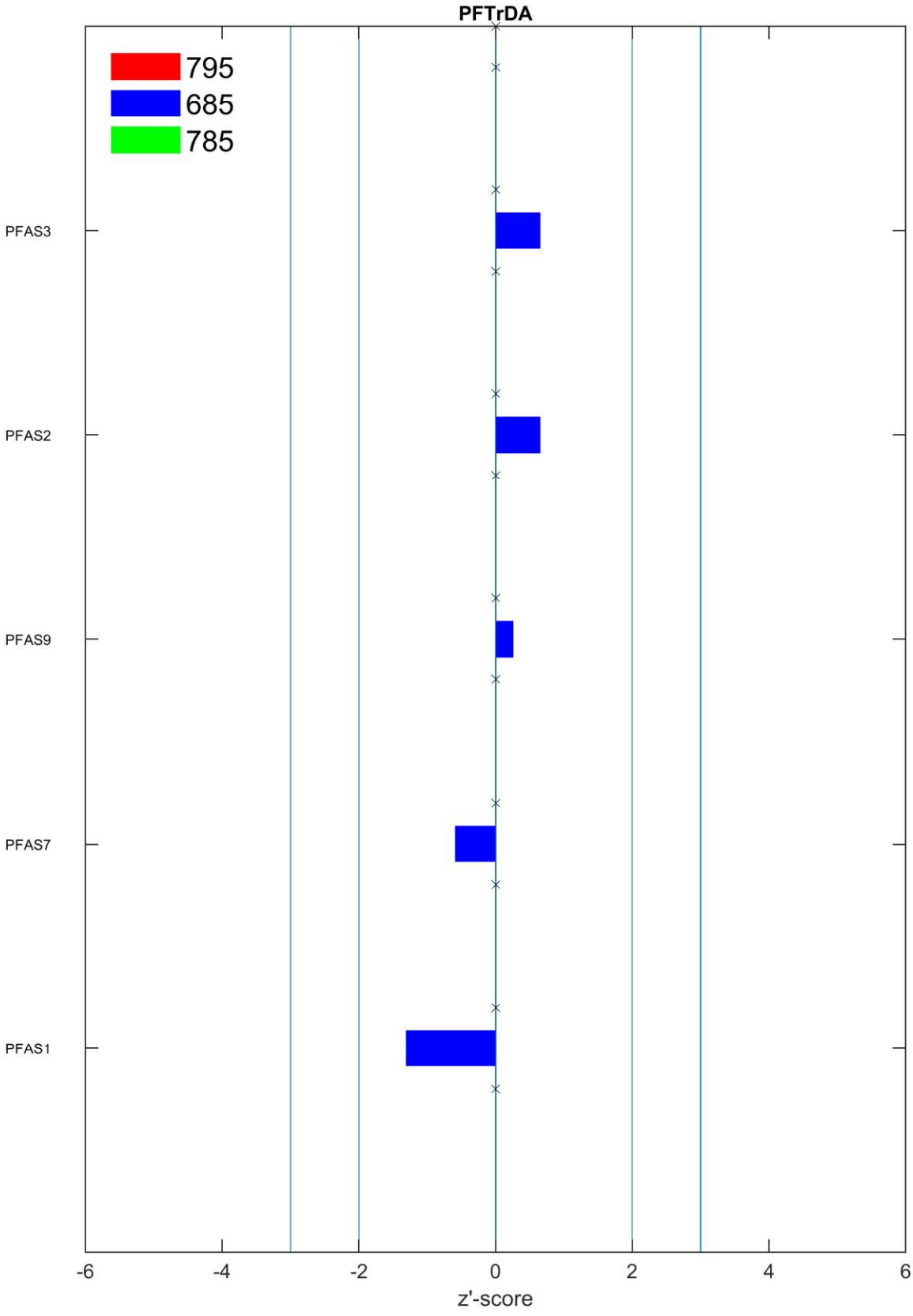
Per- and Polyfluoroalkyl substances z'-scores-values



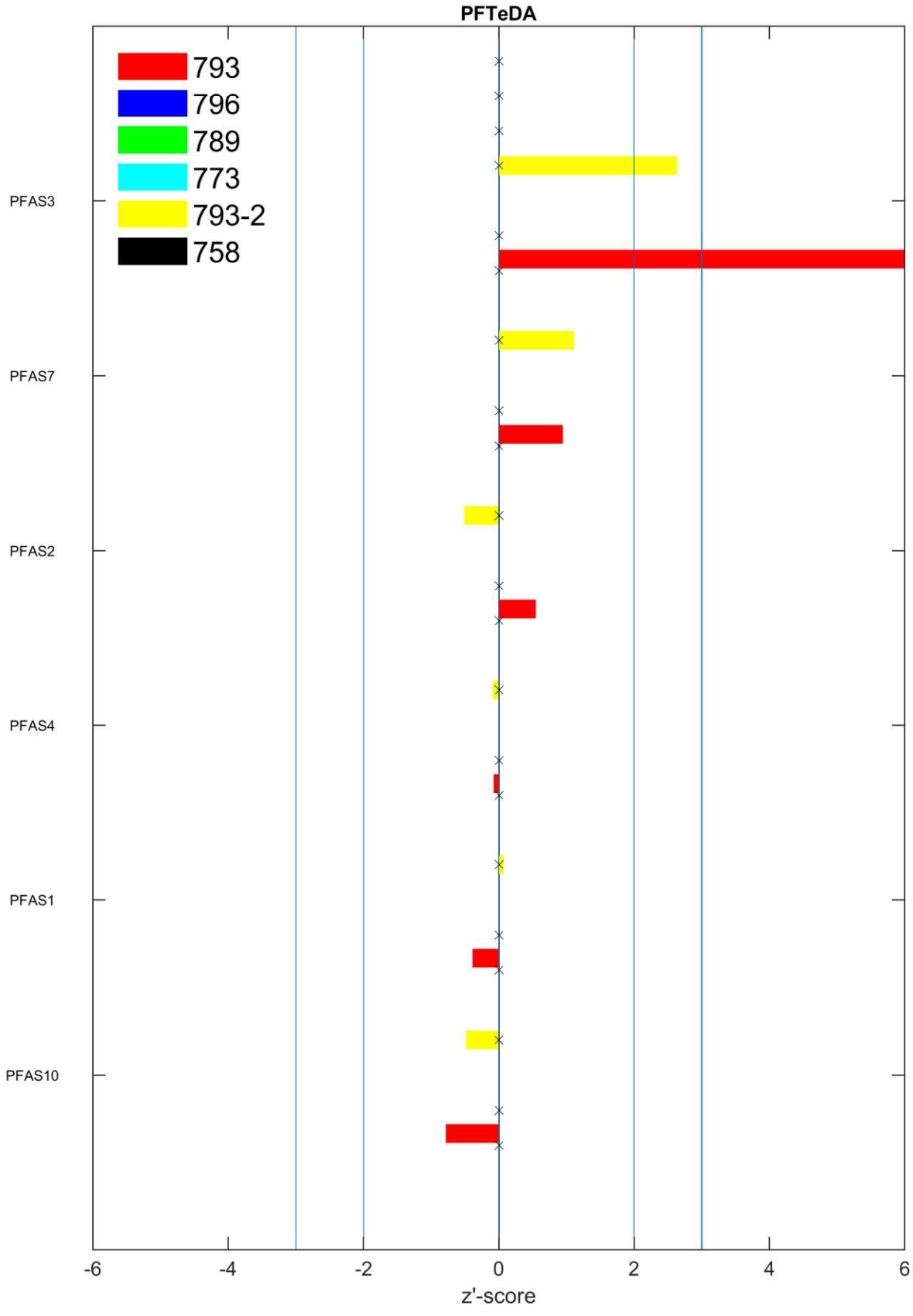
Per- and Polyfluoroalkyl substances z'-scores-values



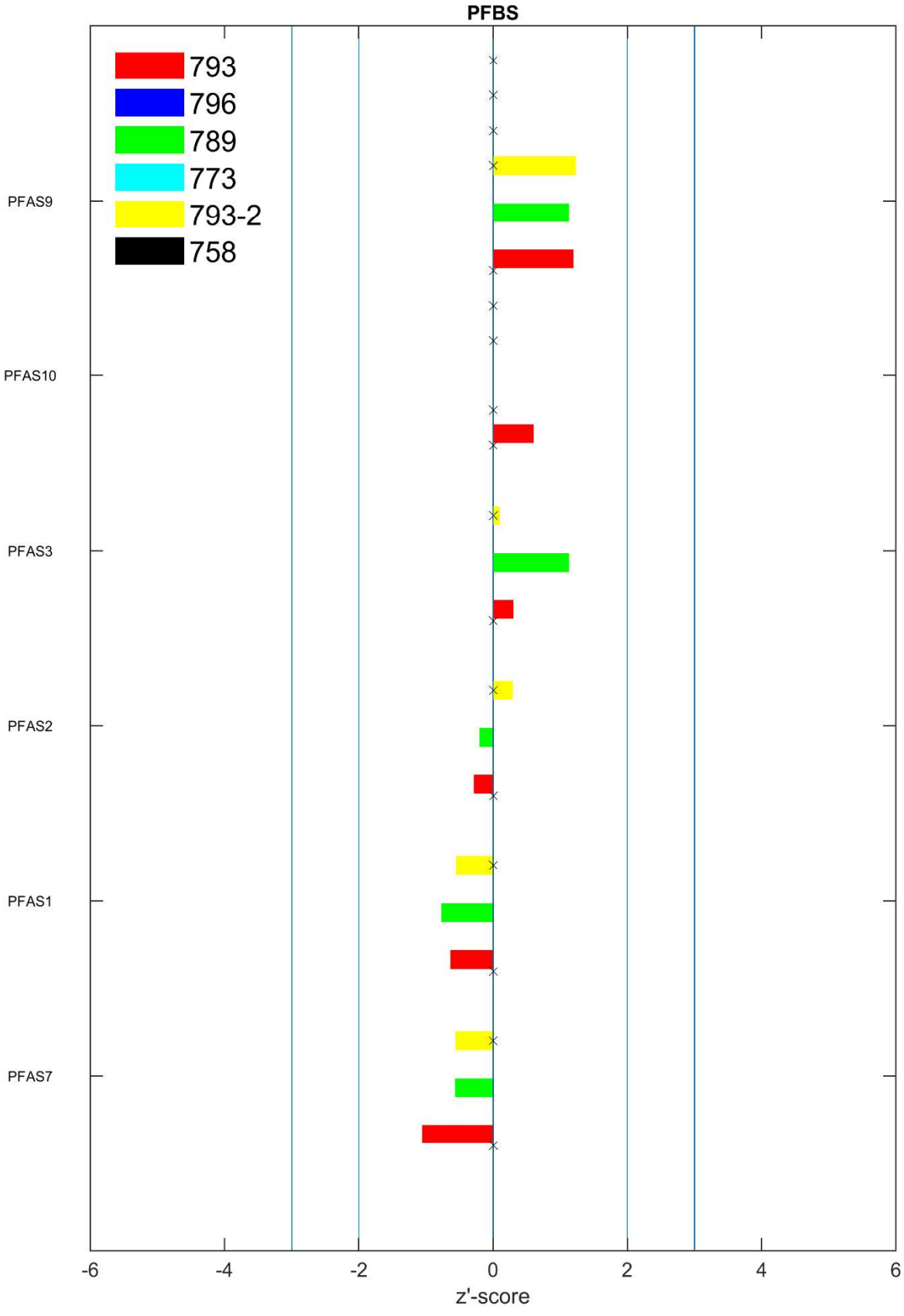
Per- and Polyfluoroalkyl substances z'-scores-values



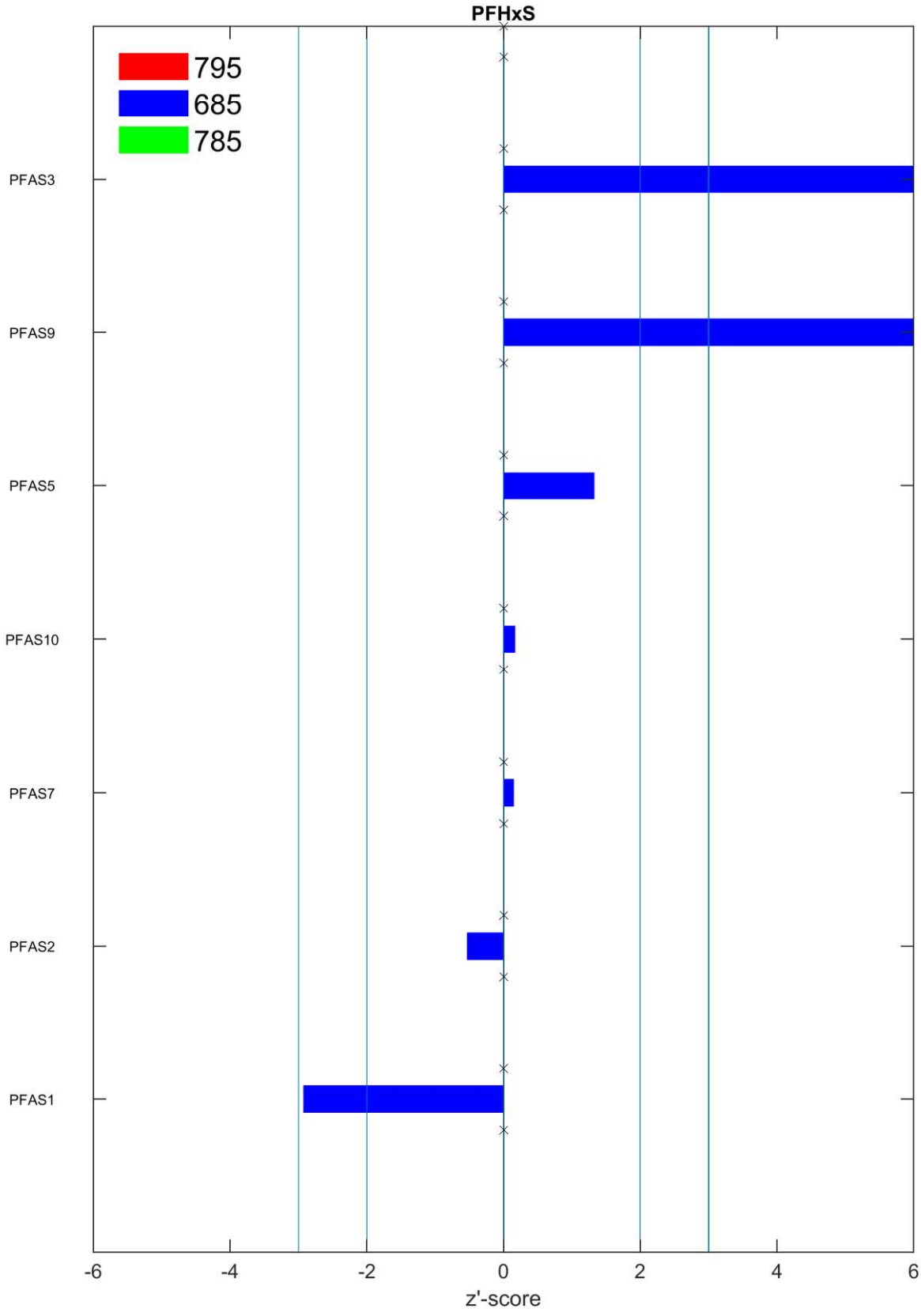
Per- and Polyfluoroalkyl substances z'-scores-values



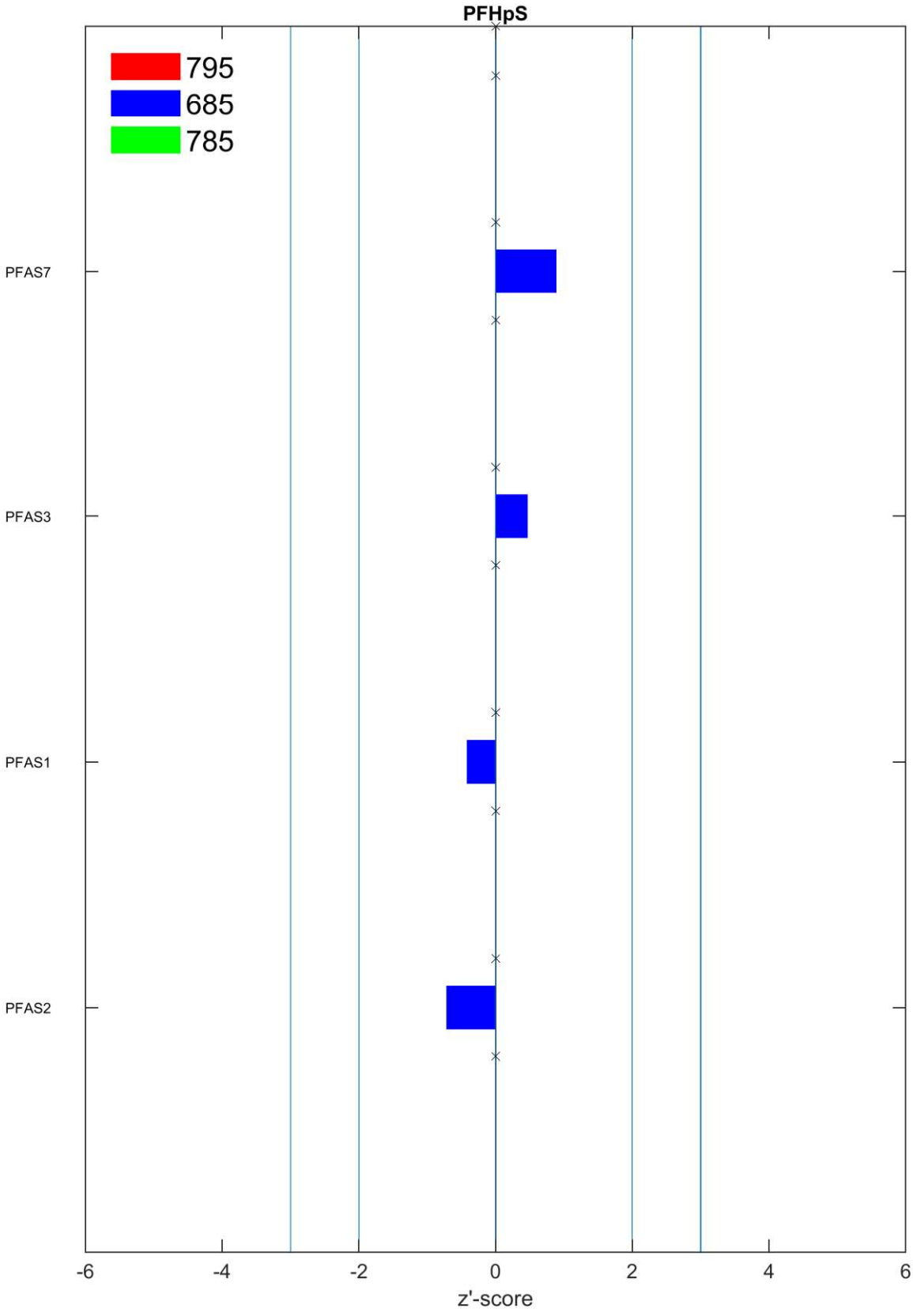
Per- and Polyfluoroalkyl substances z'-scores-values



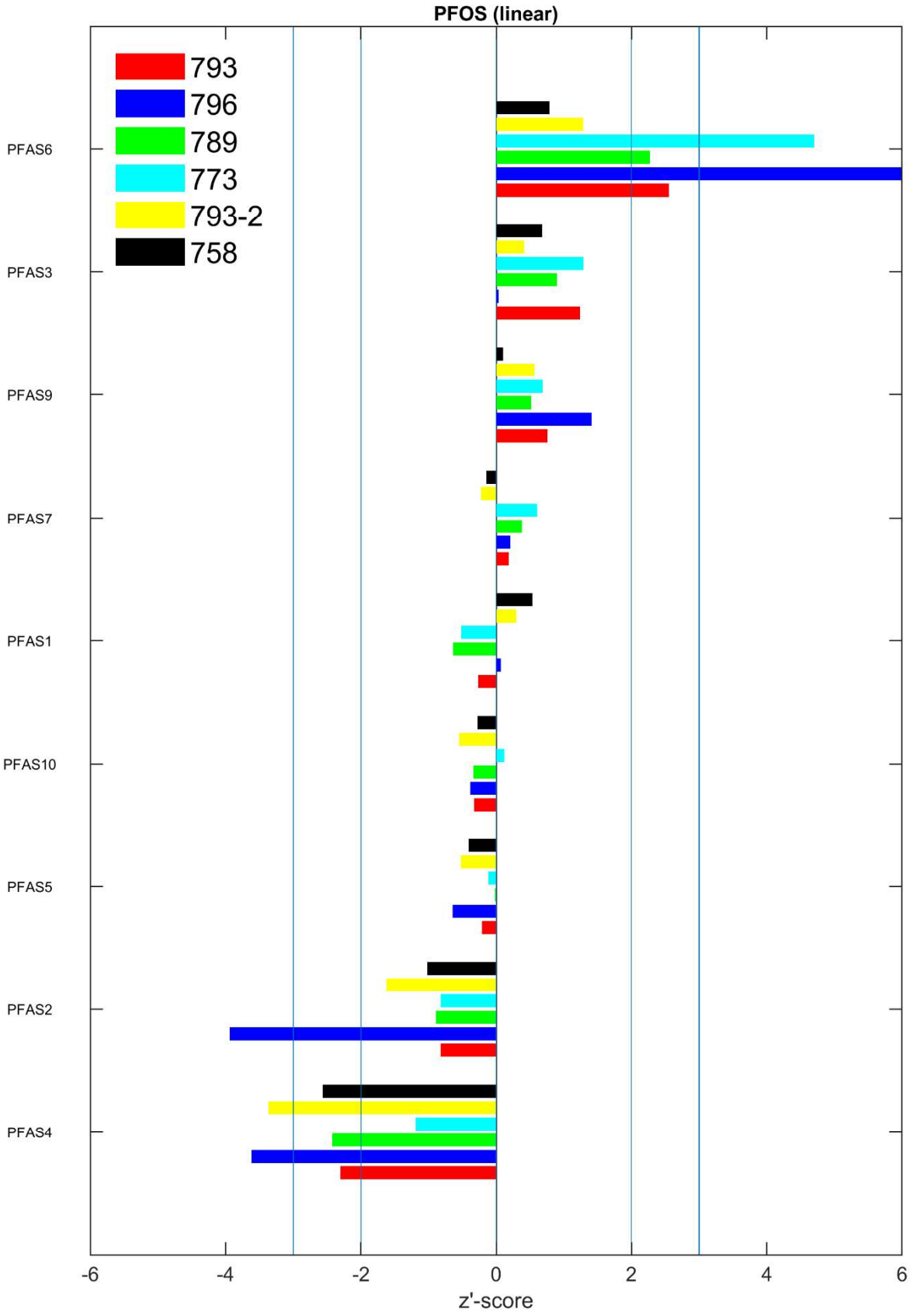
Per- and Polyfluoroalkyl substances z'-scores-values



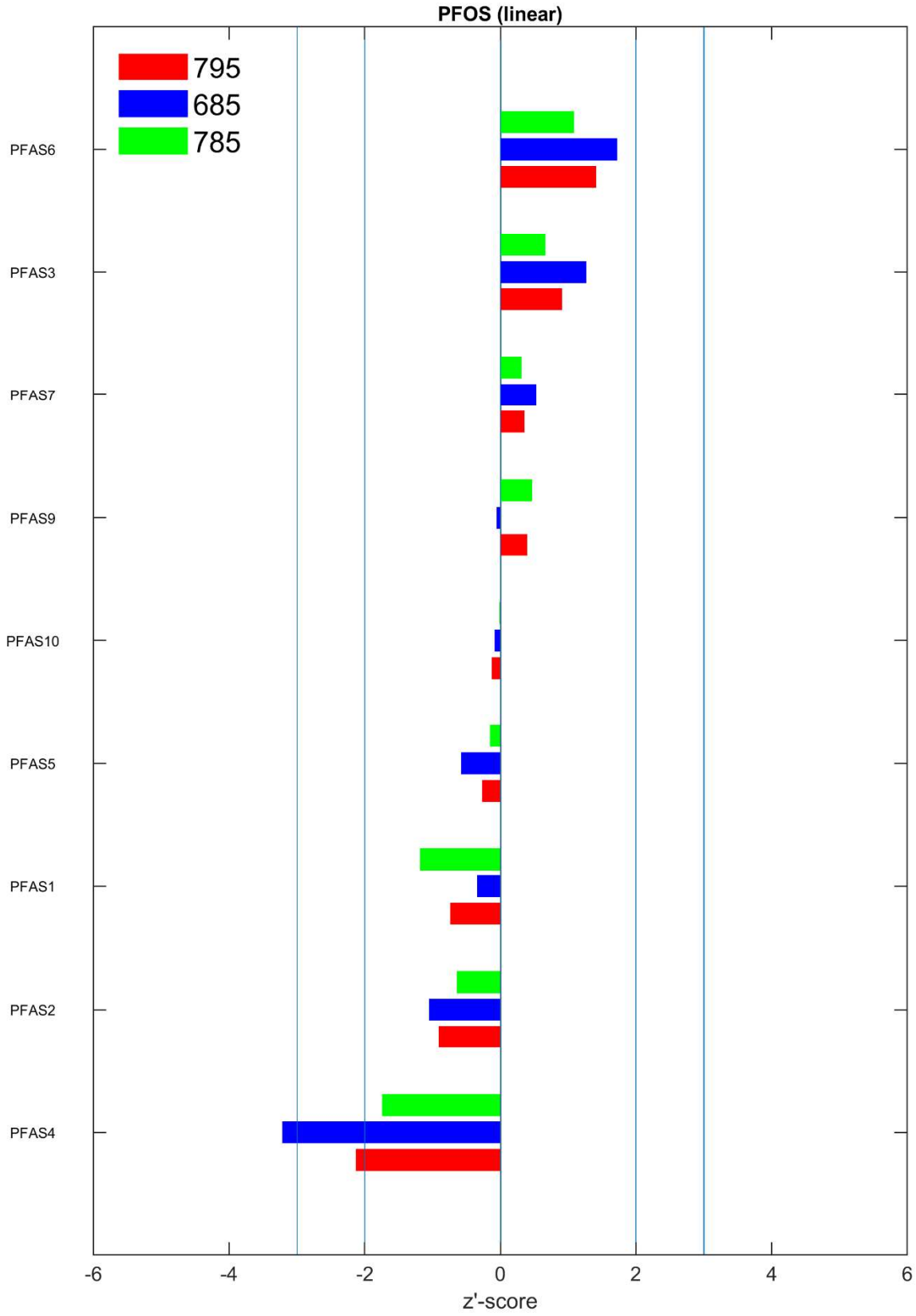
Per- and Polyfluoroalkyl substances z'-scores-values



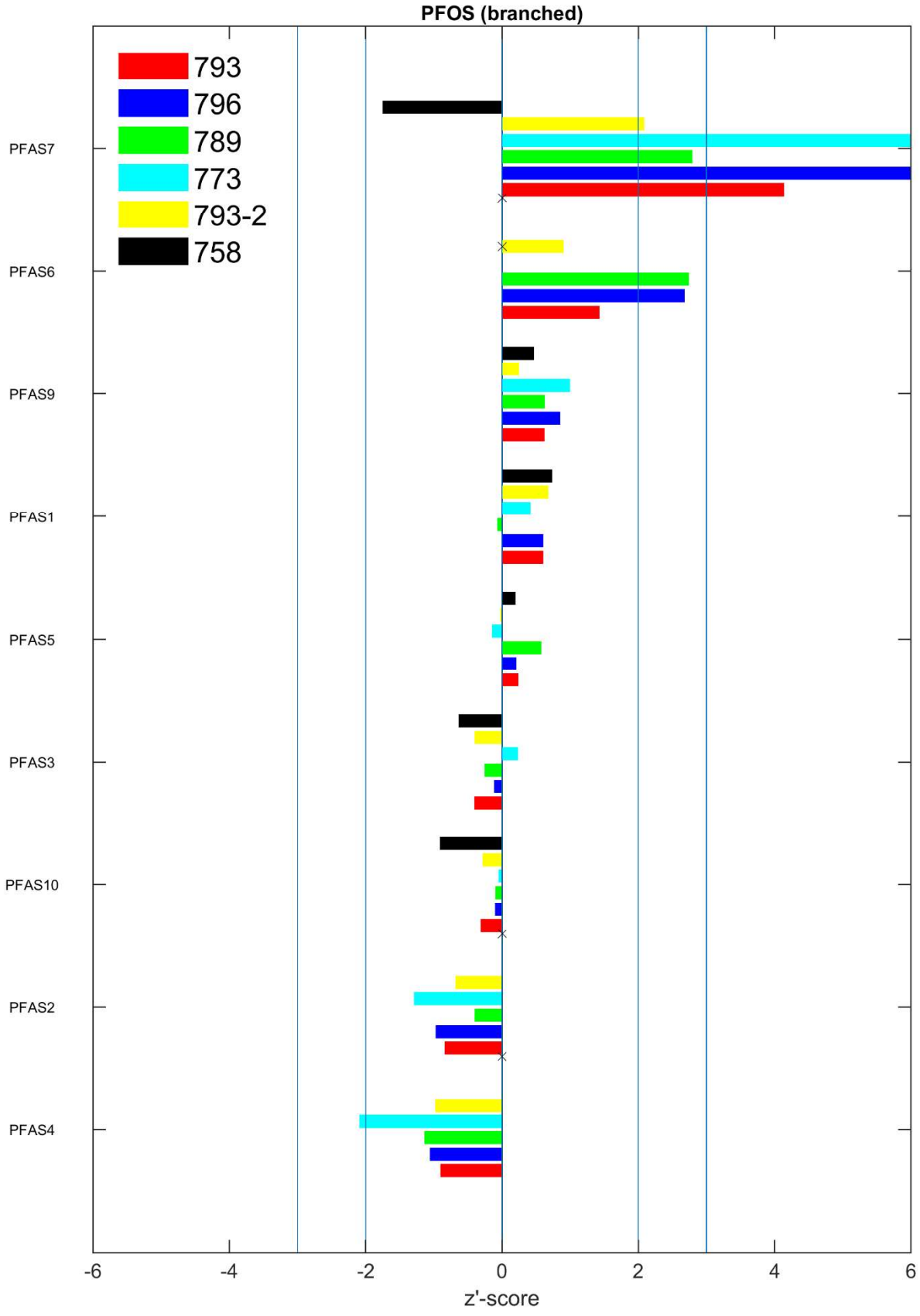
Per- and Polyfluoroalkyl substances z'-scores-values



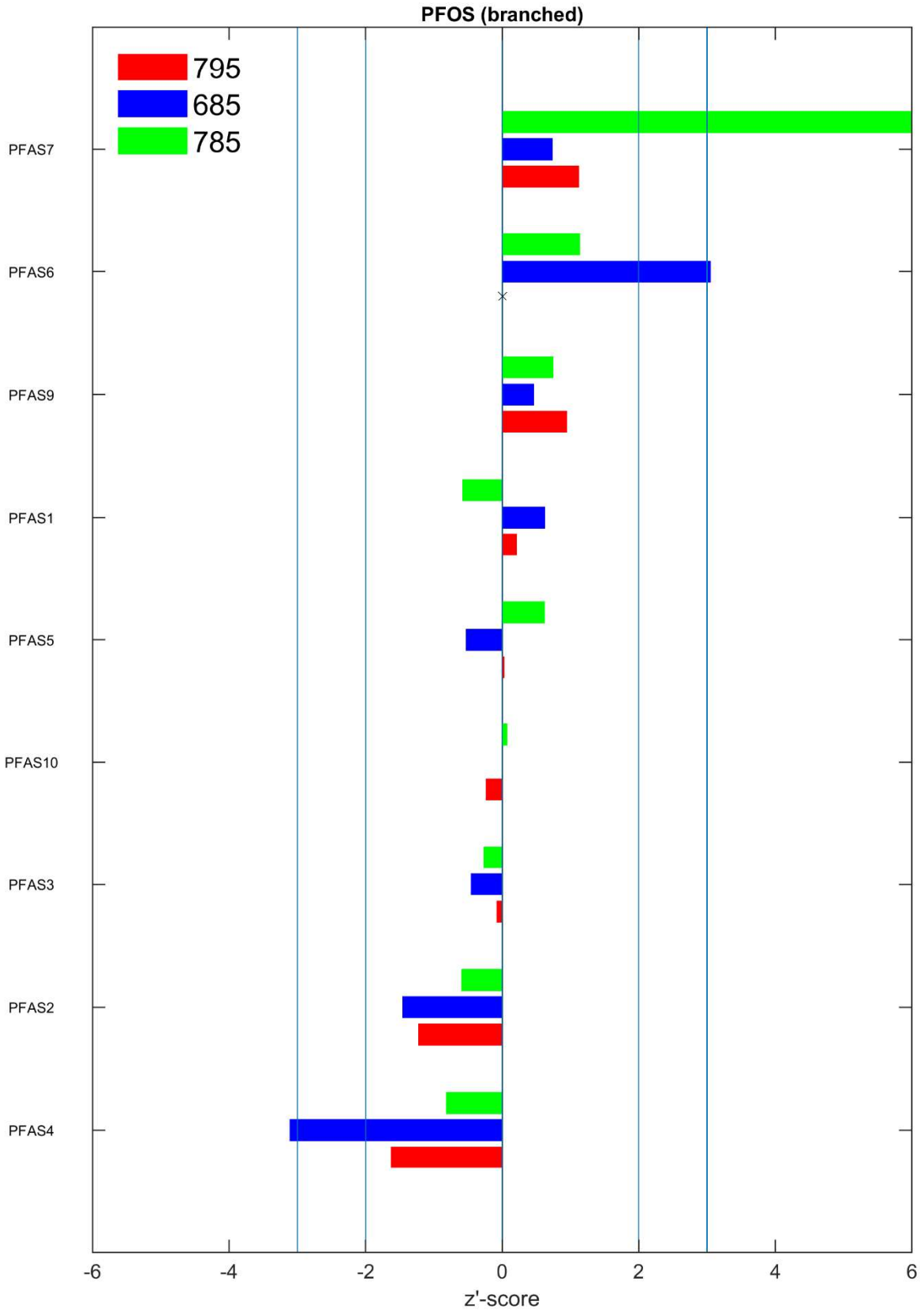
Per- and Polyfluoroalkyl substances z'-scores-values



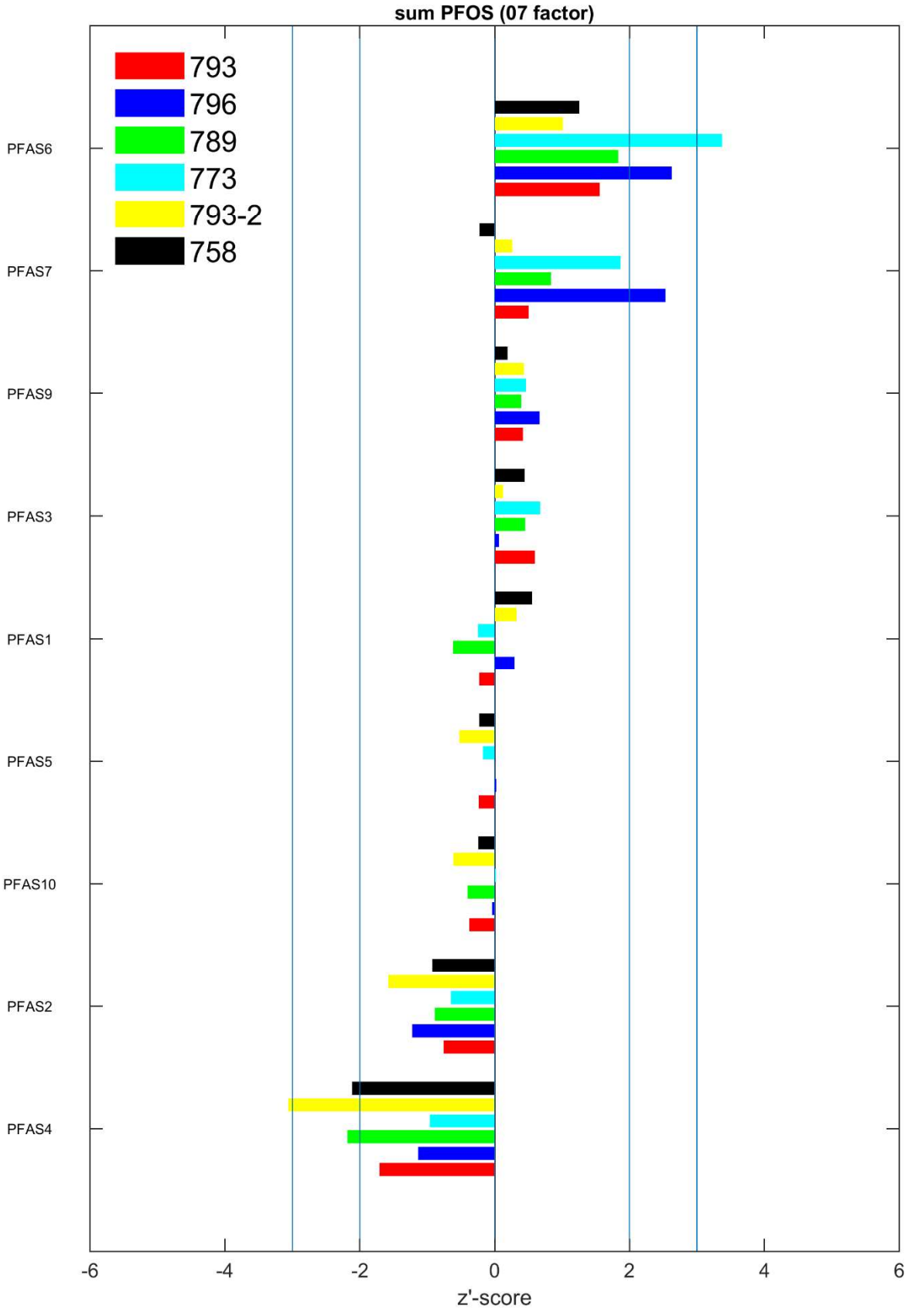
Per- and Polyfluoroalkyl substances z'-scores-values



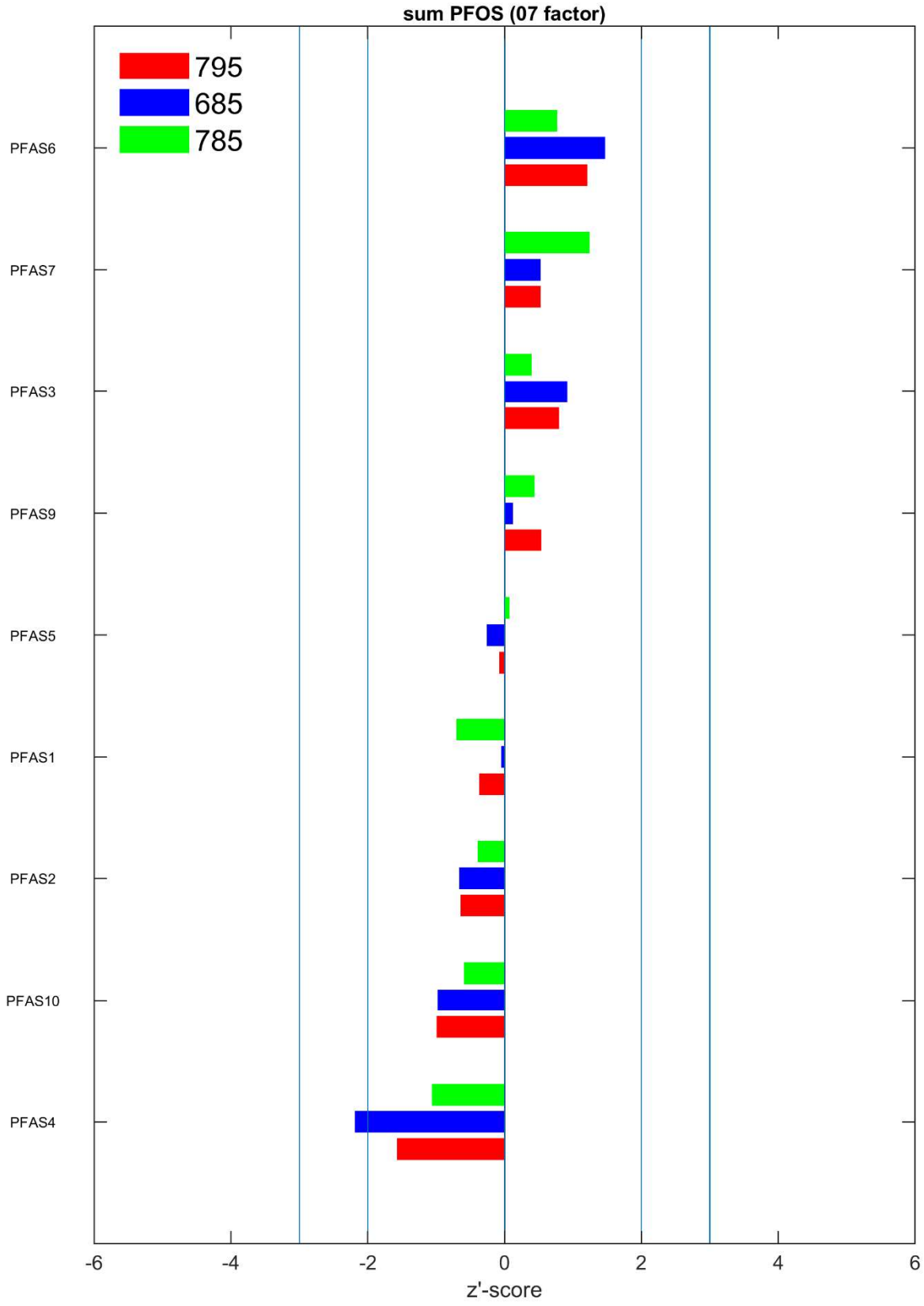
Per- and Polyfluoroalkyl substances z'-scores-values



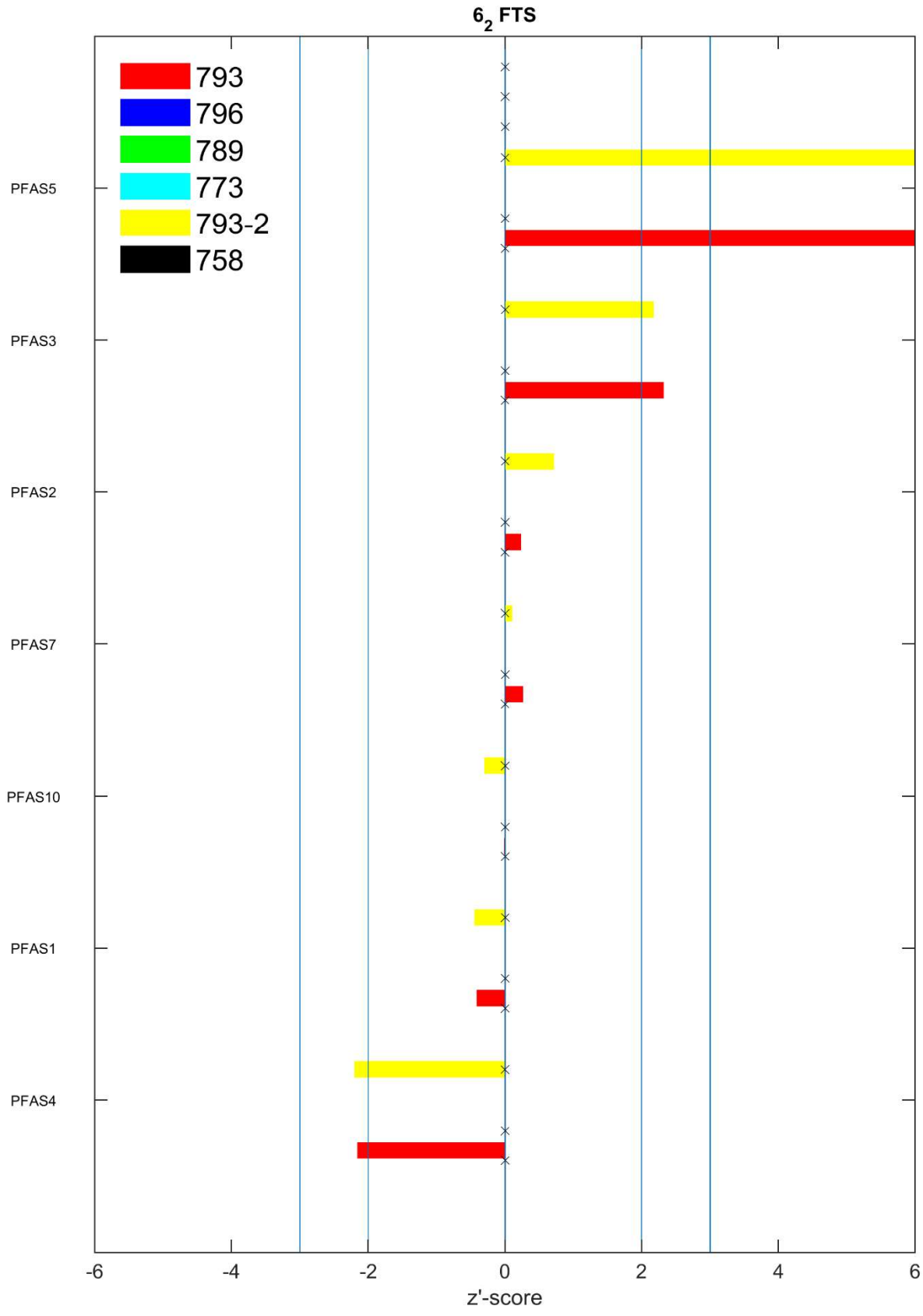
Per- and Polyfluoroalkyl substances z'-scores-values



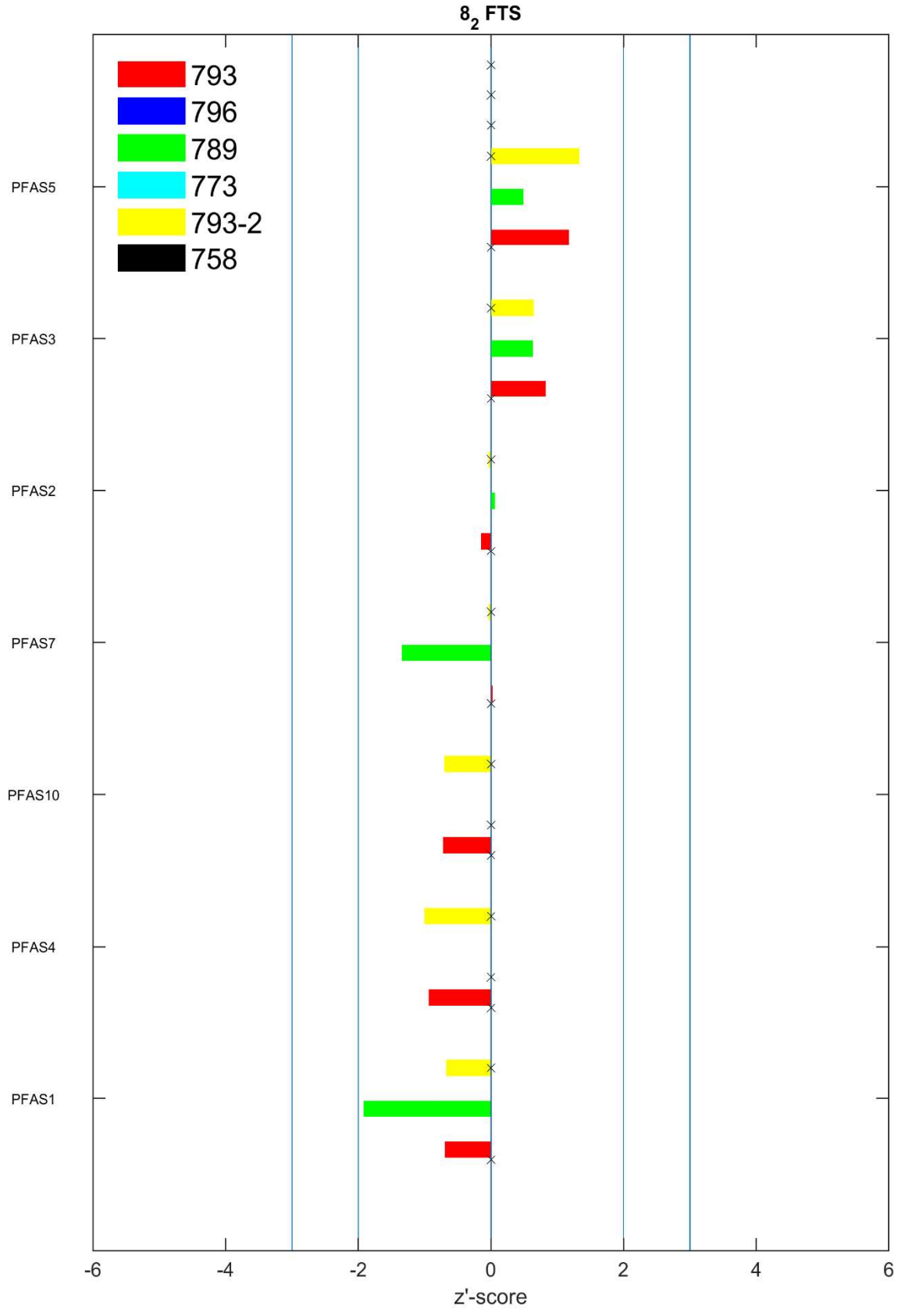
Per- and Polyfluoroalkyl substances z'-scores-values



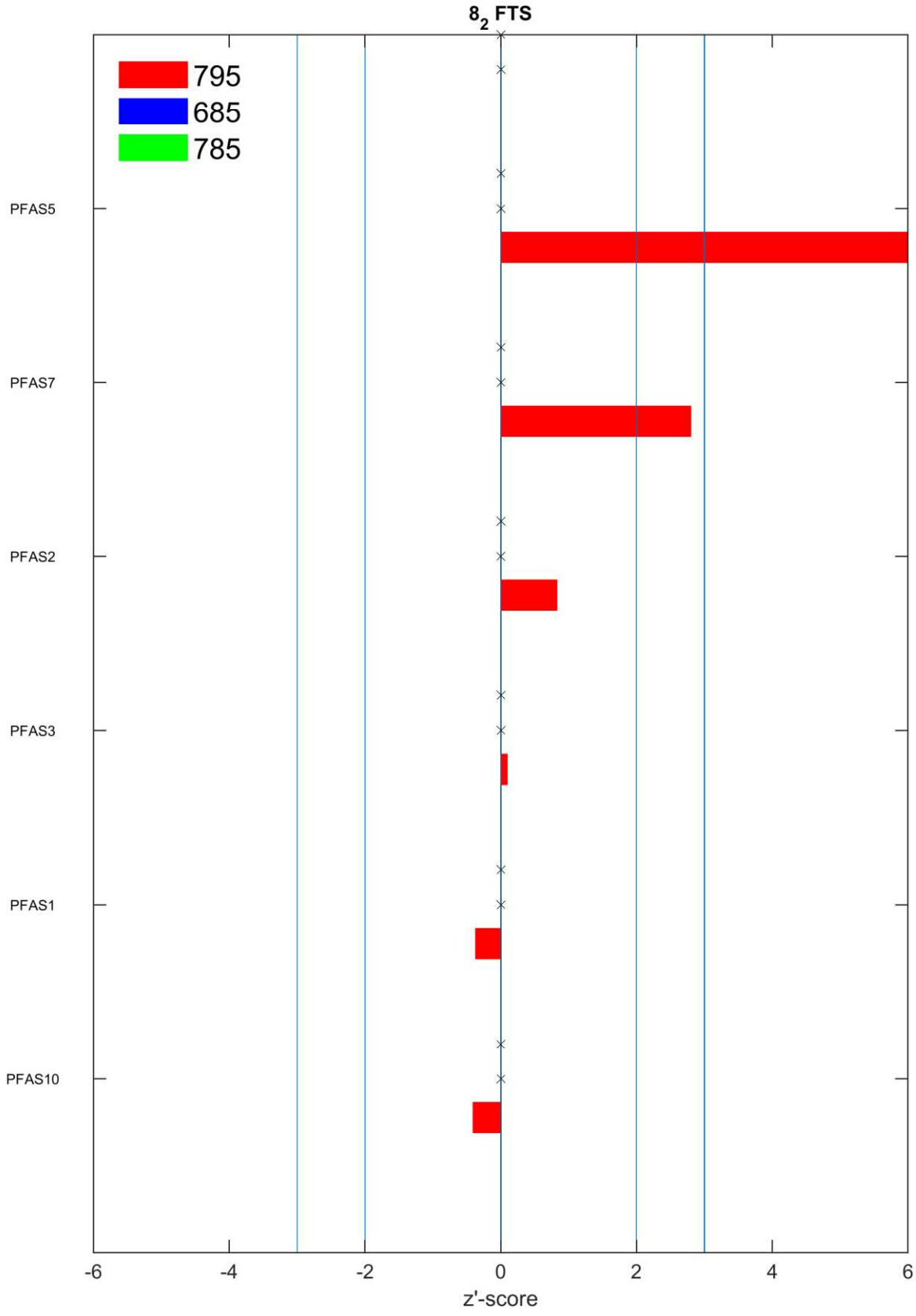
Per- and Polyfluoroalkyl substances z'-scores-values



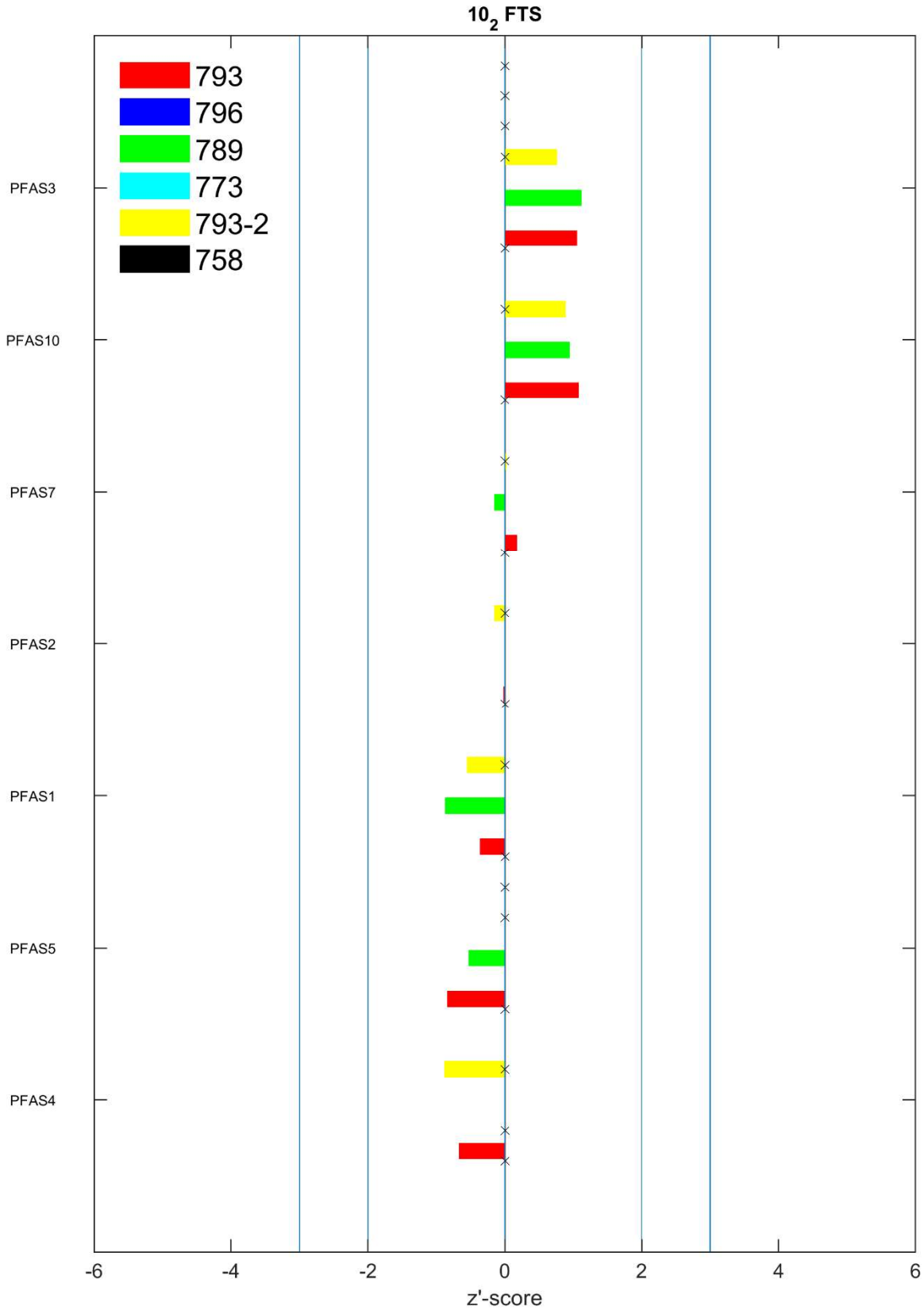
Per- and Polyfluoroalkyl substances z'-scores-values



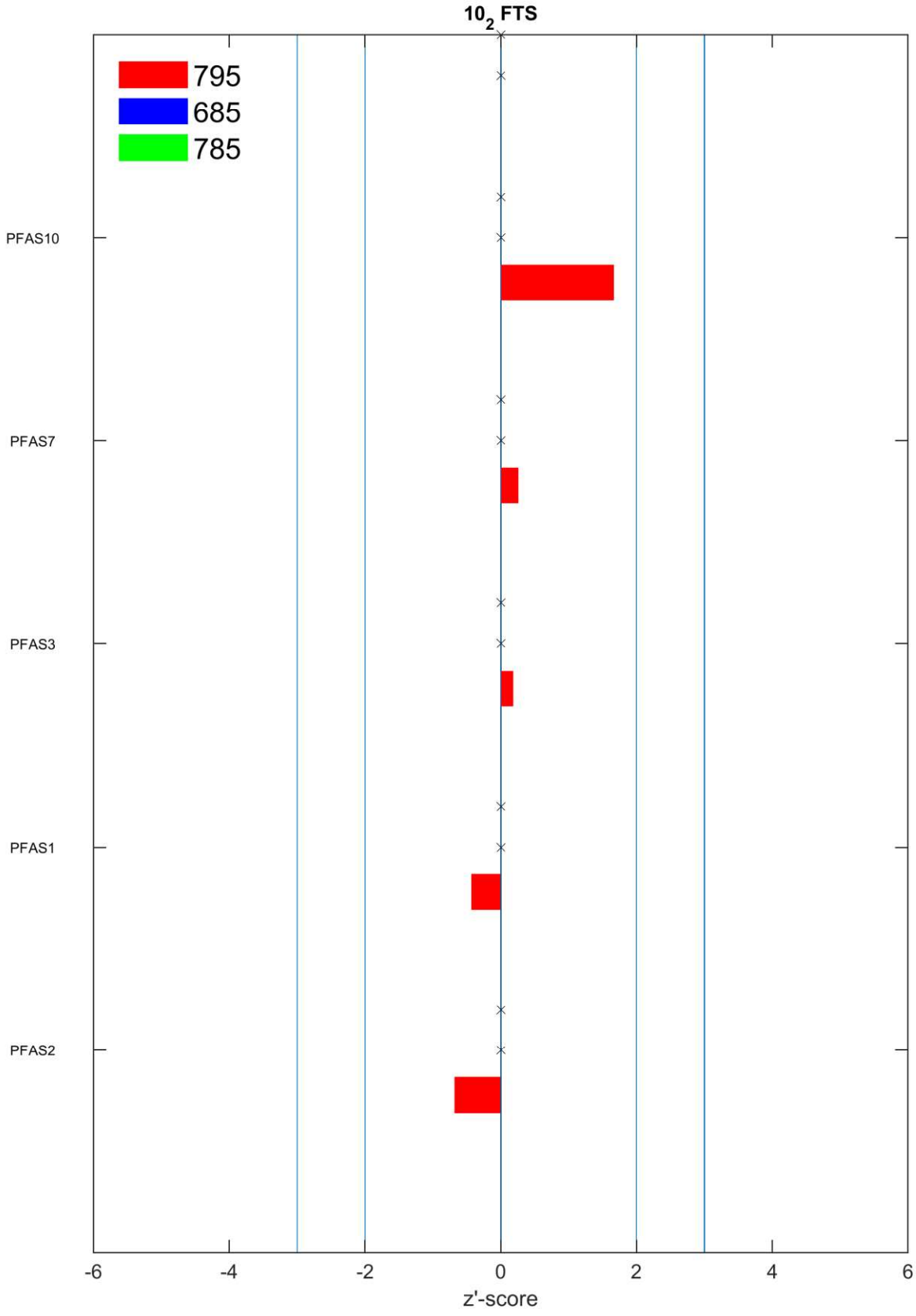
Per- and Polyfluoroalkyl substances z'-scores-values



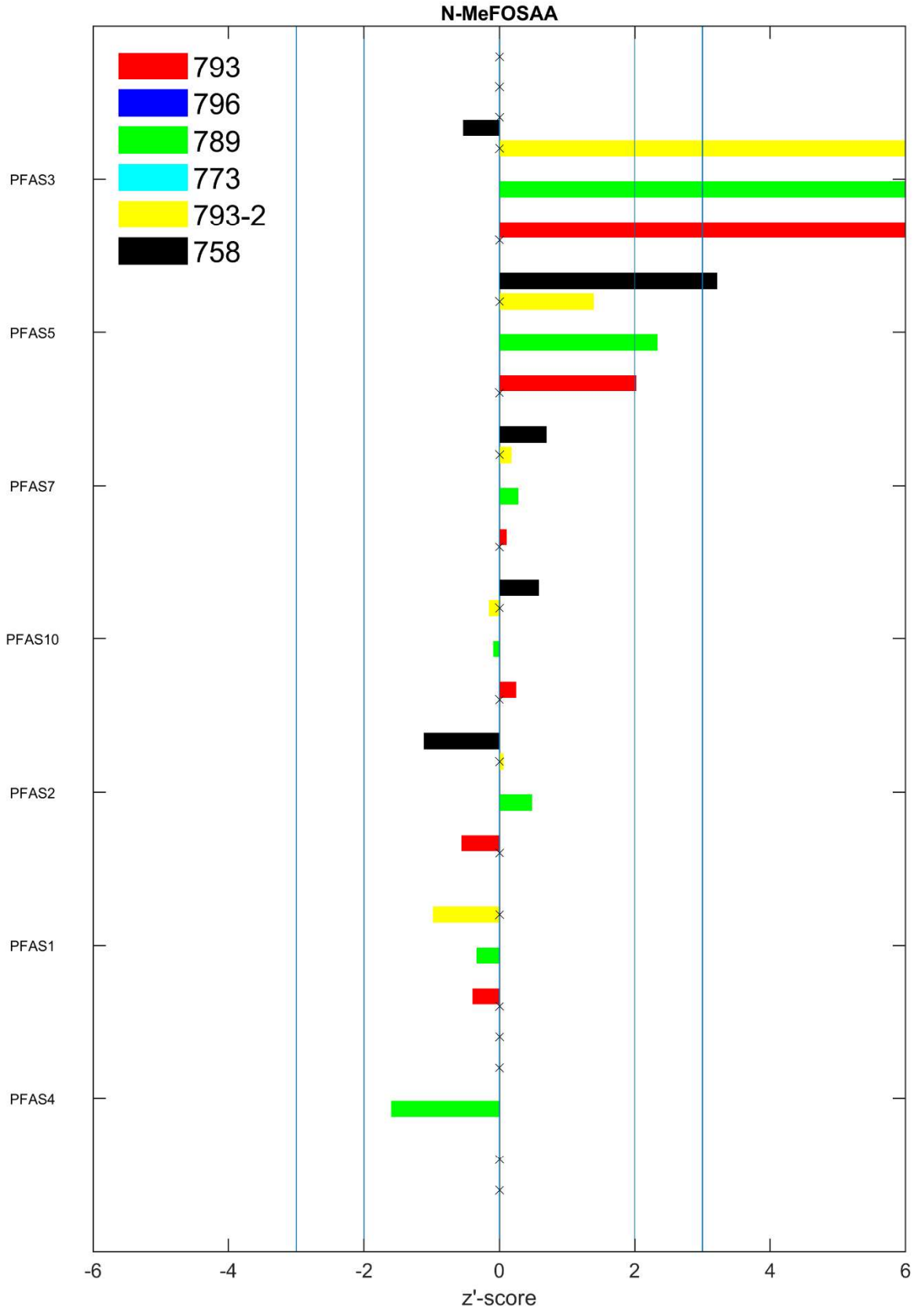
Per- and Polyfluoroalkyl substances z'-scores-values



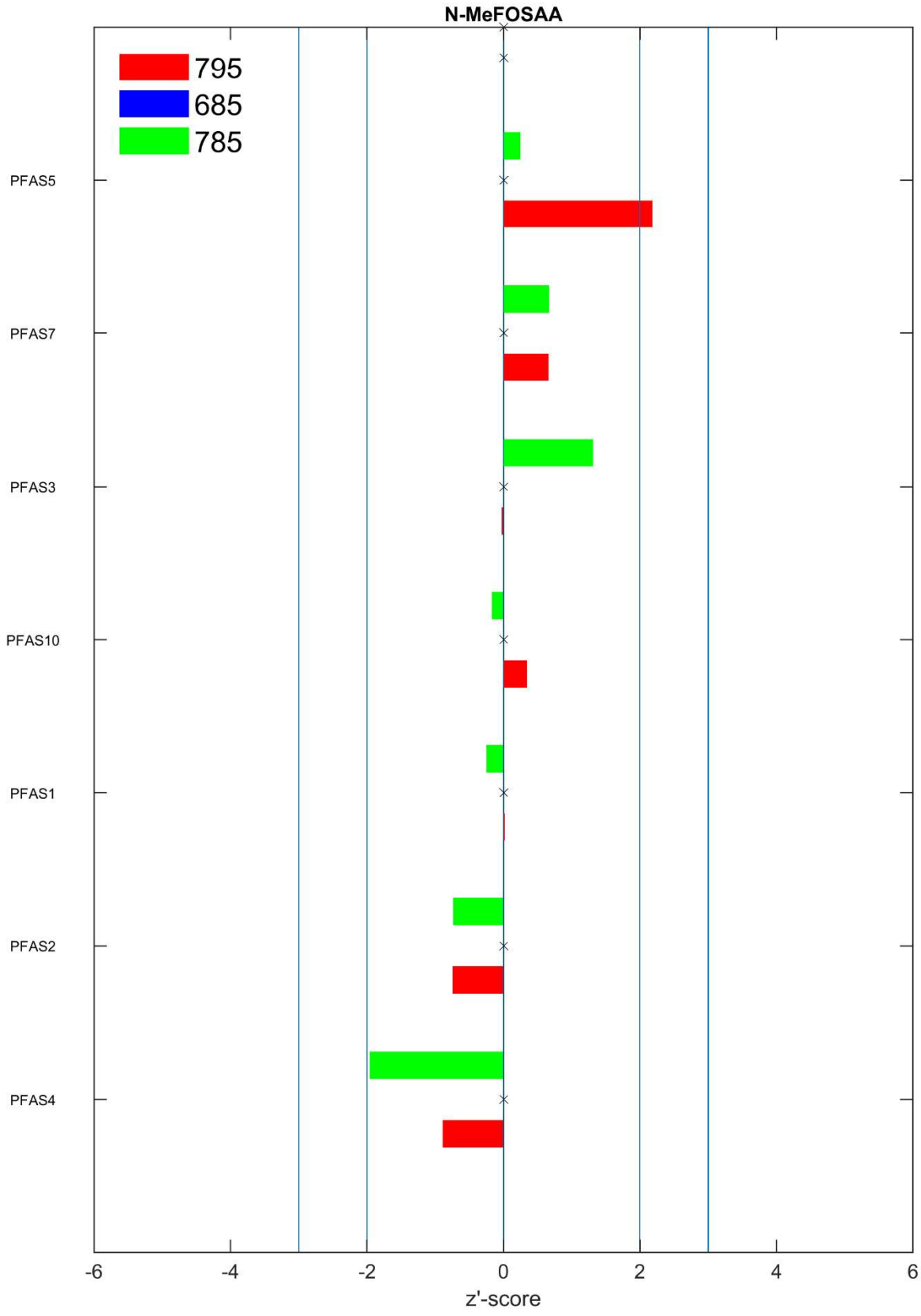
Per- and Polyfluoroalkyl substances z'-scores-values



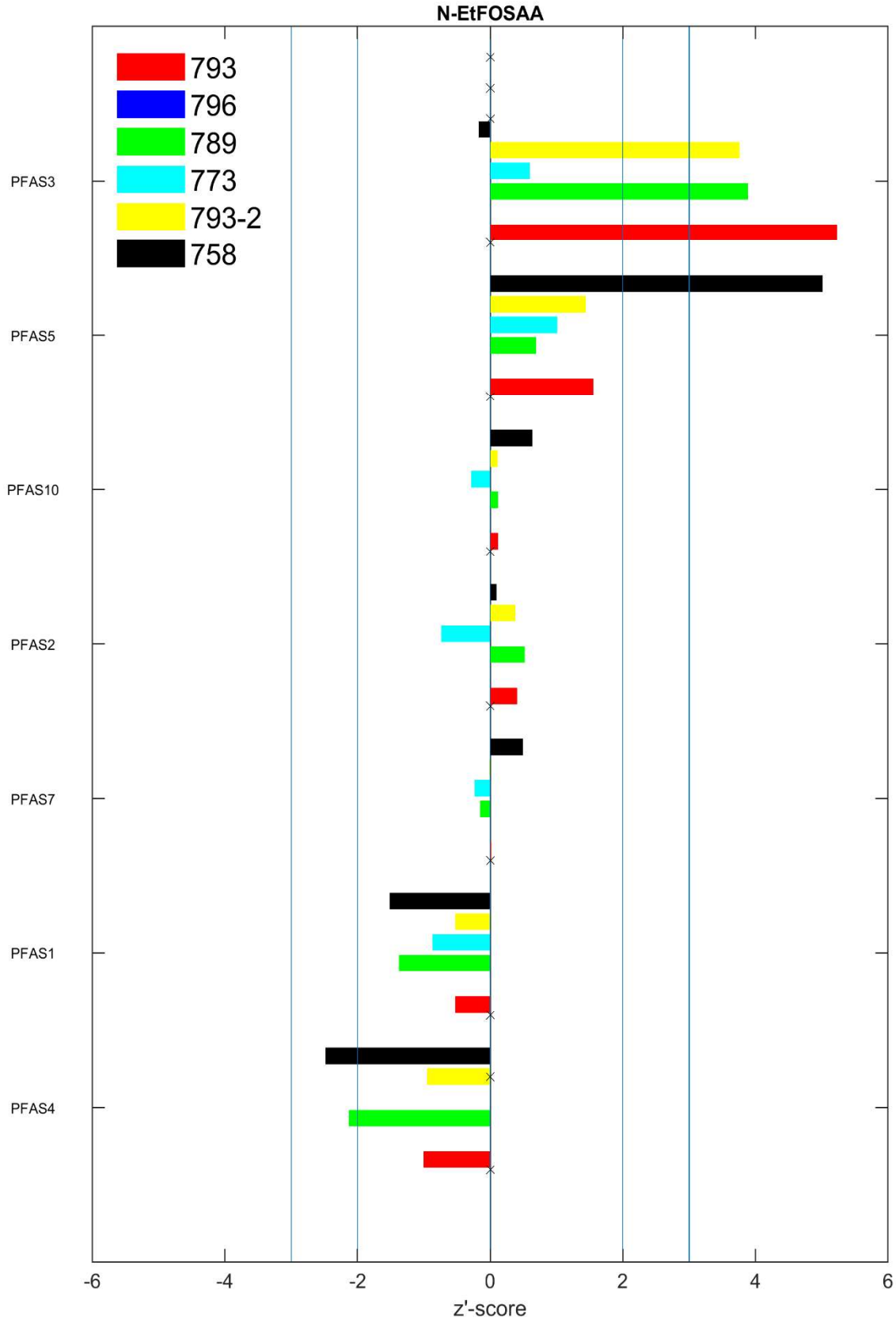
Per- and Polyfluoroalkyl substances z'-scores-values



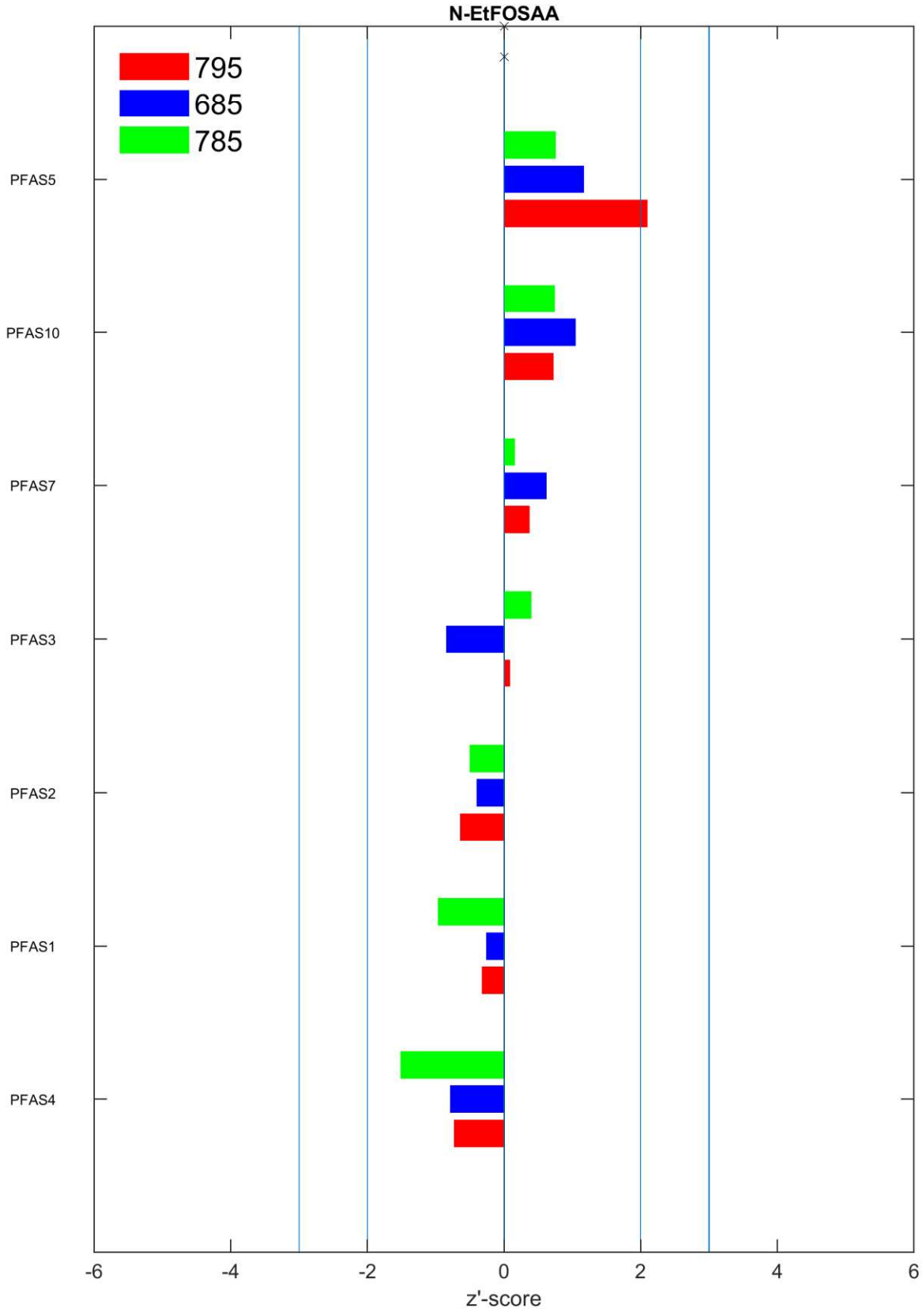
Per- and Polyfluoroalkyl substances z'-scores-values



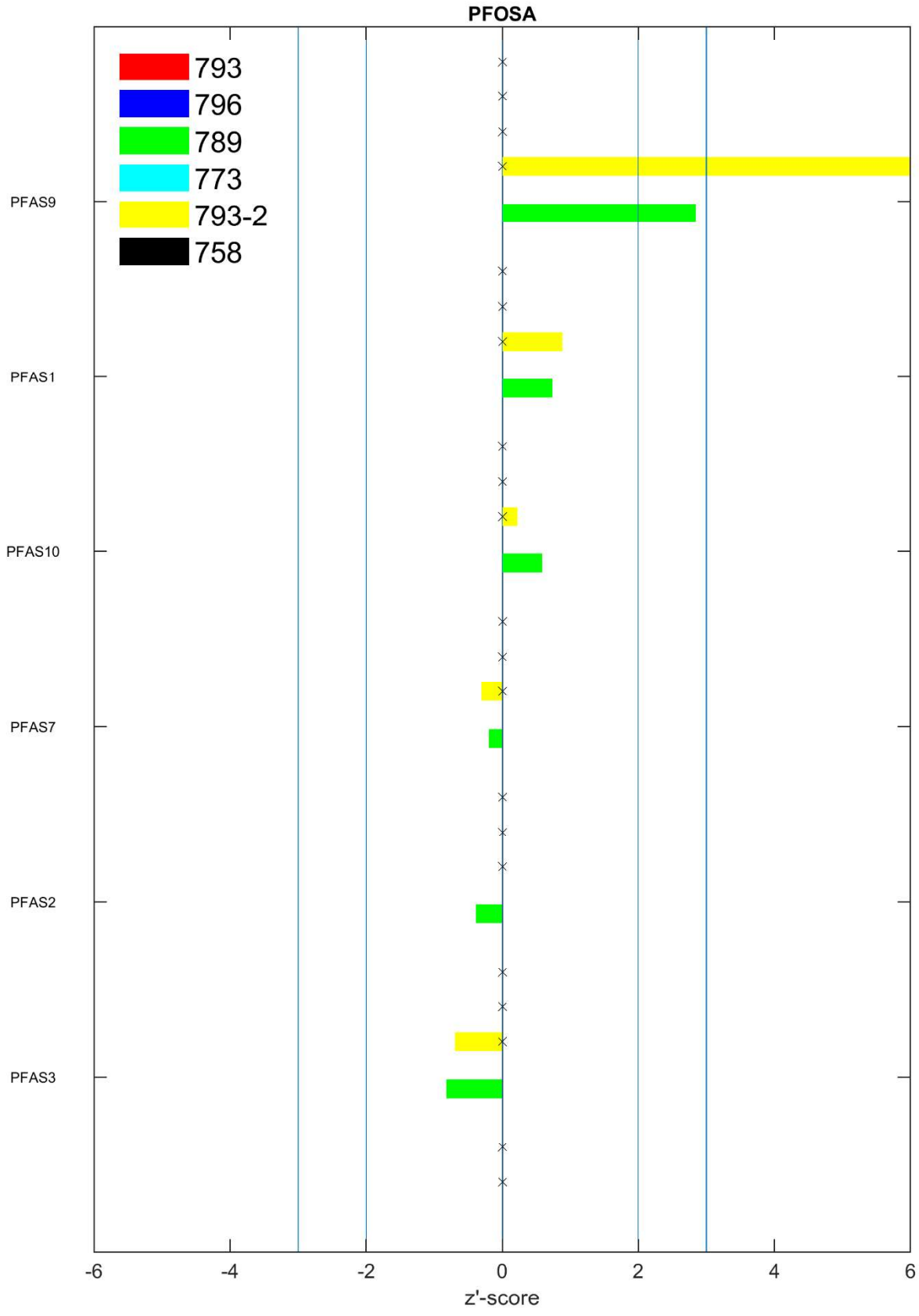
Per- and Polyfluoroalkyl substances z'-scores-values



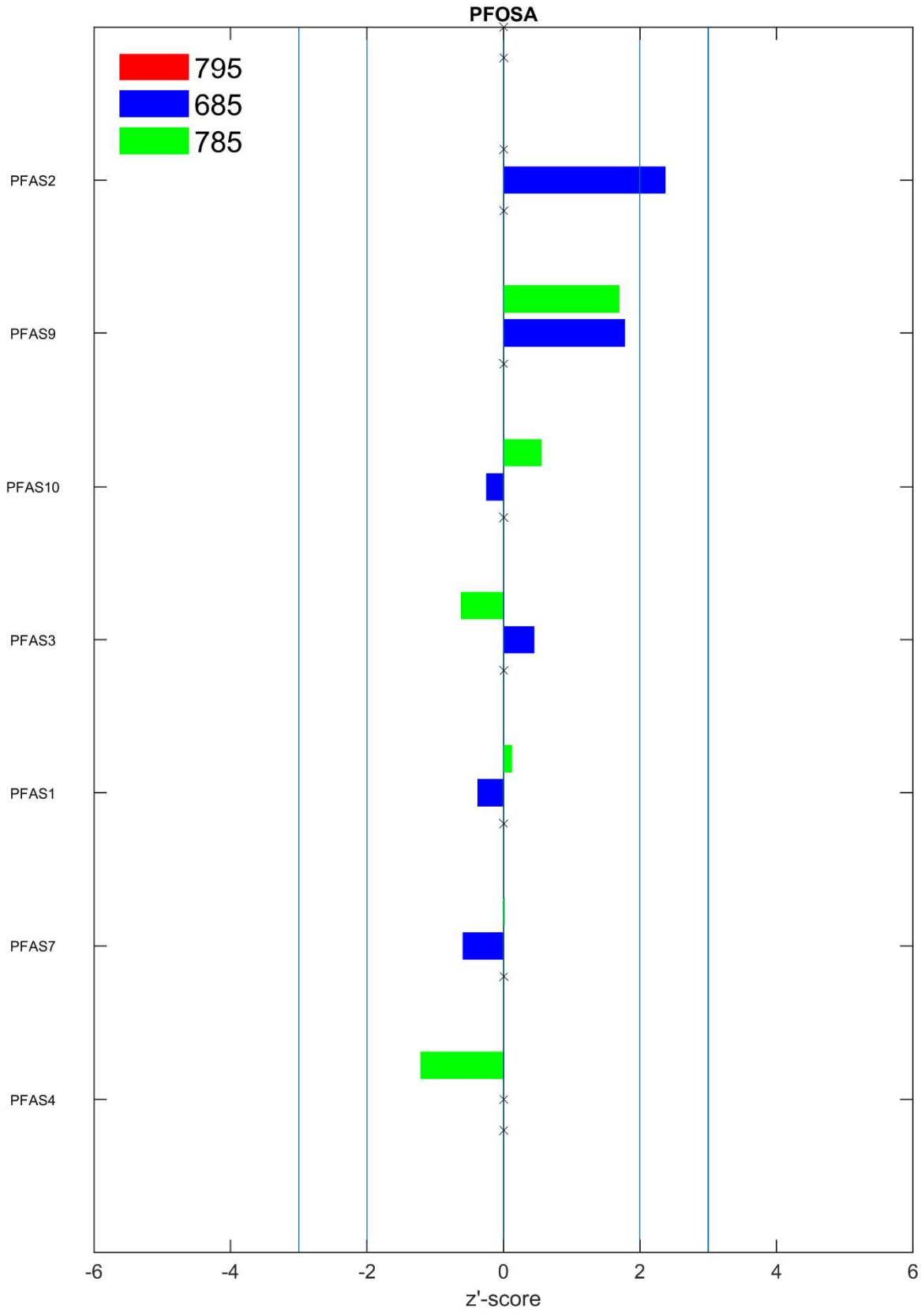
Per- and Polyfluoroalkyl substances z'-scores-values



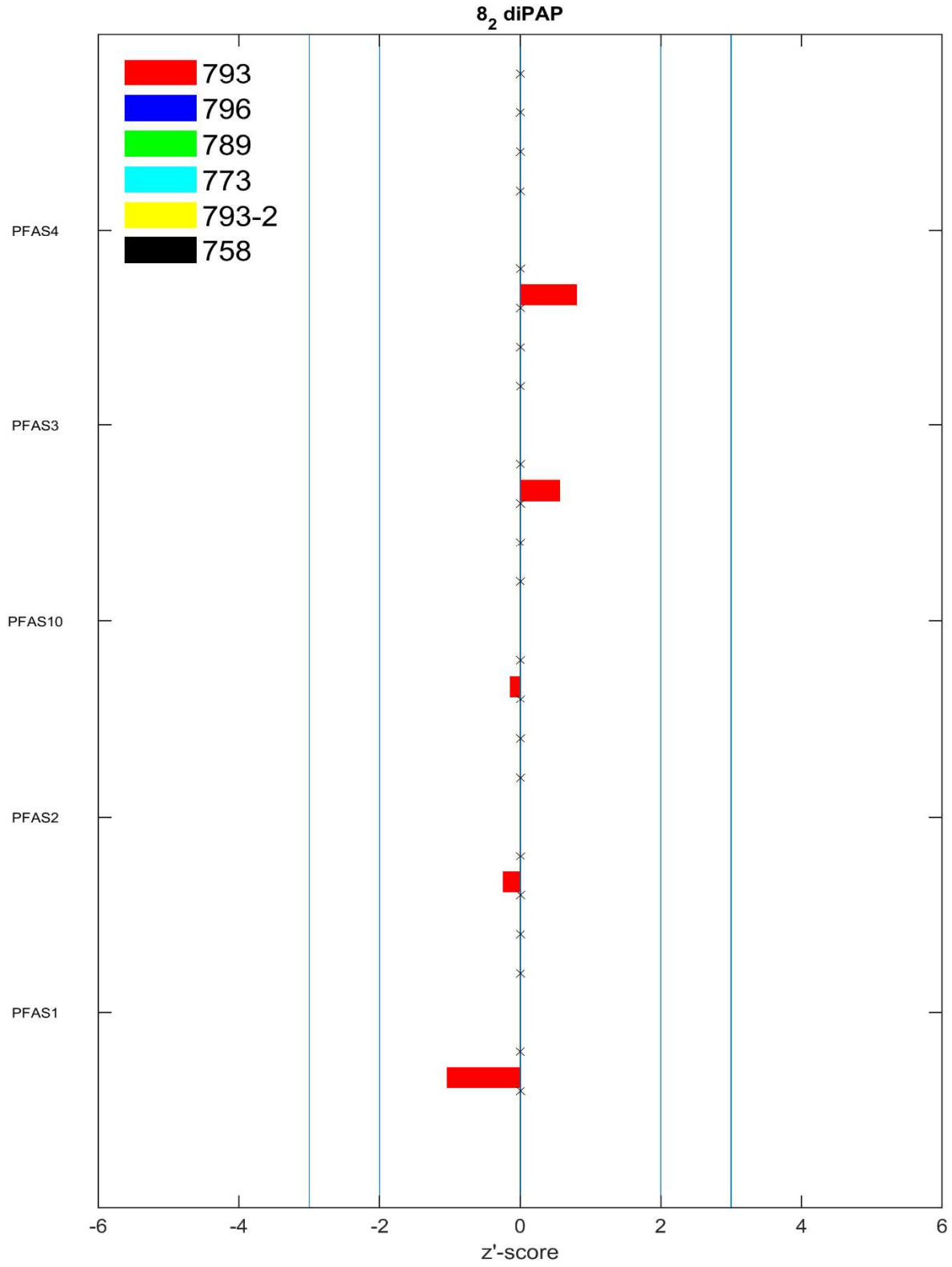
Per- and Polyfluoroalkyl substances z'-scores-values



Per- and Polyfluoroalkyl substances z'-scores-values



Per- and Polyfluoroalkyl substances z'-scores-values



Per- and Polyfluoroalkyl substances z'-scores-values

Sample	793	796	789	773	793-2	758
PFAS1						
PFBA (PFASs)	#	#	-0.83	<	&	<
PFPeA (PFASs)	#	#	<	<	#	<
PFHxA (PFASs)	-0.55	<	0.08	<	-0.54	<
PFHpA (PFASs)	#	#	-0.70	<	#	<
PFOA (linear) (PFASs)	0.38	0.44	0.35	0.32	0.20	0.07
PFOA (branched) (PFASs)	<	<	#	<	<	<
sum PFOA (0.7 factor) (PFASs)	0.56	0.25	0.31	-0.27	-0.11	-0.30
PFNA (PFASs)	#	-0.74	#	<	#	<
PFDA (PFASs)	0.27	#	0.08	#	0.28	<
PFUnDA (PFASs)	0.21	<	#	<	0.52	<
PFDoA (PFASs)	&	<	-0.69	<	-0.15	<
PFTrDA (PFASs)	-0.41	<	#	<	-0.33	<
PFTeDA (PFASs)	-0.39	<	<	<	0.07	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	-0.64	<	-0.77	<	-0.56	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	#	#	<	#	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	-0.27	0.07	-0.64	-0.51	0.30	0.53
PFOS (branched) (PFASs)	0.61	0.61	-0.07	0.42	0.68	0.74
sum PFOS (0.7 factor) (PFASs)	-0.23	0.29	-0.62	-0.25	0.32	0.55
PFDS (PFASs)	<	<	#	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	-0.42	<	&	<	-0.44	<
8:2 FTS (PFASs)	-0.70	<	-1.92	<	-0.68	<
10:2 FTS (PFASs)	-0.36	<	-0.87	<	-0.55	<
N-MeFOSAA (PFASs)	-0.39	<	-0.34	<	-0.98	0.01
N-EtFOSAA (PFASs)	-0.53	<	-1.37	-0.87	-0.53	-1.52
PFOSA (PFASs)	&	<	0.74	<	0.88	#
N-MeOSA (PFASs)	<	<	<	<	<	<
8:2 diPAP (PFASs)	-1.05	<	#	<	&	<
HFPO-DA (PFASs)	<	<	<	<	<	<

PFAS1 Sample	795	685	785
PFBA (PFASs)	<	#	-0.58
PFPeA (PFASs)	<	#	<
PFHxA (PFASs)	#	-0.75	<
PFHpA (PFASs)	<	-0.62	#
PFOA (linear) (PFASs)	0.11	-0.14	0.27
PFOA (branched) (PFASs)	<	<	-0.10
sum PFOA (0.7 factor) (PFASs)	-0.40	-0.12	0.21
PFNA (PFASs)	#	0.56	<
PFDA (PFASs)	0.61	0.43	#
PFUnDA (PFASs)	0.48	-0.26	<
PFDoA (PFASs)	-0.57	-1.12	<
PFTrDA (PFASs)	<	-1.31	<
PFTeDA (PFASs)	<	#	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	<	<	<
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	<	-2.93 *	<
PFHpS (PFASs)	<	-0.42	<
PFOS (linear) (PFASs)	-0.74	-0.34	-1.18
PFOS (branched) (PFASs)	0.22	0.63	-0.59
sum PFOS (0.7 factor) (PFASs)	-0.37	-0.05	-0.70
PFDS (PFASs)	<	<	<
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	<	<	<
8:2 FTS (PFASs)	-0.38	<	<
10:2 FTS (PFASs)	-0.43	<	<
N-MeFOSAA (PFASs)	0.02	#	-0.25
N-EtFOSAA (PFASs)	-0.32	-0.26	-0.97
PFOSA (PFASs)	&	-0.38	0.13
N-MeOSA (PFASs)	<	<	#
8:2 diPAP (PFASs)	<	<	<
HFPO-DA (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS2

Sample	793	796	789	773	793-2	758
PFBA (PFASs)	<	<	-0.16	<	&	#
PFPeA (PFASs)	<	<	<	<	<	<
PFHxA (PFASs)	0.14	<	-0.04	<	-0.17	<
PFHpA (PFASs)	<	<	< C	<	<	<
PFOA (linear) (PFASs)	-0.30	-0.25	-0.12	-0.24	-0.13	-0.44
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	-0.64	-0.36	0.00	0.91	0.10	0.39
PFNA (PFASs)	<	< C	<	<	<	<
PFDA (PFASs)	-0.36	<	-1.47	<	-0.76	<
PFUnDA (PFASs)	-0.69	<	<	<	-0.67	<
PFDoA (PFASs)	&	<	< C	<	-0.76	<
PFTrDA (PFASs)	-0.17	<	<	<	-0.50	<
PFTeDA (PFASs)	0.55	<	<	<	-0.51	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	-0.28	<	-0.20	<	0.29	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	<	<	<	<	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	-0.82	-3.94 **	-0.89	-0.82	-1.62	-1.02
PFOS (branched) (PFASs)	-0.84	-0.97	-0.40	-1.29	-0.68	< C
sum PFOS (0.7 factor) (PFASs)	-0.76	-1.22	-0.89	-0.65	-1.58	-0.92
PFDS (PFASs)	<	<	<	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	0.24	<	&	<	0.72	<
8:2 FTS (PFASs)	-0.14	<	0.06	<	-0.03	<
10:2 FTS (PFASs)	-0.02	<	-0.01	<	-0.15	<
N-MeFOSAA (PFASs)	-0.56	<	0.49	<	0.06	-1.11
N-EtFOSAA (PFASs)	0.41	<	0.52	-0.74	0.38	0.09
PFOSA (PFASs)	<	<	-0.39	<	< C	<
N-MeOSA (PFASs)	<	<	<	<	<	<
8:2 diPAP (PFASs)	-0.25	<	<	<	&	<
HFPO-DA (PFASs)	<	<	<	<	<	<

PFAS2

Sample	795	685	785
PFBA (PFASs)	<	#	-1.18
PFPeA (PFASs)	<	<	<
PFHxA (PFASs)	<	0.30	<
PFHpA (PFASs)	<	0.31	<
PFOA (linear) (PFASs)	0.02	-0.30	-0.04
PFOA (branched) (PFASs)	<	<	< C
sum PFOA (0.7 factor) (PFASs)	0.50	-0.17	-0.74
PFNA (PFASs)	<	-0.76	<
PFDA (PFASs)	-0.85	-0.63	<
PFUnDA (PFASs)	-0.67	-0.71	<
PFDoA (PFASs)	-0.39	-0.04	<
PFTrDA (PFASs)	<	0.65	<
PFTeDA (PFASs)	<	<	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	<	<	<
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	<	-0.54	<
PFHpS (PFASs)	<	-0.72	<
PFOS (linear) (PFASs)	-0.91	-1.05	-0.64
PFOS (branched) (PFASs)	-1.23	-1.46	-0.60
sum PFOS (0.7 factor) (PFASs)	-0.65	-0.66	-0.40
PFDS (PFASs)	<	<	<
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	<	<	<
8:2 FTS (PFASs)	0.83	<	<
10:2 FTS (PFASs)	-0.68	<	<
N-MeFOSAA (PFASs)	-0.74	<	-0.74
N-EtFOSAA (PFASs)	-0.64	-0.40	-0.50
PFOSA (PFASs)	<	2.37 *	< I
N-MeOSA (PFASs)	<	<	<
8:2 diPAP (PFASs)	<	<	<
HFPO-DA (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS3

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFBA (PFASs)	<	<	-0.16	<	<	<
PFPeA (PFASs)	<	<	#	<	<	<
PFHxA (PFASs)	0.99	<	0.87	<	1.73	<
PFHpA (PFASs)	<	<	0.63	<	<	<
PFOA (linear) (PFASs)	1.09	0.68	0.95	1.31	0.86	1.66
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	7.10 **	1.22	1.28	3.07 **	2.09 *	2.25 *
PFNA (PFASs)	<	0.64	<	<	<	<
PFDA (PFASs)	1.65	<	1.19	<	0.96	<
PFUnDA (PFASs)	1.32	<	<	<	1.01	<
PFDoA (PFASs)	&	<	0.97	<	0.91	<
PFTrDA (PFASs)	1.00	<	<	<	0.65	<
PFTeDA (PFASs)	6.80 **	<	<	<	2.63 *	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	0.31	<	1.13	<	0.10	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	<	#	<	<	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	1.24	0.04	0.90	1.29	0.41	0.68
PFOS (branched) (PFASs)	-0.41	-0.11	-0.26	0.23	-0.40	-0.64
sum PFOS (0.7 factor) (PFASs)	0.60	0.06	0.45	0.68	0.13	0.44
PFDS (PFASs)	<	<	<	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	2.32 *	<	&	<	2.18 *	<
8:2 FTS (PFASs)	0.83	<	0.63	<	0.65	<
10:2 FTS (PFASs)	1.05	<	1.12	<	0.76	<
N-MeFOSAA (PFASs)	17.29 **	<	10.68 **	<	13.04 **	-0.53
N-EtFOSAA (PFASs)	5.23 **	<	3.89 **	0.60	3.76 **	-0.17
PFOSA (PFASs)	&	<	-0.82	<	-0.70	<
N-MeOSA (PFASs)	<	<	<	<	<	<
8:2 diPAP (PFASs)	0.56	<	<	<	&	<

PFAS3

Sample	**795**	**685**	**785**
PFBA (PFASs)	<	<	-0.16
PFPeA (PFASs)	<	<	<
PFHxA (PFASs)	<	1.07	<
PFHpA (PFASs)	<	2.31 *	<
PFOA (linear) (PFASs)	1.94	0.72	1.20
PFOA (branched) (PFASs)	<	<	< C
sum PFOA (0.7 factor) (PFASs)	2.18 *	0.90	1.46
PFNA (PFASs)	<	2.04 *	<
PFDA (PFASs)	1.13	0.78	<
PFUnDA (PFASs)	1.31	0.66	<
PFDoA (PFASs)	0.90	1.45	<
PFTrDA (PFASs)	<	0.65	<
PFTeDA (PFASs)	<	<	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	<	<	<
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	<	10.66 **	<
PFHpS (PFASs)	<	0.47	<
PFOS (linear) (PFASs)	0.91	1.27	0.66
PFOS (branched) (PFASs)	-0.08	-0.46	-0.28
sum PFOS (0.7 factor) (PFASs)	0.80	0.92	0.39
PFDS (PFASs)	<	<	<
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	<	<	<
8:2 FTS (PFASs)	0.10	<	<
10:2 FTS (PFASs)	0.18	<	<
N-MeFOSAA (PFASs)	-0.03	<	1.31
N-EtFOSAA (PFASs)	0.09	-0.85	0.40
PFOSA (PFASs)	&	0.45	-0.63
N-MeOSA (PFASs)	<	<	<
8:2 diPAP (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS4

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFBA (PFASs)	#	<	11.69 **	<	&	<
PFPeA (PFASs)	<	<	<	<	<	<
PFHxA (PFASs)	< I	<	< C	<	< I	<
PFHpA (PFASs)	<	<	< C	<	<	<
PFOA (linear) (PFASs)	-1.89	-1.38	-1.95	-1.56	-2.21 *	< C
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	-9.51 **	-2.28 *	-2.18 *	-0.94	-4.07 **	-1.48
PFNA (PFASs)	<	< C	<	<	<	<
PFDA (PFASs)	-3.35 **	<	< I	<	< I	<
PFUnDA (PFASs)	-1.57	<	<	<	-2.01 *	<
PFDoA (PFASs)	&	<	< C	<	-2.50 *	<
PFTrDA (PFASs)	-0.06	<	<	<	0.30	<
PFTeDA (PFASs)	-0.08	<	<	<	-0.09	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	< C	<	< C	<	< C	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	<	<	<	<	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	-2.30 *	-3.61 **	-2.42 *	-1.19	-3.36 **	-2.56 *
PFOS (branched) (PFASs)	-0.90	-1.06	-1.14	-2.10 *	-0.98	< C
sum PFOS (0.7 factor) (PFASs)	-1.70	-1.13	-2.18 *	-0.96	-3.06 **	-2.11 *
PFDS (PFASs)	<	<	<	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	-2.16 *	<	<	<	-2.20 *	<
8:2 FTS (PFASs)	-0.94	<	< C	<	-1.00	<
10:2 FTS (PFASs)	-0.67	<	< C	<	-0.89	<
N-MeFOSAA (PFASs)	< I	<	-1.60	<	< I	< C
N-EtFOSAA (PFASs)	-1.01	<	-2.13 *	< C	-0.96	-2.48 *
PFOSA (PFASs)	<	<	< C	<	< C	<
N-MeOSA (PFASs)	<	<	<	<	<	<
8:2 diPAP (PFASs)	0.81	<	#	<	&	<
HFPO-DA (PFASs)	<	<	<	<	<	<

PFAS4

Sample	**795**	**685**	**785**
PFBA (PFASs)	<	<	1.45
PFPeA (PFASs)	<	<	<
PFHxA (PFASs)	<	< C	<
PFHpA (PFASs)	<	< C	<
PFOA (linear) (PFASs)	-1.32	-2.46 *	-1.91
PFOA (branched) (PFASs)	<	<	< C
sum PFOA (0.7 factor) (PFASs)	-0.68	-2.42 *	-4.07 **
PFNA (PFASs)	<	< I	<
PFDA (PFASs)	< I	-2.13 *	<
PFUnDA (PFASs)	< I	< I	<
PFDoA (PFASs)	< C	< I	<
PFTrDA (PFASs)	<	< C	<
PFTeDA (PFASs)	<	<	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	<	<	<
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	<	< I	<
PFHpS (PFASs)	<	< C	<
PFOS (linear) (PFASs)	-2.13 *	-3.21 **	-1.74
PFOS (branched) (PFASs)	-1.63	-3.11 **	-0.82
sum PFOS (0.7 factor) (PFASs)	-1.57	-2.19 *	-1.06
PFDS (PFASs)	<	<	<
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	<	<	<
8:2 FTS (PFASs)	< I	<	<
10:2 FTS (PFASs)	< C	<	<
N-MeFOSAA (PFASs)	-0.89	<	-1.96
N-EtFOSAA (PFASs)	-0.73	-0.79	-1.52
PFOSA (PFASs)	<	< C	-1.22
N-MeOSA (PFASs)	<	<	<
8:2 diPAP (PFASs)	<	<	<
HFPO-DA (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS5

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFBA (PFASs)	<	<	< I	<	<	<
PFPeA (PFASs)	<	<	<	<	<	<
PFHxA (PFASs)	< I	<	< C	<	< I	<
PFHpA (PFASs)	<	<	< C	<	<	<
PFOA (linear) (PFASs)	-1.59	-1.06	-1.29	-1.78	-1.12	-1.49
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	-7.86 **	-1.73	-1.39	-1.25	-1.89	-0.55
PFNA (PFASs)	<	< C	<	<	<	<
PFDA (PFASs)	-1.92	<	-0.94	<	-1.62	<
PFUnDA (PFASs)	-2.69 *	<	<	<	-2.16 *	<
PFDoA (PFASs)	<	<	< C	<	< I	<
PFTrDA (PFASs)	< C	<	<	<	< C	<
PFTeDA (PFASs)	< I	<	<	<	< C	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	< C	<	< C	<	< C	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	<	<	<	<	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	-0.21	-0.65	-0.02	-0.12	-0.52	-0.40
PFOS (branched) (PFASs)	0.24	0.21	0.58	-0.15	-0.02	0.19
sum PFOS (0.7 factor) (PFASs)	-0.24	0.03	-0.01	-0.17	-0.52	-0.23
PFDS (PFASs)	<	<	<	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	6.12 **	<	&	<	6.47 **	<
8:2 FTS (PFASs)	1.18	<	0.49	<	1.33	<
10:2 FTS (PFASs)	-0.84	<	-0.53	<	< C	<
N-MeFOSAA (PFASs)	2.02 *	<	2.34 *	<	1.39	3.22 **
N-EtFOSAA (PFASs)	1.56	<	0.69	1.01	1.44	5.01 **
PFOSA (PFASs)	<	<	< C	<	< C	<
N-MeOSA (PFASs)	<	<	<	<	<	<
HFPO-DA (PFASs)	<	<	<	<	<	<

PFAS5

Sample	**795**	**685**	**785**
PFBA (PFASs)	<	<	< C
PFPeA (PFASs)	<	<	<
PFHxA (PFASs)	<	< C	<
PFHpA (PFASs)	<	< C	<
PFOA (linear) (PFASs)	-1.46	-1.28	-1.53
PFOA (branched) (PFASs)	<	<	-0.56
sum PFOA (0.7 factor) (PFASs)	-0.81	-1.19	-3.28 **
PFNA (PFASs)	<	-2.52 *	<
PFDA (PFASs)	-0.85	-1.38	<
PFUnDA (PFASs)	-1.47	-1.39	<
PFDoA (PFASs)	< C	< I	<
PFTrDA (PFASs)	<	< C	<
PFTeDA (PFASs)	<	<	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	<	<	<
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	<	1.33	<
PFHpS (PFASs)	<	< C	<
PFOS (linear) (PFASs)	-0.27	-0.58	-0.15
PFOS (branched) (PFASs)	0.03	-0.54	0.62
sum PFOS (0.7 factor) (PFASs)	-0.07	-0.26	0.07
PFDS (PFASs)	<	<	<
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	#	<	<
8:2 FTS (PFASs)	11.01 **	<	<
10:2 FTS (PFASs)	< C	<	<
N-MeFOSAA (PFASs)	2.18 *	<	0.25
N-EtFOSAA (PFASs)	2.10 *	1.17	0.76
PFOSA (PFASs)	<	< C	< I
N-MeOSA (PFASs)	<	<	<
HFPO-DA (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS6

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFPeA (PFASs)	<	<	<	<	<	<
PFHxA (PFASs)	< I	<	< I	<	< I	<
PFHpA (PFASs)	<	<	< I	<	<	<
PFOA (linear) (PFASs)	5.06 **	3.64 **	3.55 **	7.95 **	3.67 **	7.18 **
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	43.70 **	9.23 **	7.35 **	20.97 **	12.36 **	13.70 **
PFNA (PFASs)	<	< I	<	<	<	<
PFDA (PFASs)	6.33 **	<	< I	<	4.57 **	<
PFUnDA (PFASs)	< C	<	<	<	< C	<
PFDoA (PFASs)	<	<	< I	<	< C	<
PFBS (PFASs)	< I	<	< I	<	< I	<
PFHxS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	2.55 *	8.01 **	2.27 *	4.70 **	1.29	0.79
PFOS (branched) (PFASs)	1.43	2.68 *	2.74 *	< I	0.91	< I
sum PFOS (0.7 factor) (PFASs)	1.56	2.63 *	1.83	3.37 **	1.01	1.25
PFOSA (PFASs)	<	<	< I	<	< I	<

PFAS6

Sample	**795**	**685**	**785**
PFPeA (PFASs)	<	<	<
PFHxA (PFASs)	<	< I	<
PFHpA (PFASs)	<	< I	<
PFOA (linear) (PFASs)	7.25 **	2.35 *	2.63 *
PFOA (branched) (PFASs)	<	<	< I
sum PFOA (0.7 factor) (PFASs)	12.06 **	3.95 **	7.09 **
PFNA (PFASs)	<	< I	<
PFDA (PFASs)	< I	3.32 **	<
PFUnDA (PFASs)	< I	< C	<
PFDoA (PFASs)	< I	< I	<
PFBS (PFASs)	<	<	<
PFHxS (PFASs)	<	< I	<
PFOS (linear) (PFASs)	1.41	1.73	1.09
PFOS (branched) (PFASs)	< C	3.06 **	1.14
sum PFOS (0.7 factor) (PFASs)	1.21	1.47	0.77
PFOSA (PFASs)	<	< C	< C

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS7

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFBA (PFASs)	#	<	0.38	<	&	<
PFPeA (PFASs)	#	<	#	<	#	<
PFHxA (PFASs)	-0.55	#	< I	<	0.44	#
PFHpA (PFASs)	#	#	-0.57	#	#	<
PFOA (linear) (PFASs)	0.32	0.45	0.42	0.31	0.39	0.29
PFOA (branched) (PFASs)	#	#	#	<	<	#
sum PFOA (0.7 factor) (PFASs)	0.10	0.29	0.29	-0.05	0.21	-0.02
PFNA (PFASs)	#	-0.55	#	#	#	<
PFDA (PFASs)	0.54	#	0.31	#	0.20	#
PFUnDA (PFASs)	-0.08	#	#	<	-0.05	#
PFDoA (PFASs)	&	<	-0.57	<	0.34	#
PFTrDA (PFASs)	1.41	<	#	<	0.97	<
PFTeDA (PFASs)	0.95	<	#	<	1.12	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	-1.05	<	-0.57	<	-0.56	#
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	#	#	#	#	#	<
PFHpS (PFASs)	#	<	<	<	#	<
PFOS (linear) (PFASs)	0.19	0.21	0.38	0.60	-0.23	-0.15
PFOS (branched) (PFASs)	4.14 **	7.59 **	2.79 *	11.45 **	2.09 *	-1.75
sum PFOS (0.7 factor) (PFASs)	0.50	2.53 *	0.83	1.87	0.26	-0.22
PFDS (PFASs)	#	<	#	<	#	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	0.27	<	&	<	0.11	#
8:2 FTS (PFASs)	0.03	<	-1.35	<	-0.03	#
10:2 FTS (PFASs)	0.18	<	-0.16	<	0.03	#
N-MeFOSAA (PFASs)	0.11	<	0.28	#	0.18	0.70
N-EtFOSAA (PFASs)	0.02	#	-0.15	-0.23	-0.01	0.50
PFOSA (PFASs)	&	<	-0.20	#	-0.31	#
N-MeOSA (PFASs)	<	<	#	<	#	#
HFPO-DA (PFASs)	#	<	<	<	#	<

PFAS7

Sample	**795**	**685**	**785**
PFBA (PFASs)	<	<	0.06
PFPeA (PFASs)	<	#	#
PFHxA (PFASs)	#	-0.35	#
PFHpA (PFASs)	#	0.38	#
PFOA (linear) (PFASs)	0.68	0.49	0.29
PFOA (branched) (PFASs)	#	#	0.74
sum PFOA (0.7 factor) (PFASs)	0.29	0.56	0.34
PFNA (PFASs)	#	-0.03	<
PFDA (PFASs)	0.46	0.51	#
PFUnDA (PFASs)	0.46	-0.03	#
PFDoA (PFASs)	-0.07	0.24	#
PFTrDA (PFASs)	#	-0.59	#
PFTeDA (PFASs)	#	#	<
PFHxDA (PFASs)	<	<	<
PFODA (PFASs)	<	<	<
PFBS (PFASs)	#	#	#
PFPeS (PFASs)	<	<	<
PFHxS (PFASs)	#	0.15	#
PFHpS (PFASs)	<	0.89	#
PFOS (linear) (PFASs)	0.36	0.53	0.31
PFOS (branched) (PFASs)	1.13	0.74	7.00 **
sum PFOS (0.7 factor) (PFASs)	0.52	0.52	1.24
PFDS (PFASs)	#	#	#
4:2 FTS (PFASs)	<	<	<
6:2 FTS (PFASs)	#	<	<
8:2 FTS (PFASs)	2.81 *	<	<
10:2 FTS (PFASs)	0.26	<	#
N-MeFOSAA (PFASs)	0.66	#	0.67
N-EtFOSAA (PFASs)	0.38	0.62	0.16
PFOSA (PFASs)	&	-0.60	0.02
N-MeOSA (PFASs)	#	<	#
HFPO-DA (PFASs)	<	<	<

Per- and Polyfluoroalkyl substances z'-scores-values

PFAS9

Sample	**793**	**796**	**789**	**773**	**793-2**	**758**
PFBA (PFASs)	<	<	1.31	<	<	<
PFPeA (PFASs)	#	#	#	#	#	<
PFHxA (PFASs)	3.55 **	<	3.84 **	<	3.31 **	#
PFHpA (PFASs)	#	<	0.63	<	<	<
PFOA (linear) (PFASs)	0.35	0.49	0.32	0.43	0.45	0.61
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	0.39	0.38	0.21	0.29	0.43	0.39
PFNA (PFASs)	<	0.64	<	<	<	<
PFDA (PFASs)	-0.36	#	0.66	<	0.45	<
PFUnDA (PFASs)	0.52	<	<	<	0.26	<
PFDoA (PFASs)	&	<	0.97	<	0.49	<
PFTrDA (PFASs)	< C	<	<	<	< C	<
PFTeDA (PFASs)	< I	<	<	<	< I	<
PFBS (PFASs)	1.20	<	1.13	<	1.23	<
PFHxS (PFASs)	<	<	<	<	#	<
PFOS (linear) (PFASs)	0.76	1.41	0.51	0.69	0.57	0.10
PFOS (branched) (PFASs)	0.62	0.85	0.63	1.00	0.25	0.47
sum PFOS (0.7 factor) (PFASs)	0.42	0.67	0.39	0.46	0.43	0.19
PFDS (PFASs)	<	<	#	<	<	<
PFOSA (PFASs)	&	<	2.85 *	<	13.29 **	#

PFAS9

Sample	**795**	**685**	**785**
PFBA (PFASs)	<	<	0.07
PFPeA (PFASs)	<	<	#
PFHxA (PFASs)	#	6.08 **	#
PFHpA (PFASs)	<	0.81	<
PFOA (linear) (PFASs)	0.66	0.30	0.14
PFOA (branched) (PFASs)	<	<	-0.56
sum PFOA (0.7 factor) (PFASs)	0.31	0.26	-0.08
PFNA (PFASs)	<	0.64	<
PFDA (PFASs)	0.14	-0.06	<
PFUnDA (PFASs)	0.12	1.51	<
PFDoA (PFASs)	0.90	-0.04	<
PFTrDA (PFASs)	<	0.26	<
PFTeDA (PFASs)	<	<	<
PFBS (PFASs)	<	<	#
PFHxS (PFASs)	<	8.79 **	<
PFOS (linear) (PFASs)	0.39	-0.06	0.47
PFOS (branched) (PFASs)	0.95	0.47	0.75
sum PFOS (0.7 factor) (PFASs)	0.53	0.12	0.44
PFDS (PFASs)	<	#	<
PFOSA (PFASs)	&	1.78	1.70

Per- and Polyfluoroalkyl substances z'-scores-values

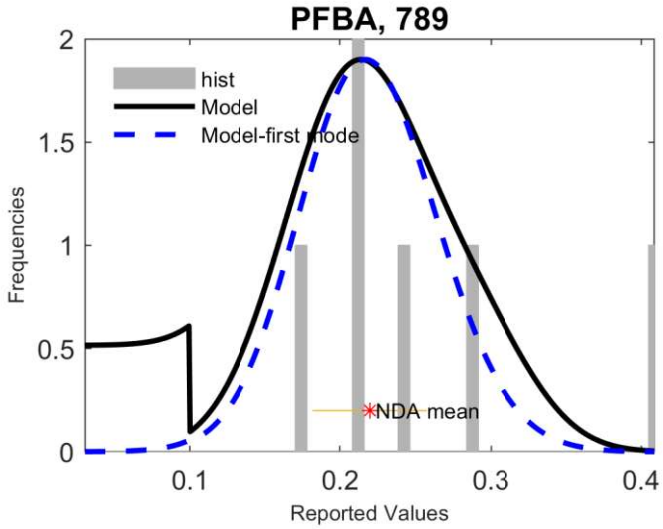
PFAS10

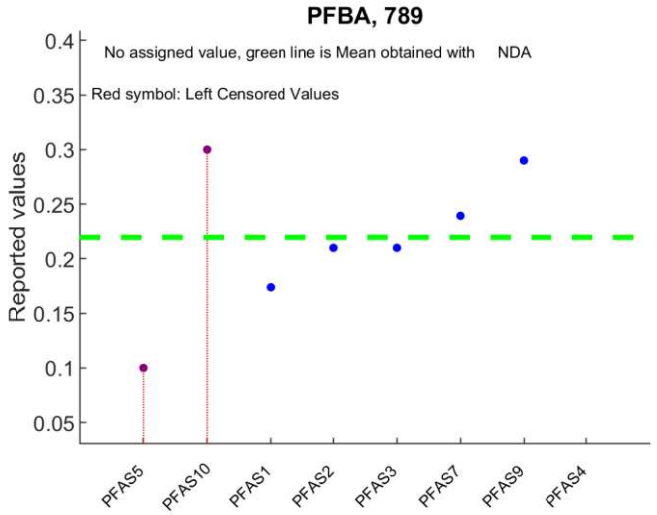
Sample	793	796	789	773	793-2	758
PFBA (PFASs)	<	<	< C	<	<	<
PFPeA (PFASs)	<	<	<	<	<	<
PFHxA (PFASs)	0.11	<	-0.67	<	-0.40	<
PFHpA (PFASs)	<	<	< C	<	<	<
PFOA (linear) (PFASs)	-0.27	-0.23	-0.47	-0.29	-0.45	-0.45
PFOA (branched) (PFASs)	<	<	<	<	<	<
sum PFOA (0.7 factor) (PFASs)	-0.46	-0.32	-0.42	0.83	-0.55	0.37
PFNA (PFASs)	<	< C	<	<	<	<
PFDA (PFASs)	-0.08	<	-0.46	<	-0.34	<
PFUnDA (PFASs)	0.12	<	<	<	0.04	<
PFDoA (PFASs)	&	<	< C	<	-0.39	<
PFTrDA (PFASs)	-1.02	<	<	<	-0.94	<
PFTeDA (PFASs)	-0.78	<	<	<	-0.49	<
PFHxDA (PFASs)	<	<	<	<	<	<
PFODA (PFASs)	<	<	<	<	<	<
PFBS (PFASs)	0.60	<	< C	<	< C	<
PFPeS (PFASs)	<	<	<	<	<	<
PFHxS (PFASs)	<	<	<	<	<	<
PFHpS (PFASs)	<	<	<	<	<	<
PFOS (linear) (PFASs)	-0.33	-0.38	-0.33	0.12	-0.55	-0.28
PFOS (branched) (PFASs)	-0.31	-0.10	-0.09	-0.05	-0.28	-0.91
sum PFOS (0.7 factor) (PFASs)	-0.38	-0.04	-0.40	0.02	-0.61	-0.24
PFDS (PFASs)	<	<	<	<	<	<
4:2 FTS (PFASs)	<	<	<	<	<	<
6:2 FTS (PFASs)	-0.02	<	<	<	-0.30	<
8:2 FTS (PFASs)	-0.72	<	< C	<	-0.70	<
10:2 FTS (PFASs)	1.08	<	0.95	<	0.89	<
N-MeFOSAA (PFASs)	0.25	<	-0.09	<	-0.15	0.58
N-EtFOSAA (PFASs)	0.12	<	0.12	-0.29	0.12	0.64
PFOSA (PFASs)	&	<	0.59	<	0.22	<
N-MeOSA (PFASs)	<	<	<	<	<	<
8:2 diPAP (PFASs)	-0.15	<	<	<	&	<
HFPO-DA (PFASs)	<	<	<	<	<	<

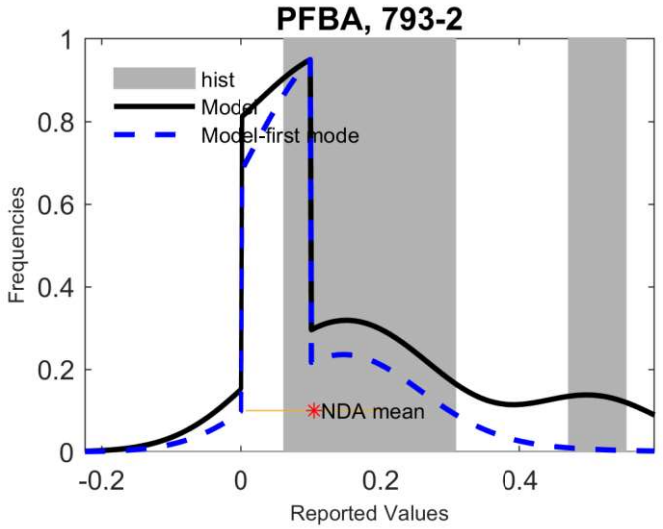
PFAS10

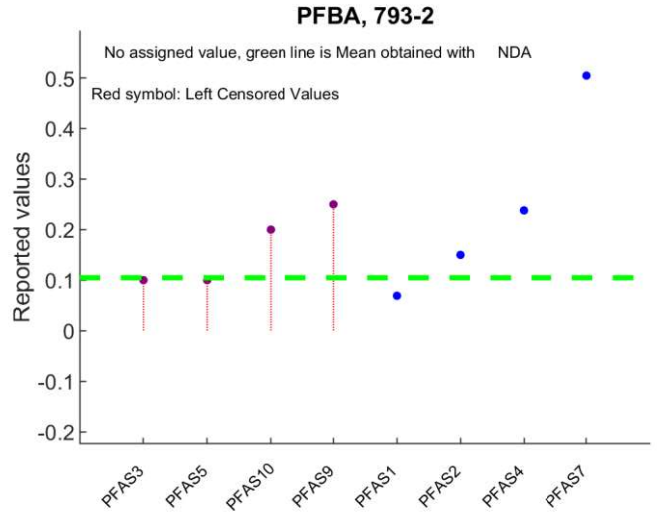
Sample	795	685	785	
PFBA (PFASs)	<	<	0.79	
PFPeA (PFASs)	<	<	<	
PFHxA (PFASs)	<	< C	<	
PFHpA (PFASs)	<	-1.16	<	
PFOA (linear) (PFASs)	-0.43	-0.23	-0.45	
PFOA (branched) (PFASs)	<	<	4.89	**
sum PFOA (0.7 factor) (PFASs)	0.10	-0.10	-0.43	
PFNA (PFASs)	<	-0.51	<	
PFDA (PFASs)	-0.31	0.16	<	
PFUnDA (PFASs)	-0.50	0.41	<	
PFDoA (PFASs)	< C	0.75	<	
PFTrDA (PFASs)	<	< C	<	
PFTeDA (PFASs)	<	<	<	
PFHxDA (PFASs)	<	<	<	
PFODA (PFASs)	<	<	<	
PFBS (PFASs)	<	<	<	
PFPeS (PFASs)	<	<	<	
PFHxS (PFASs)	<	0.17	<	
PFHpS (PFASs)	<	< C	<	
PFOS (linear) (PFASs)	-0.13	-0.08	-0.01	
PFOS (branched) (PFASs)	-0.24	0.00	0.08	
sum PFOS (0.7 factor) (PFASs)	-0.99	-0.98	-0.59	
PFDS (PFASs)	<	<	<	
4:2 FTS (PFASs)	<	<	<	
6:2 FTS (PFASs)	<	<	<	
8:2 FTS (PFASs)	-0.41	<	<	
10:2 FTS (PFASs)	1.67	<	<	
N-MeFOSAA (PFASs)	0.34	<	-0.17	
N-EtFOSAA (PFASs)	0.73	1.05	0.74	
PFOSA (PFASs)	<	-0.26	0.56	
N-MeOSA (PFASs)	<	<	<	
8:2 diPAP (PFASs)	<	<	<	
HFPO-DA (PFASs)	<	<	<	

Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

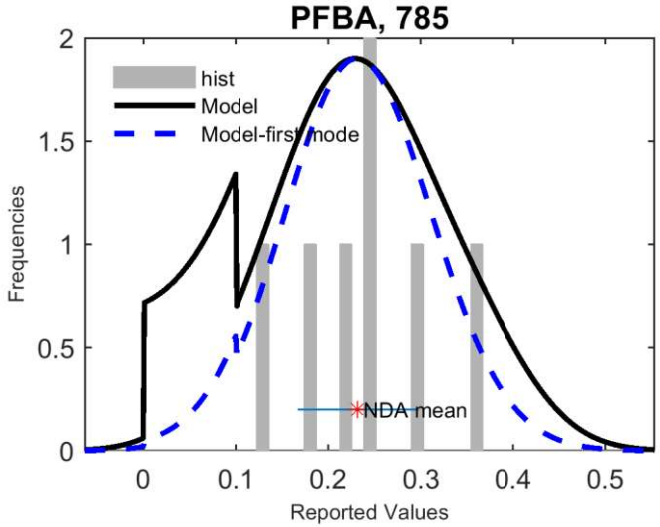


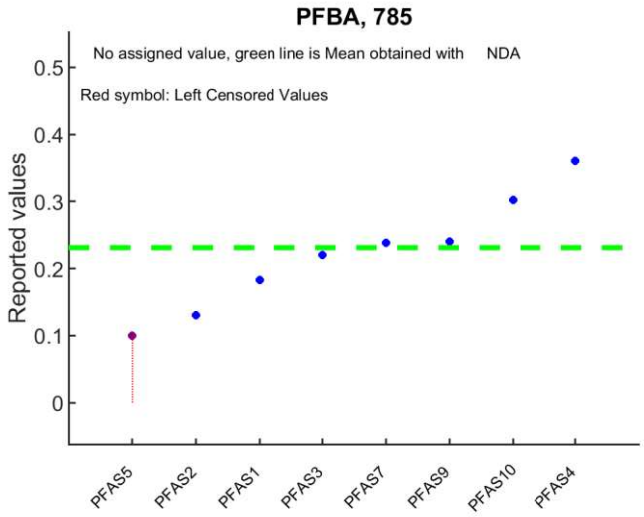




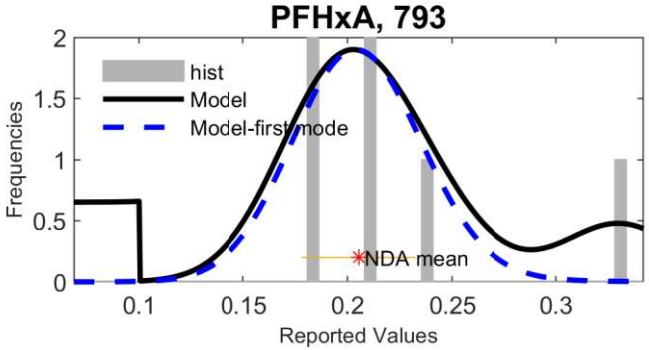


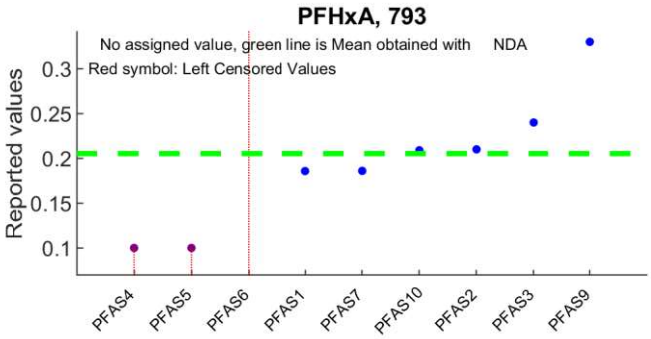
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

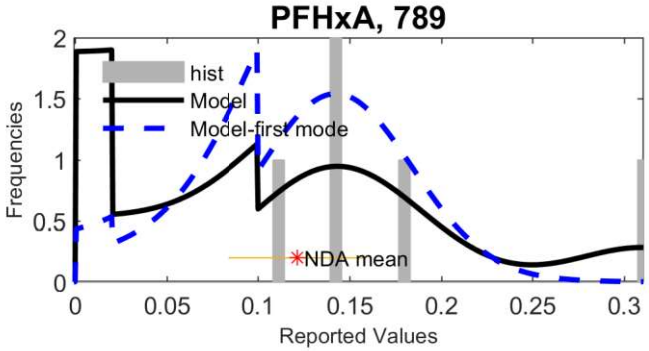


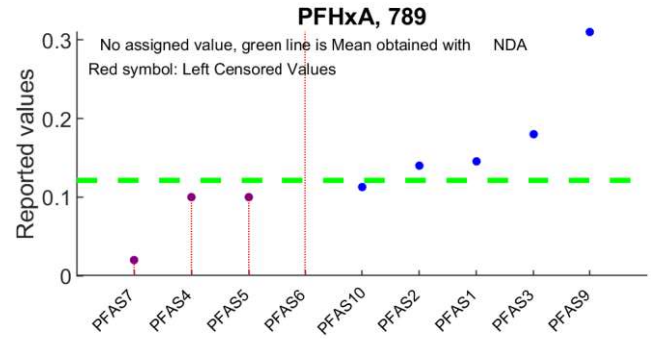


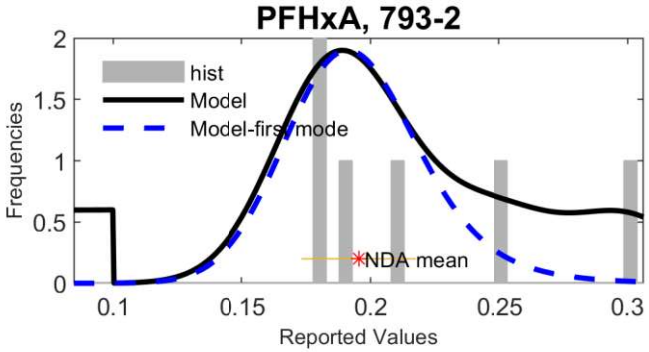
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

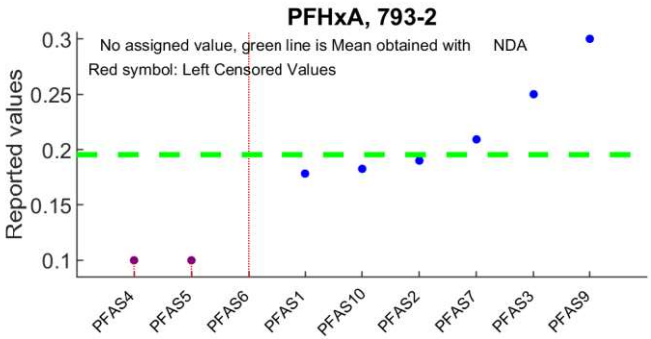




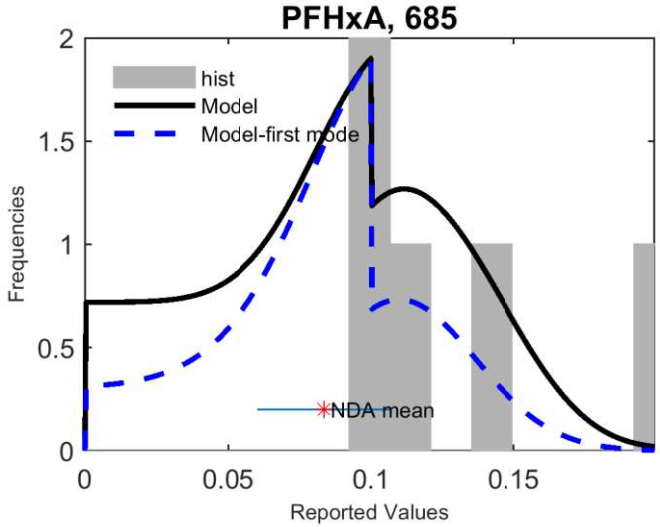


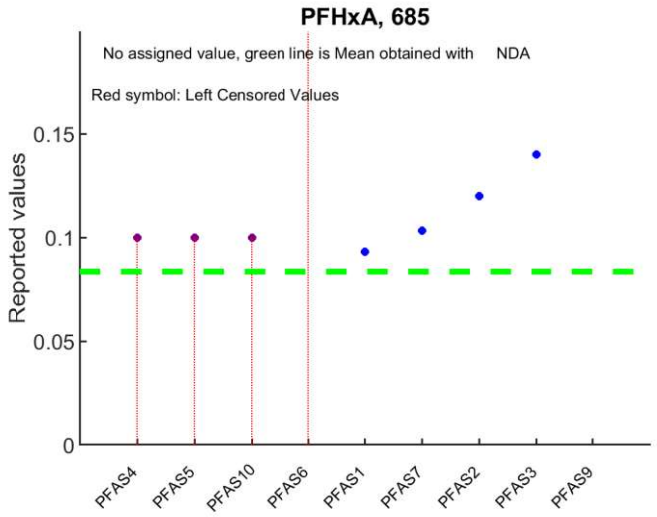




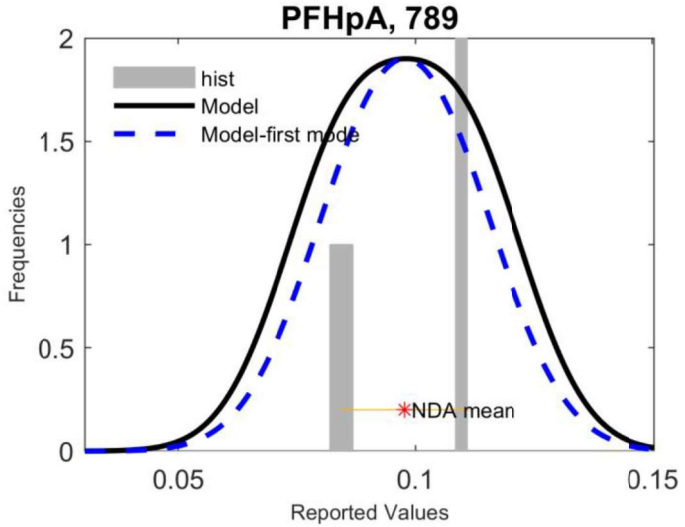


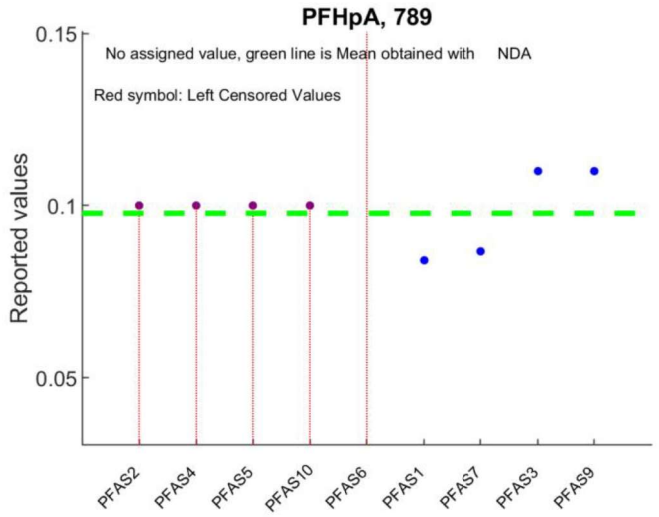
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview



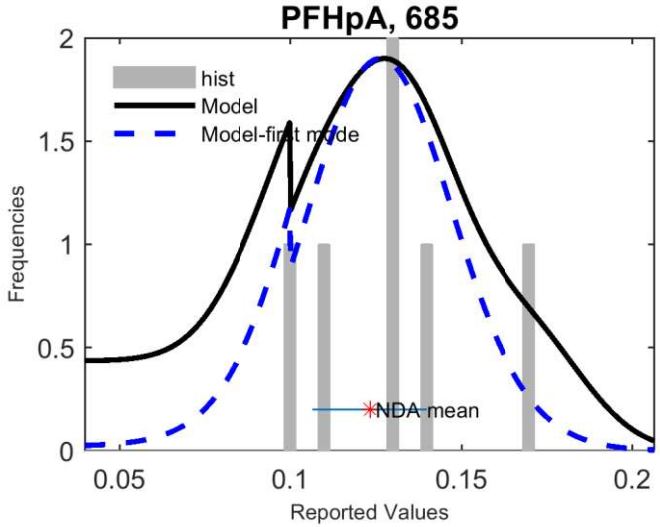


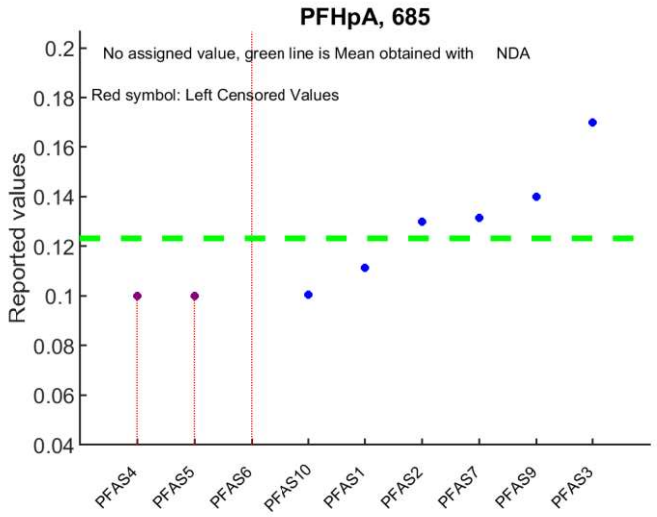
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview



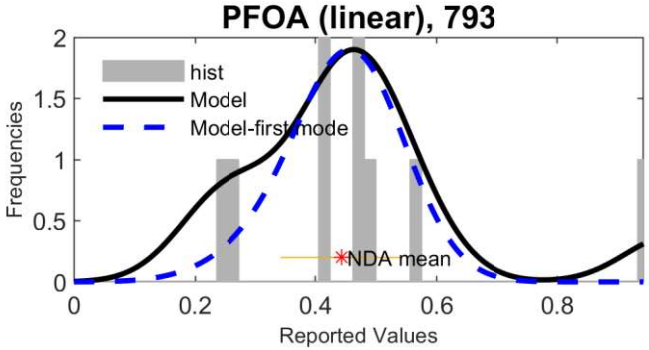


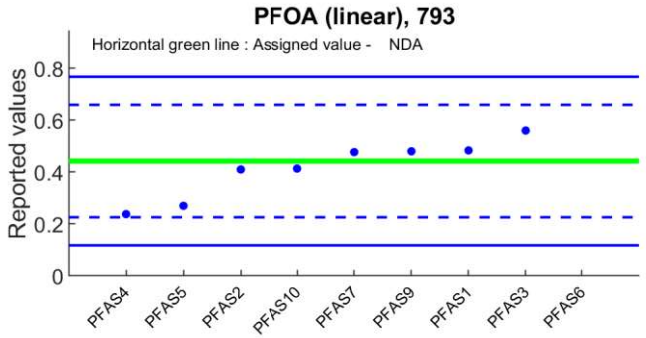
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

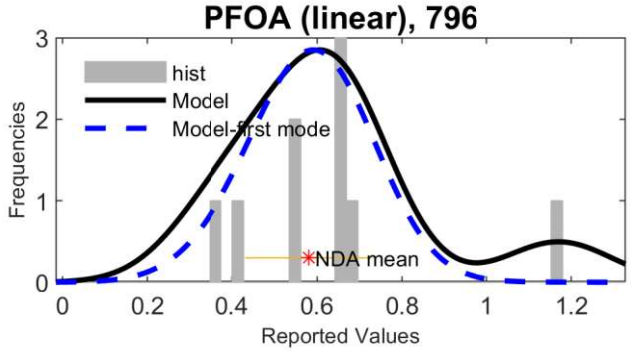


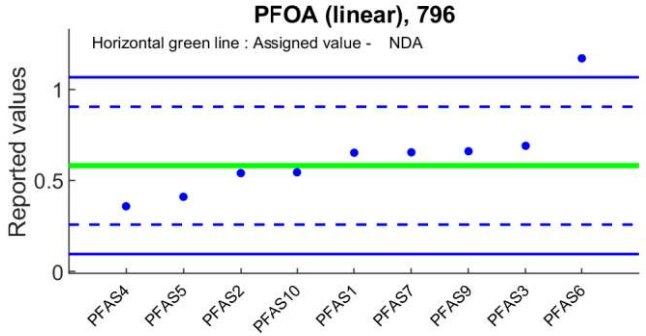


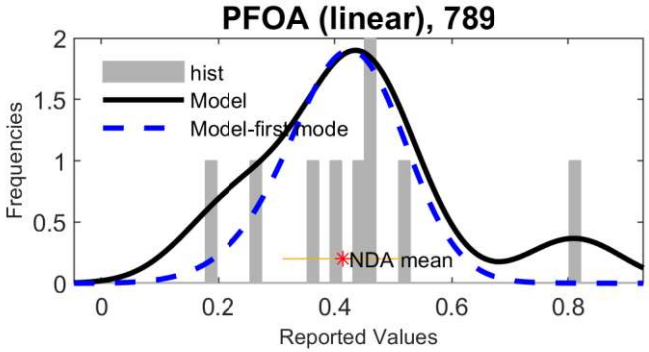
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

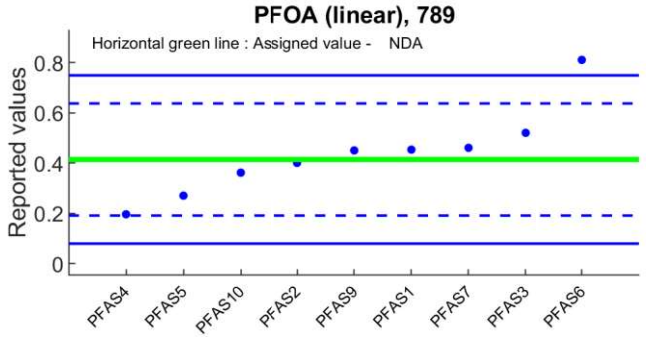




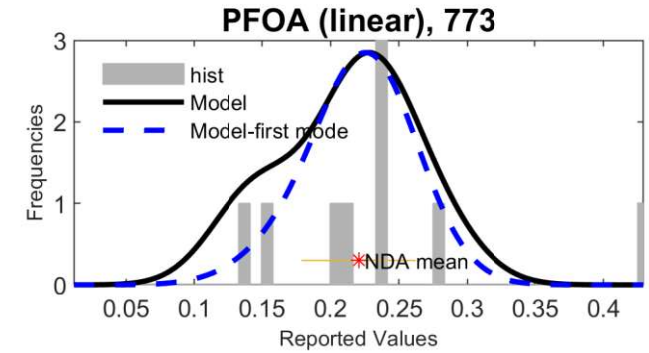


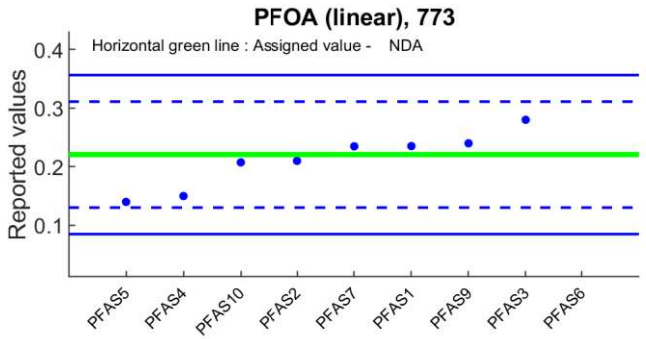


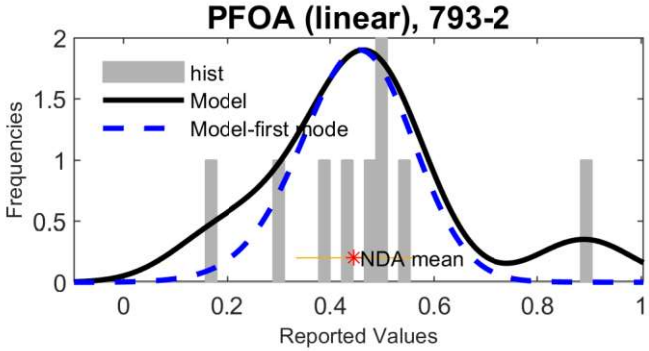


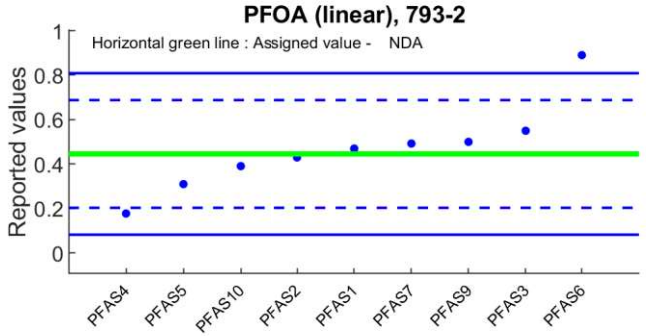


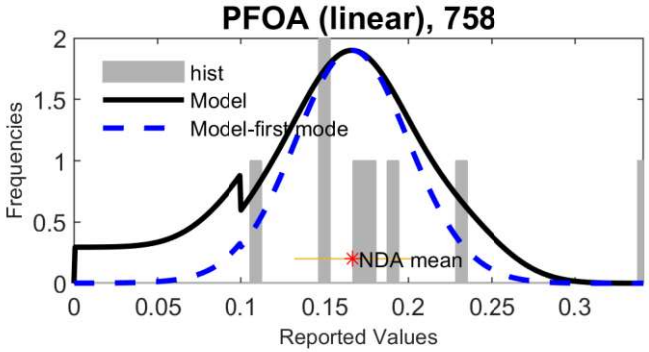
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

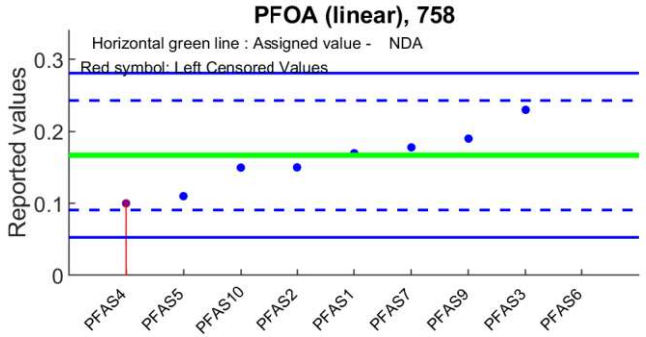




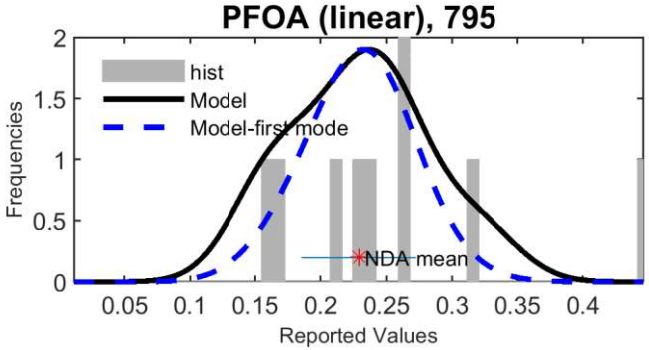


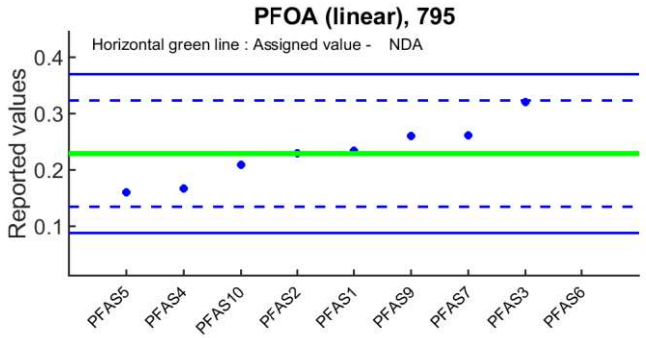


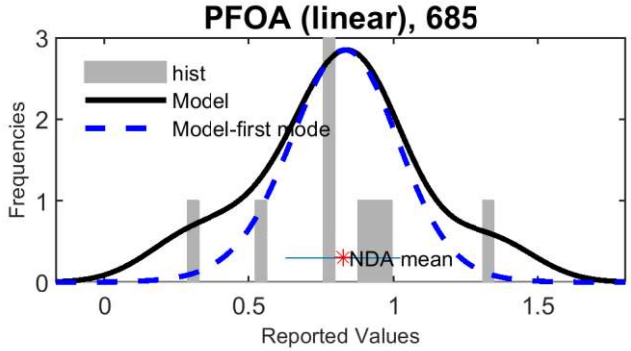


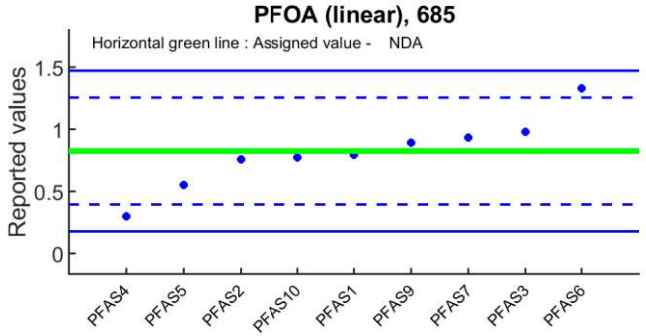


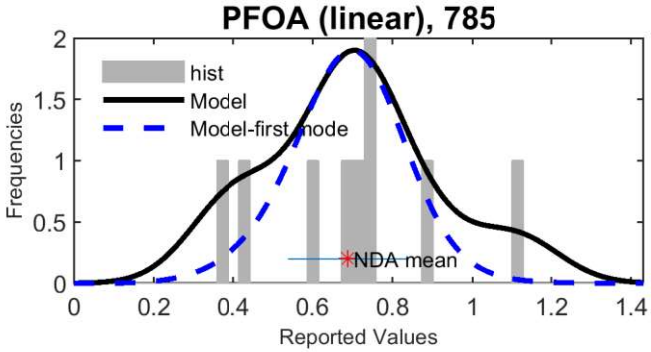
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

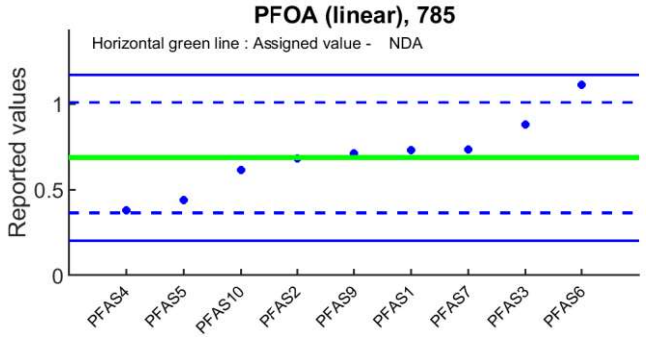




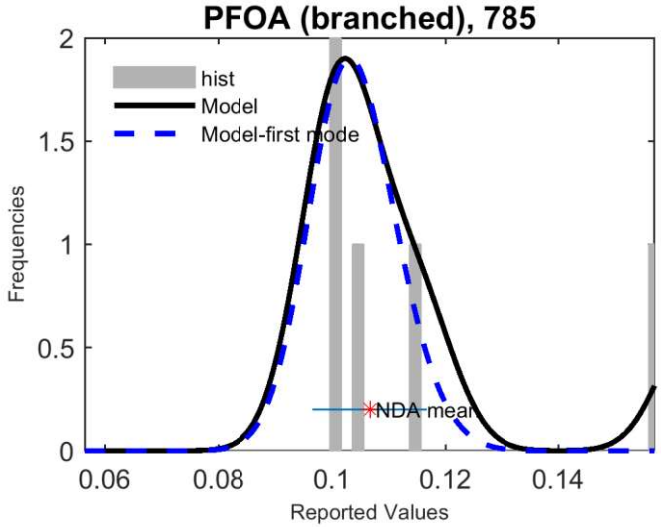


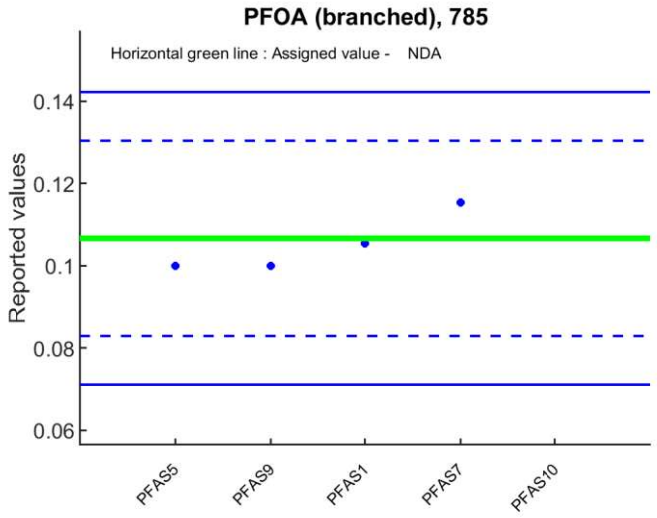




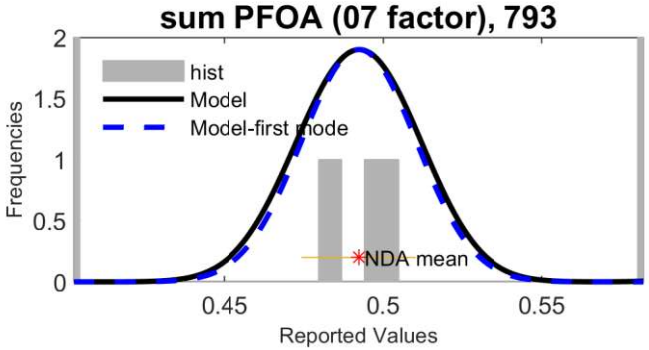


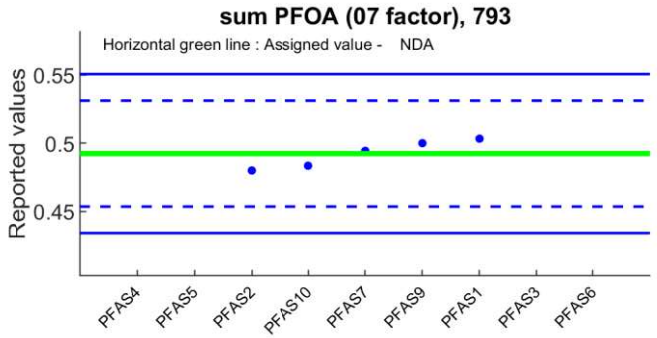
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

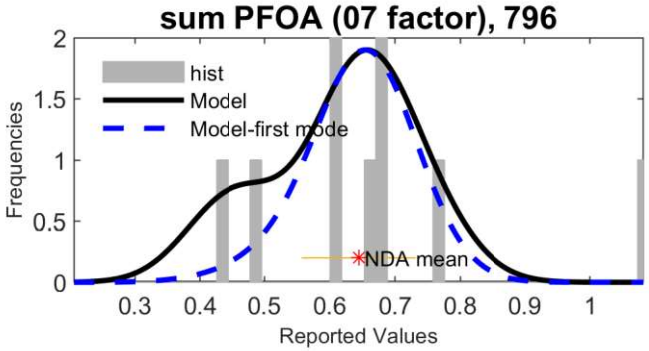


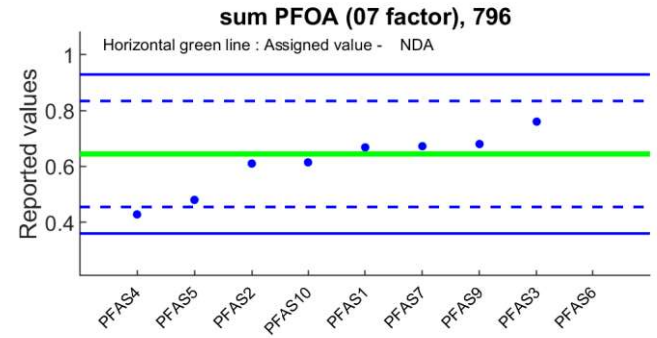


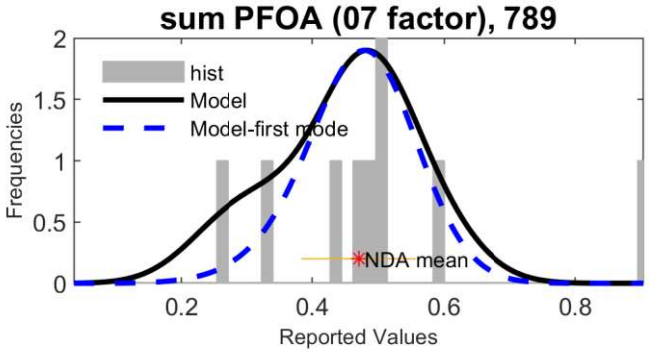
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

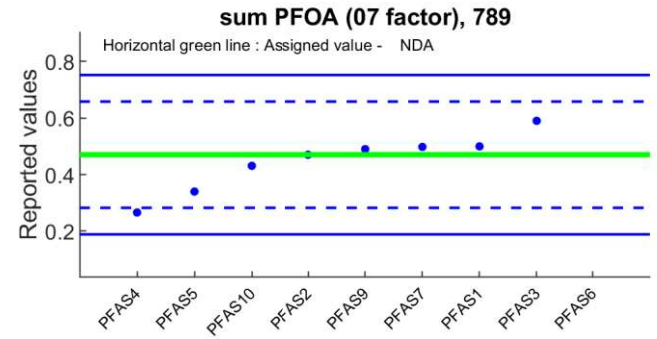




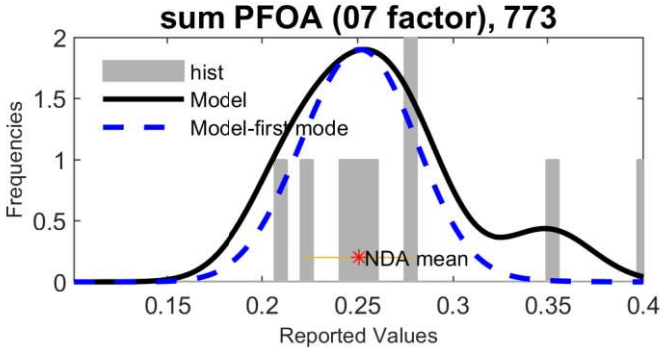


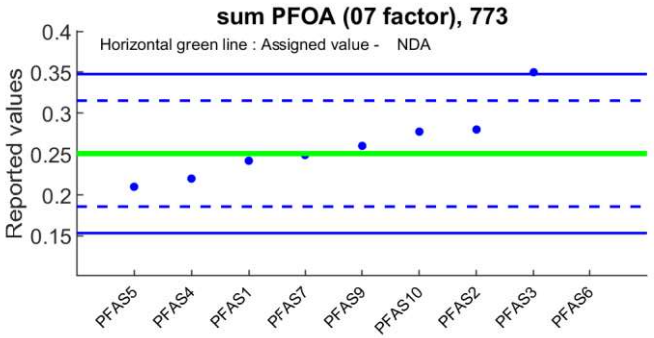


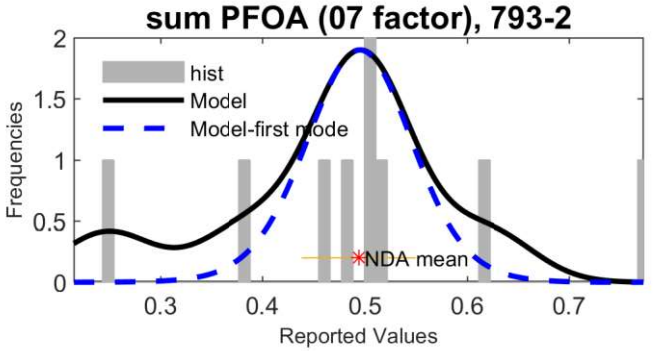


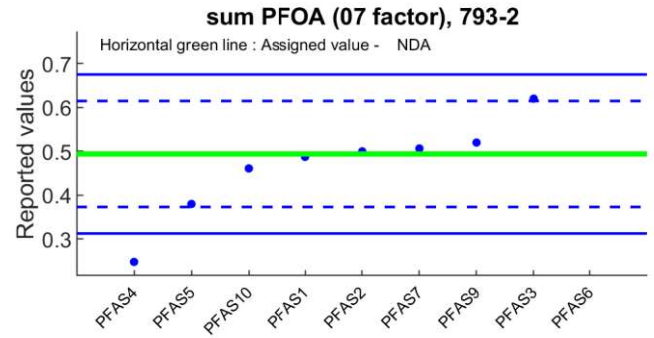


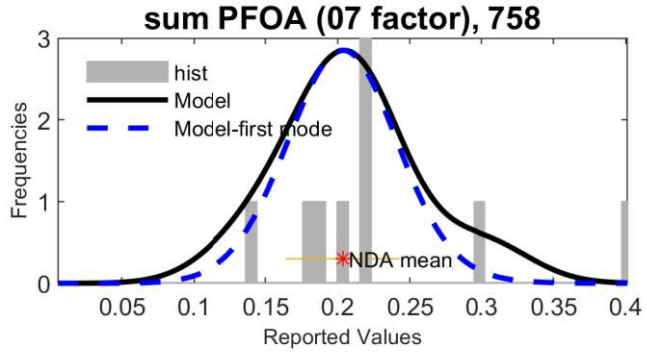
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

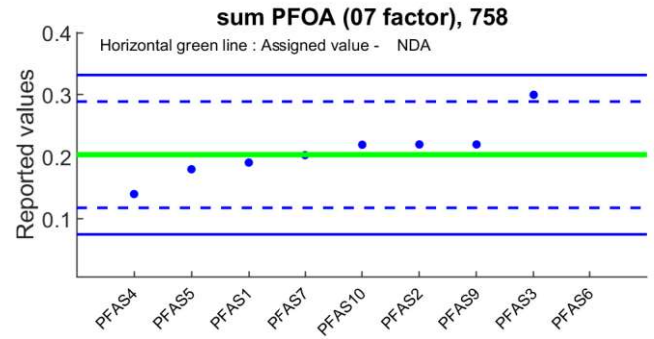




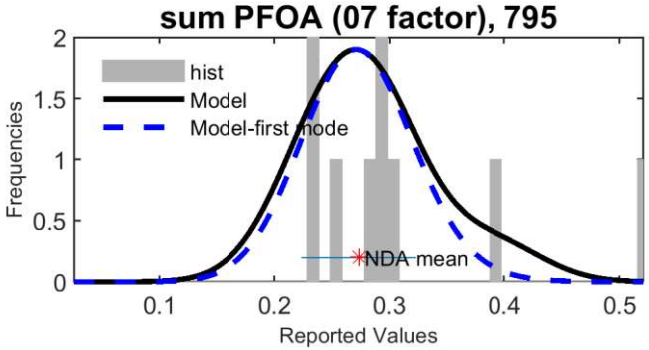


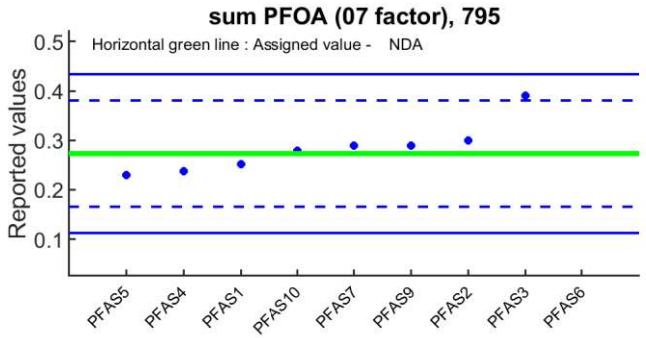


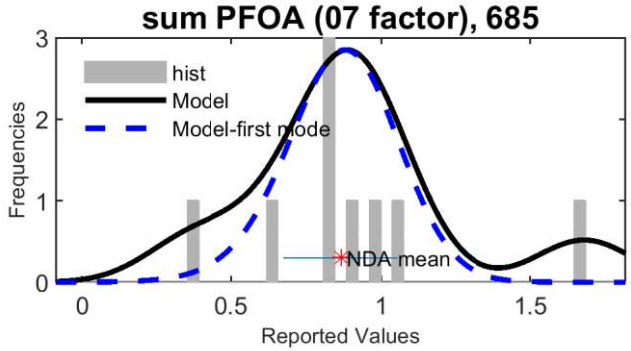


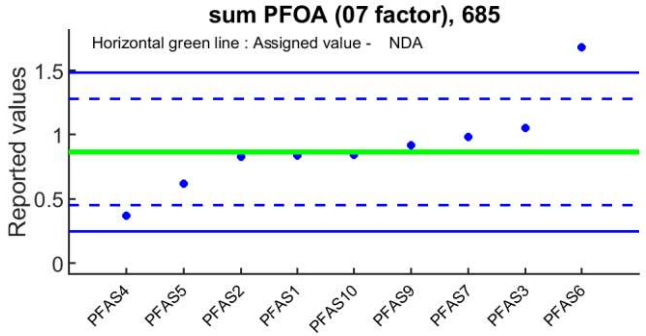


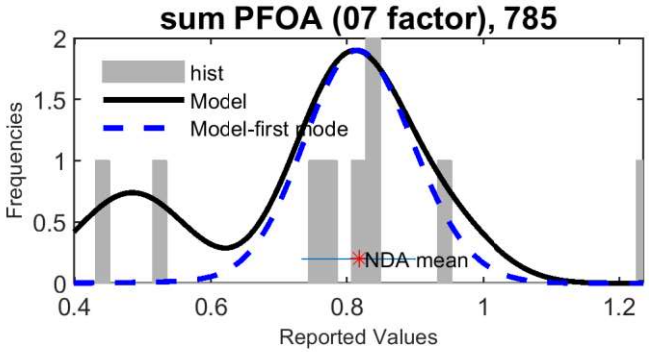
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

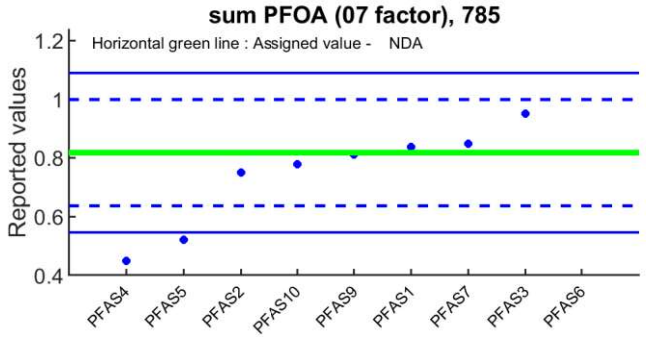




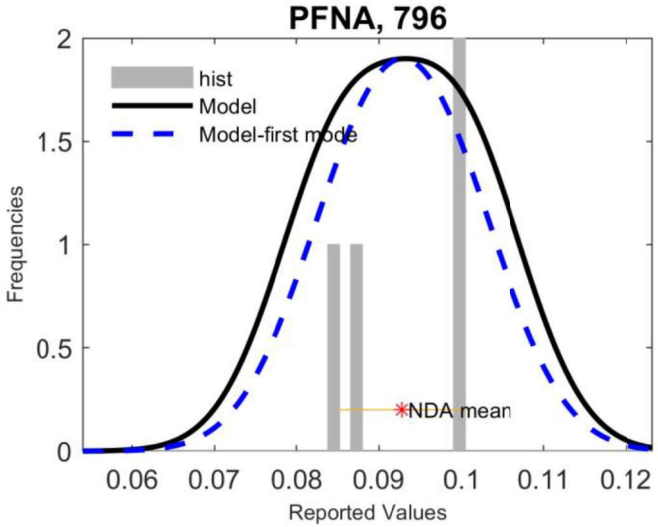


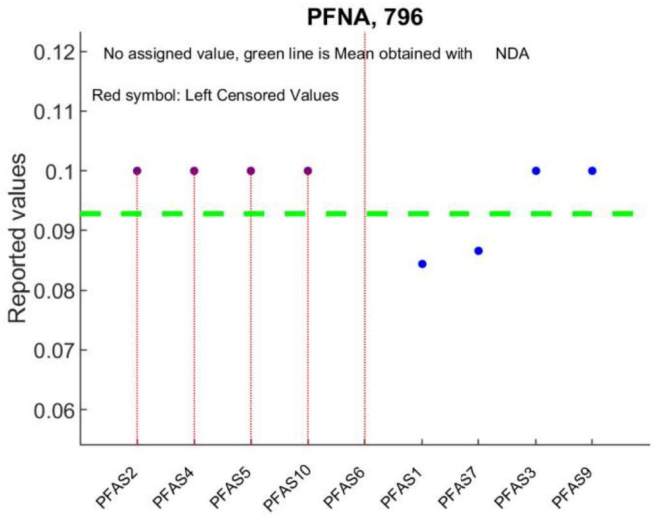




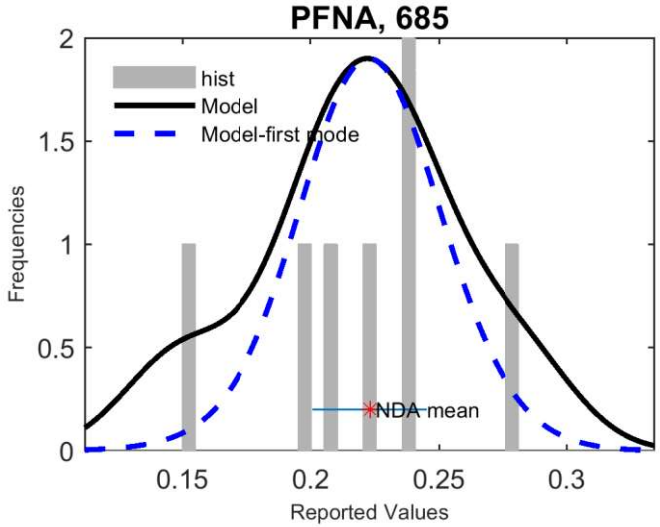


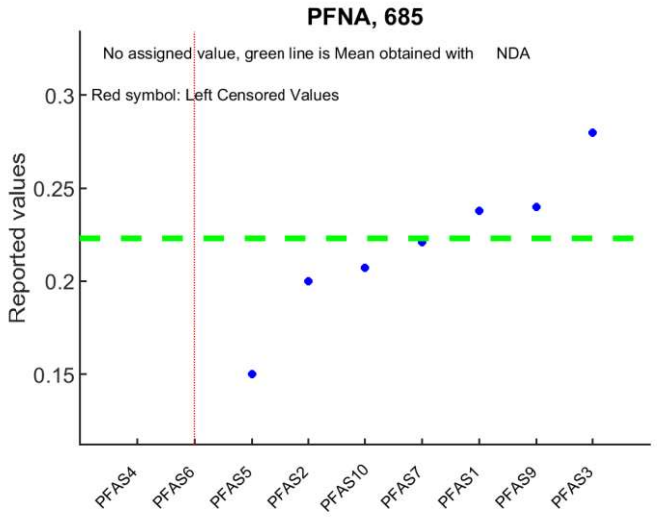
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview



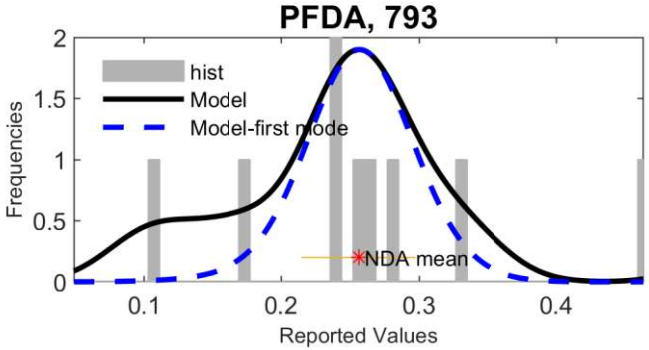


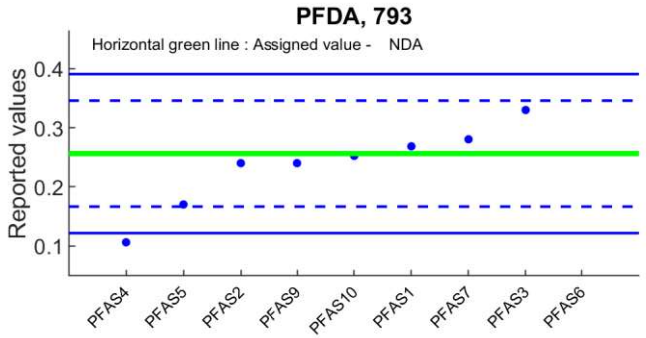
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

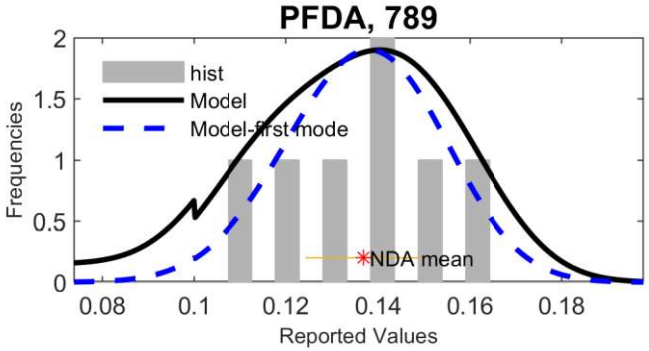


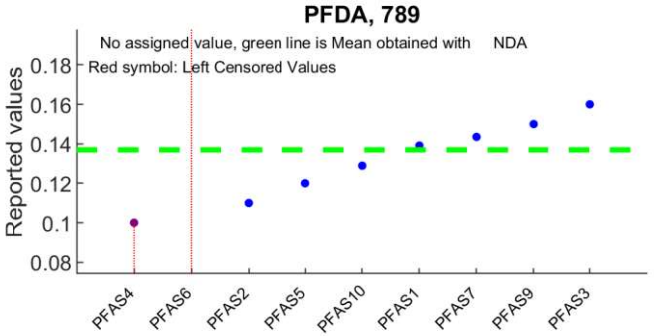


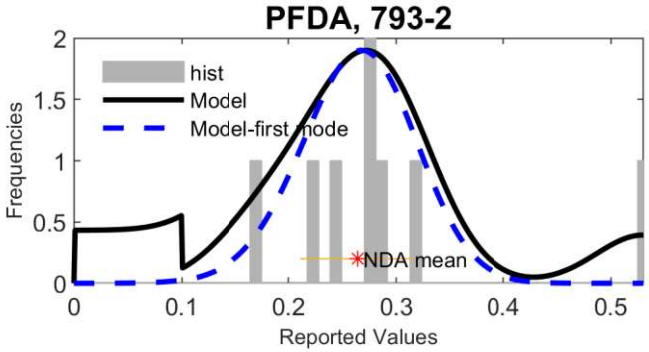
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

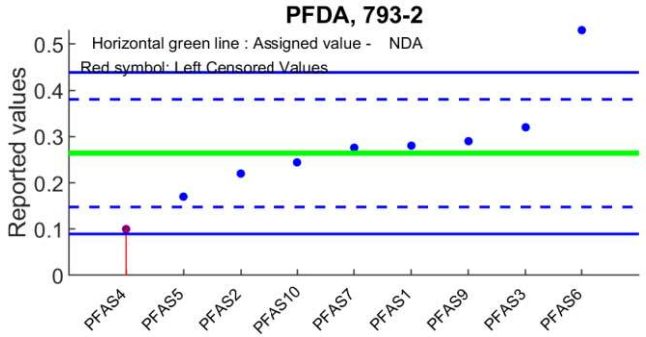




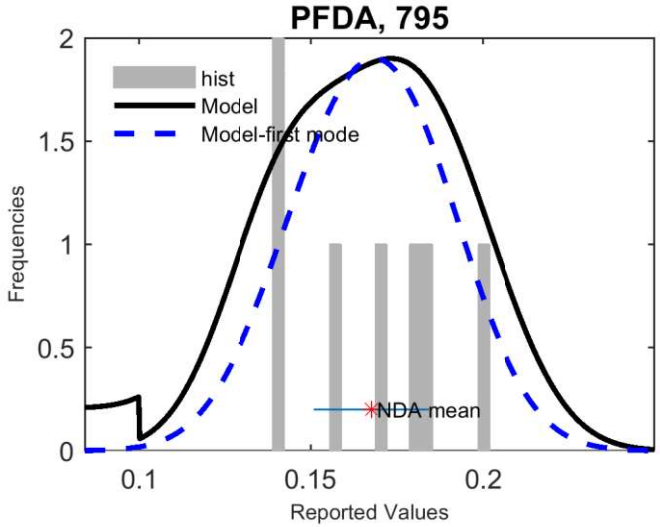


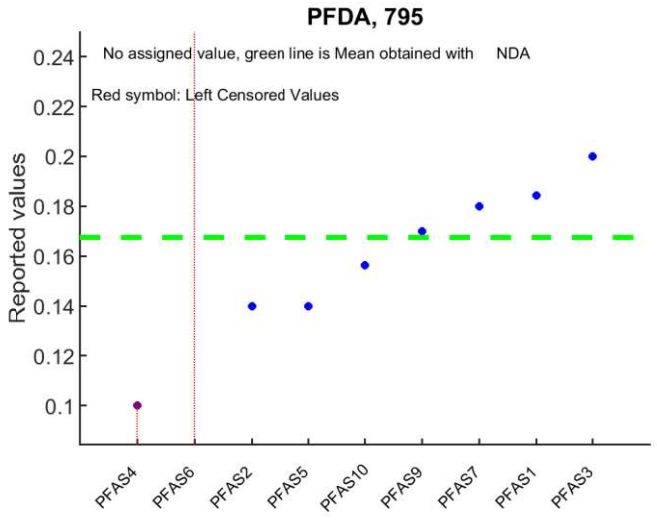


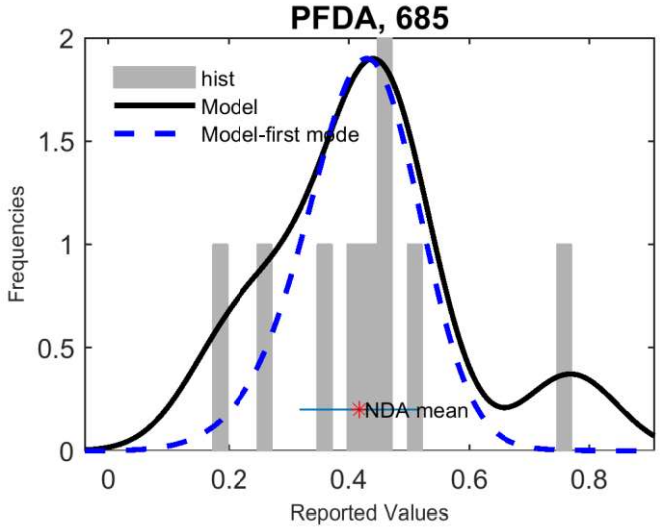


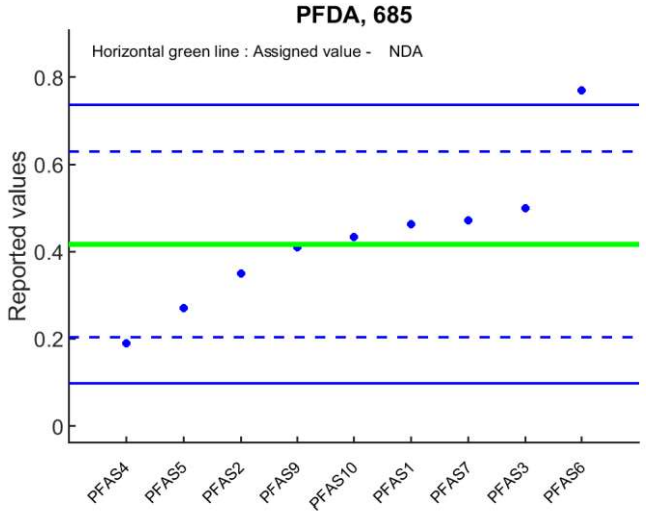


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

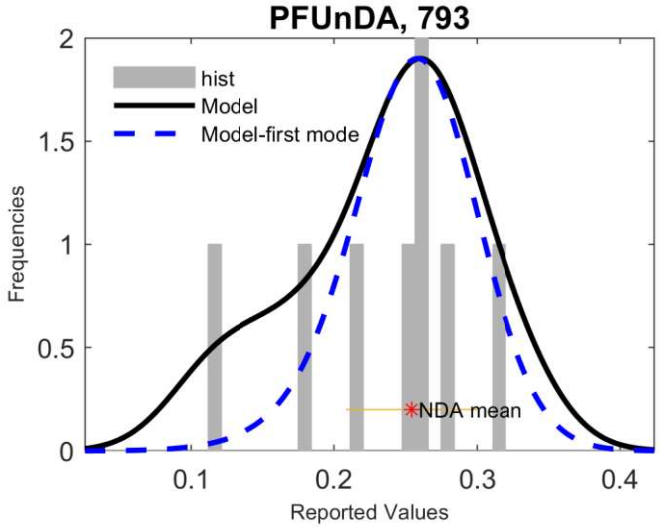


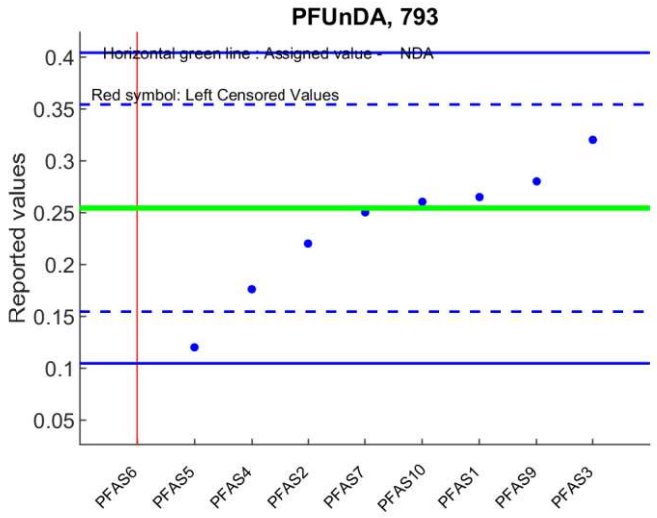


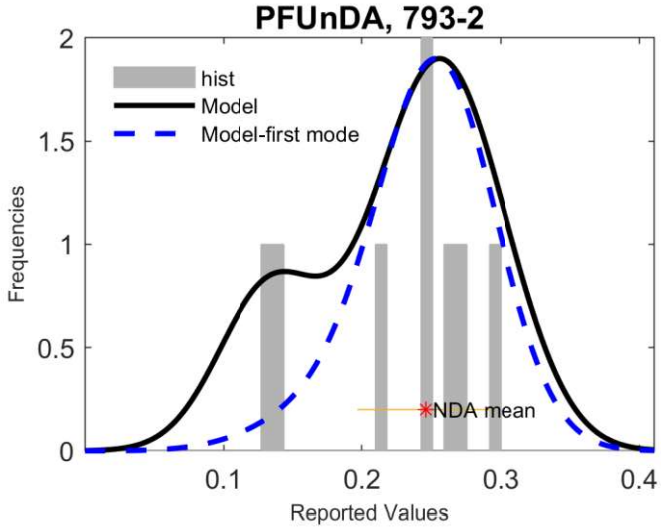


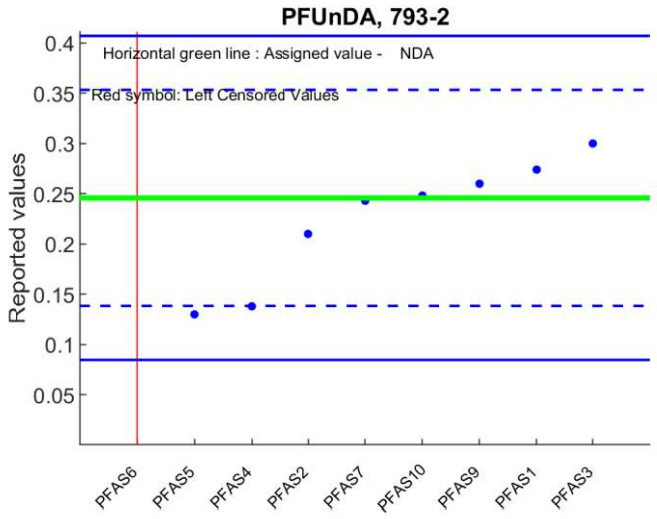


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

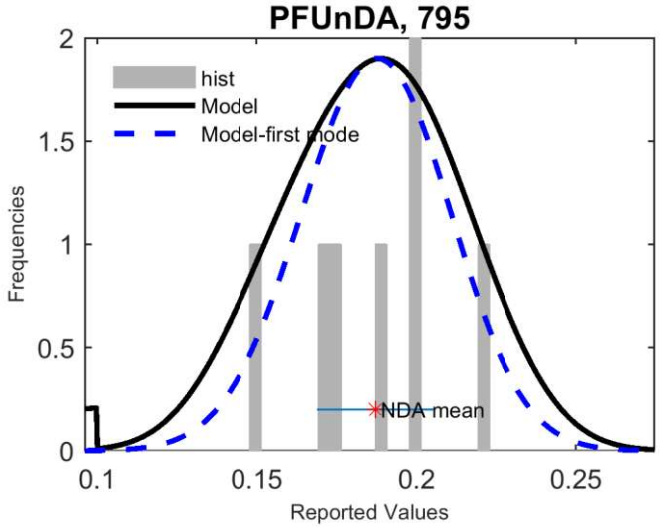


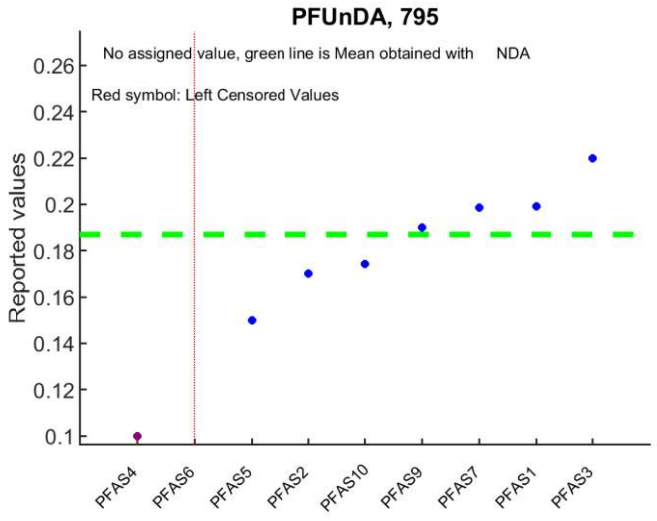


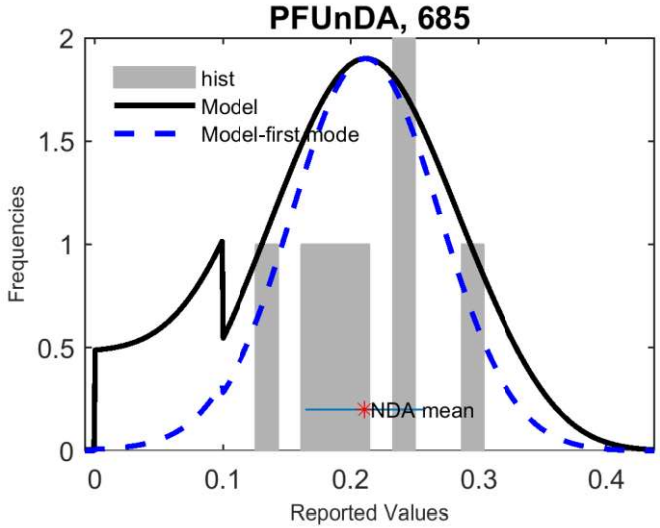


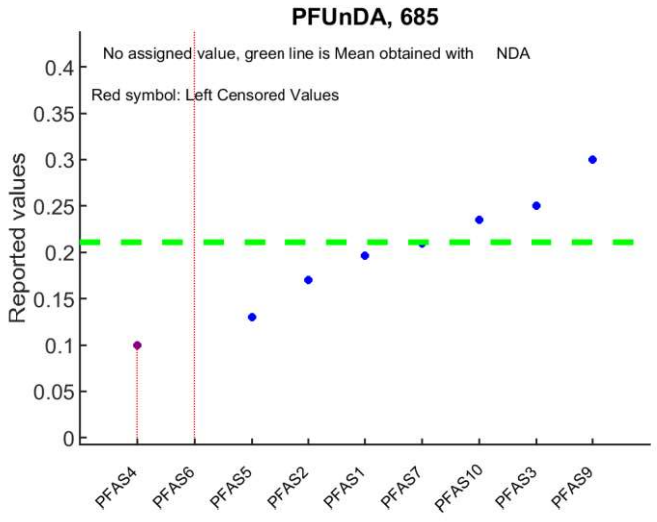


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

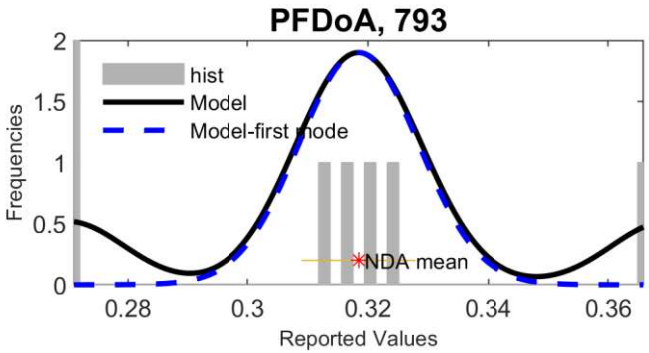


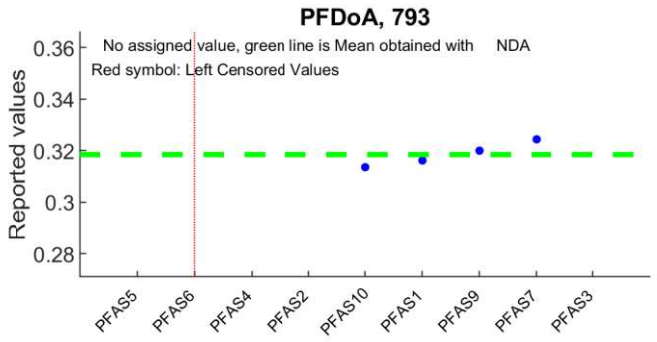


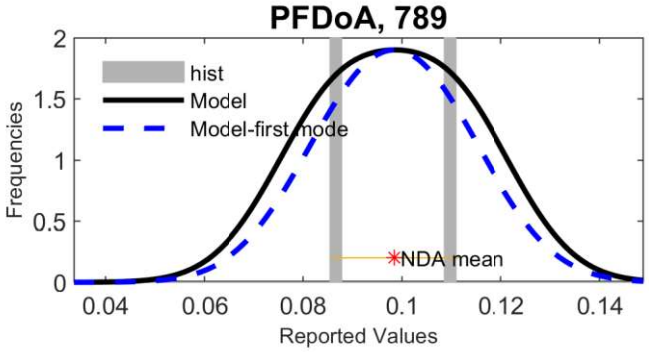


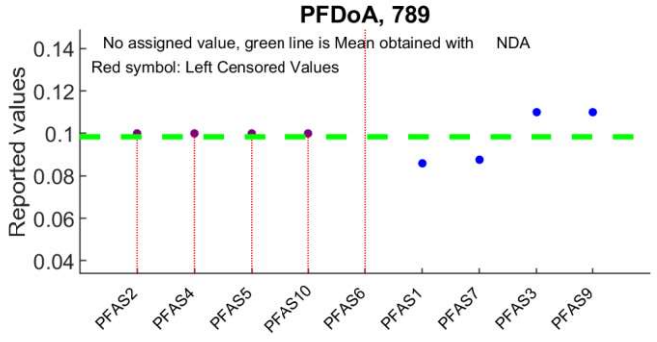


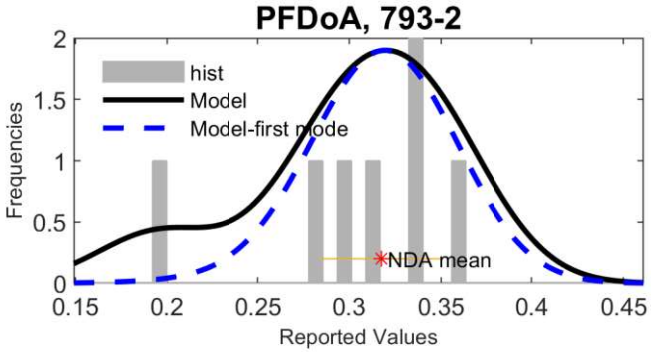
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

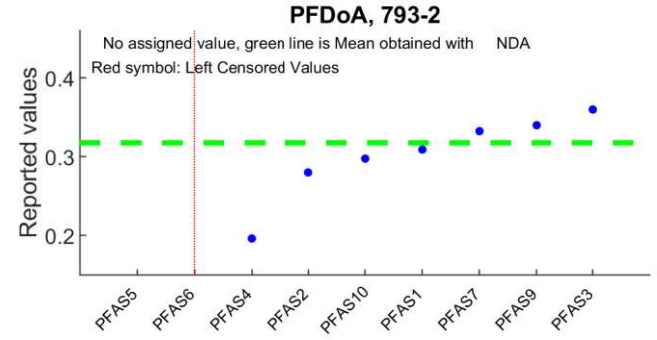




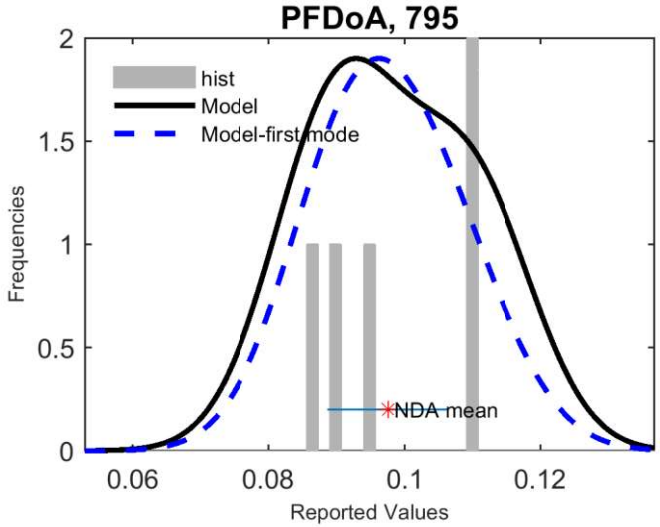


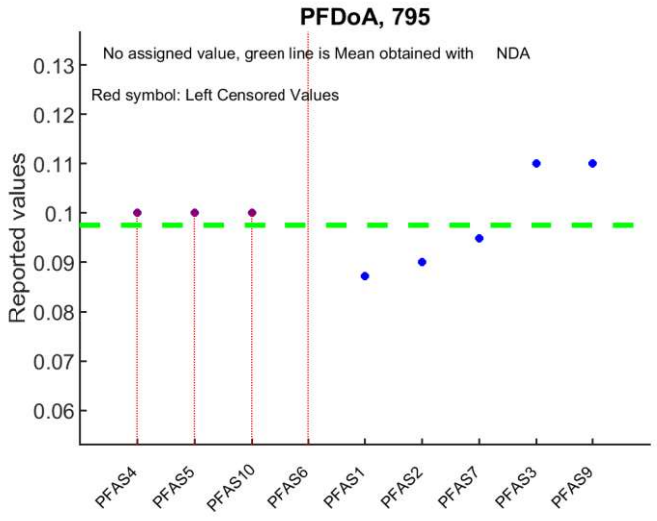


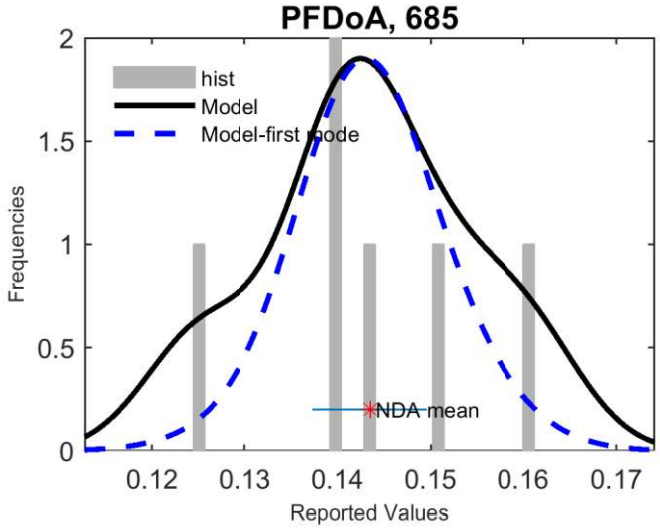


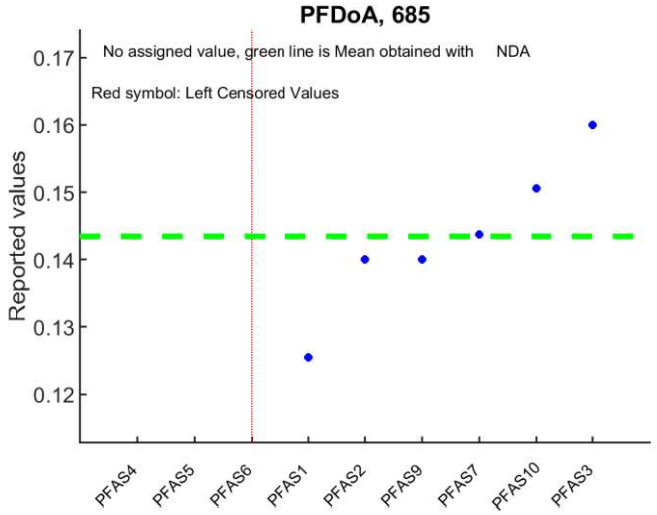


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

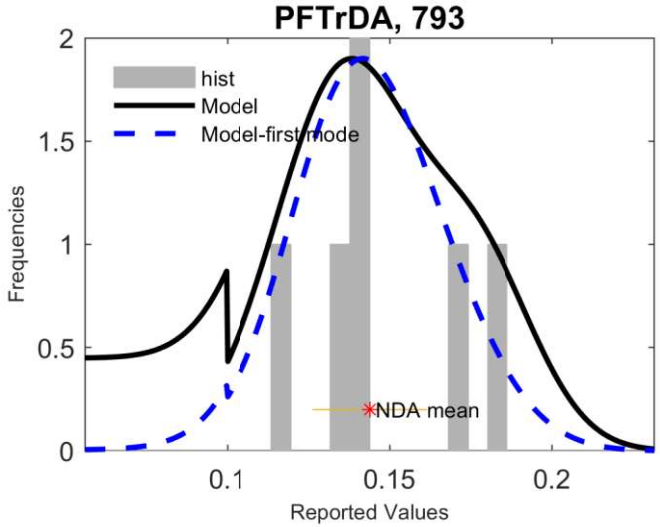


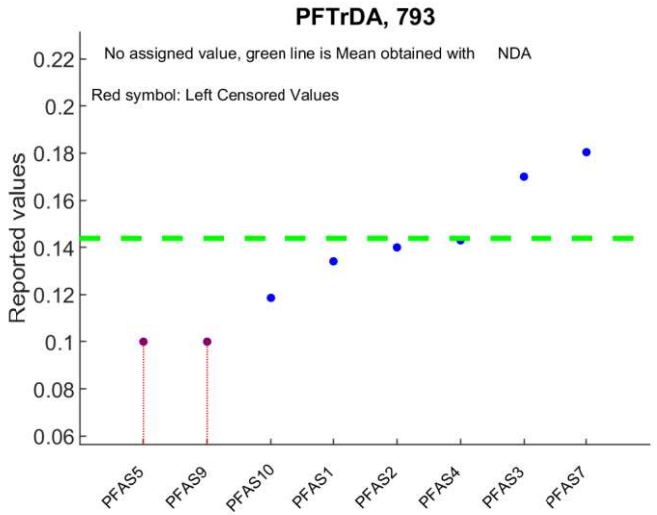


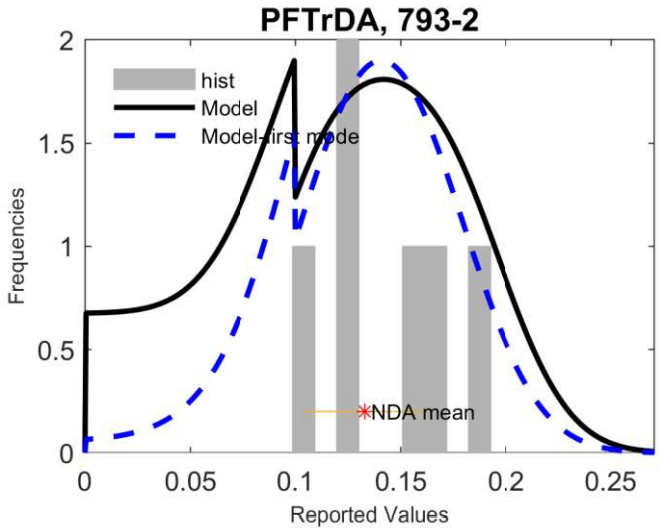


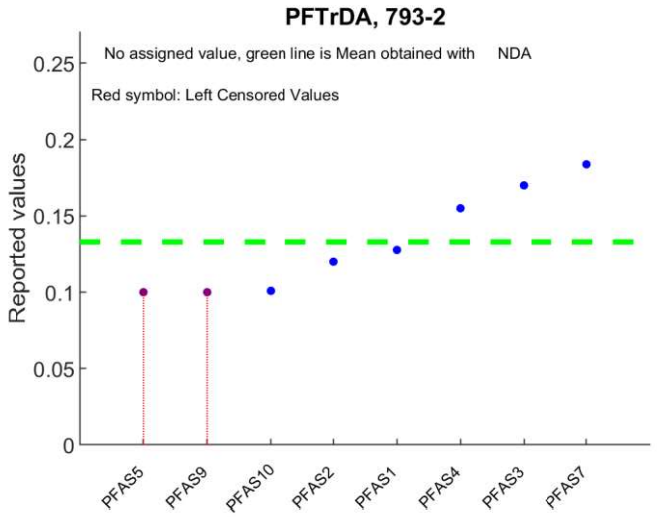


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

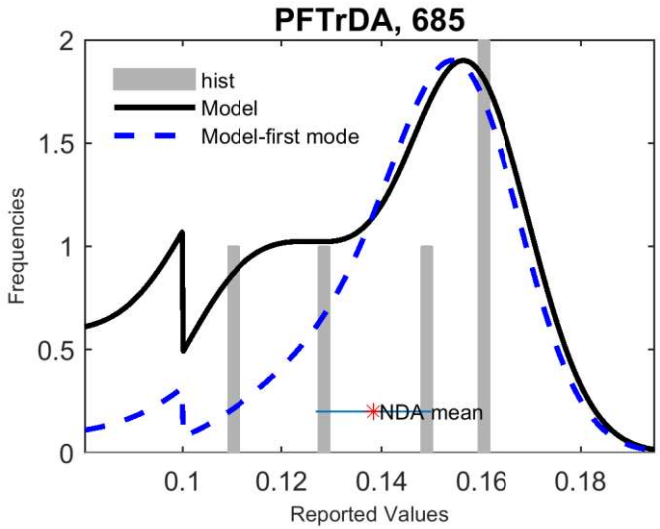


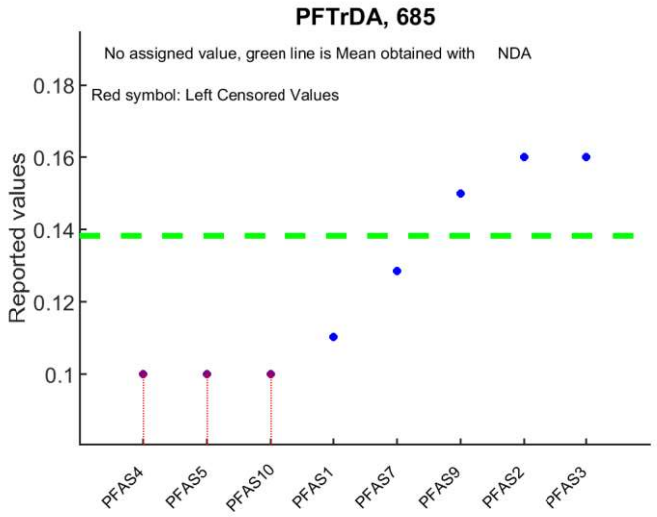




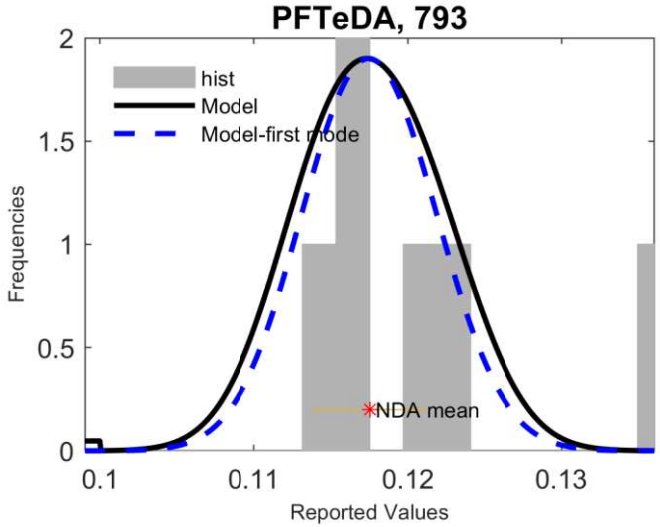


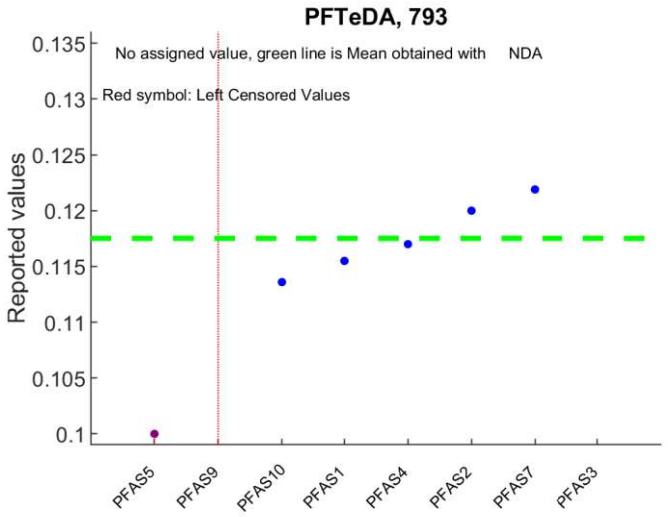
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

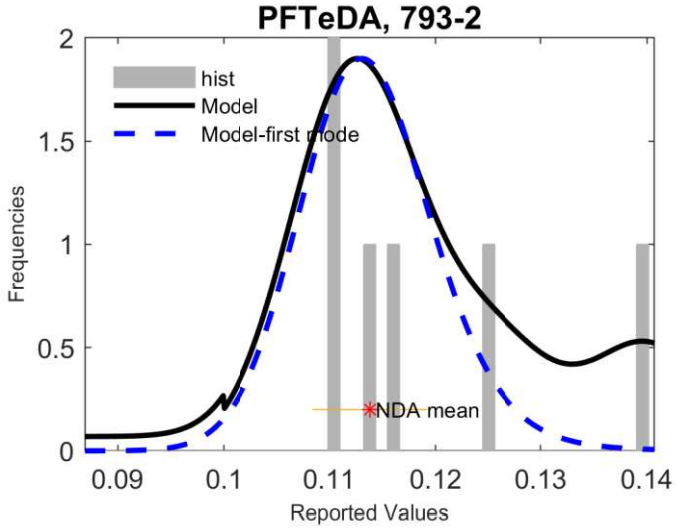


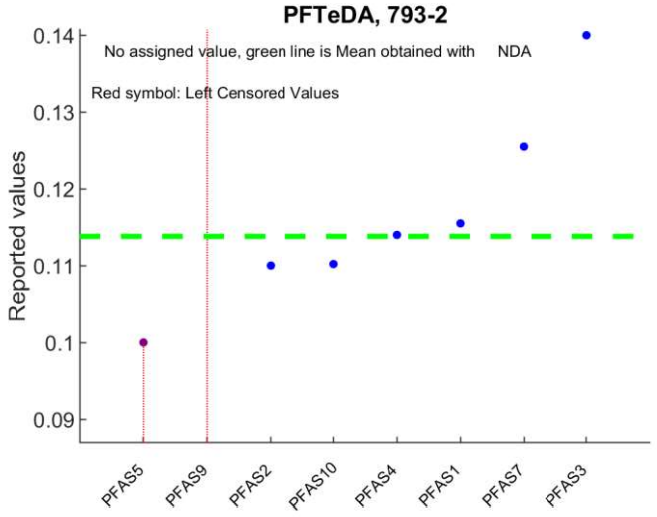


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

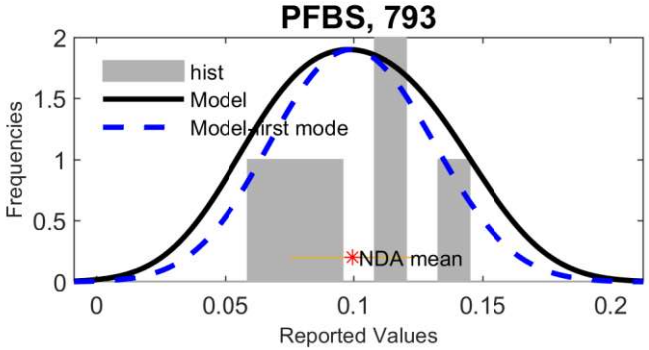


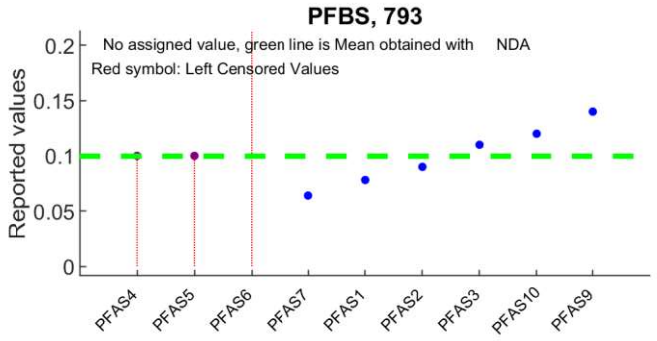


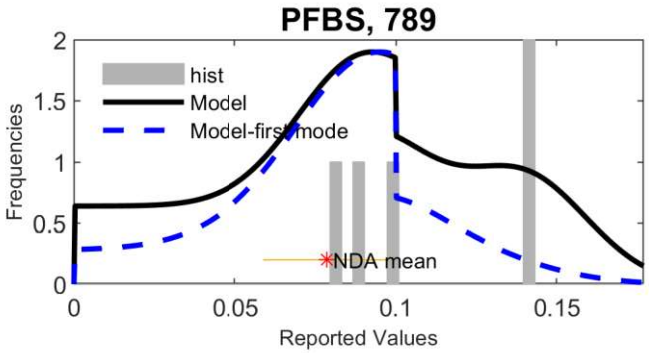


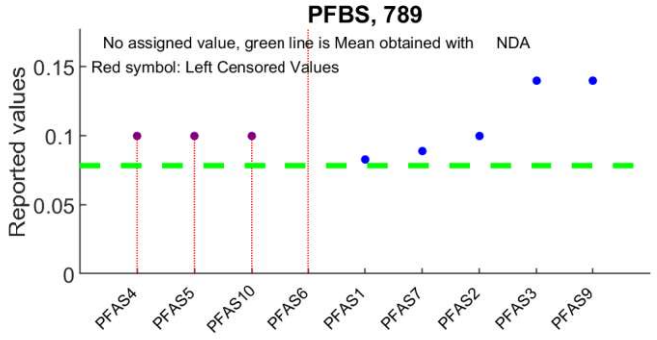


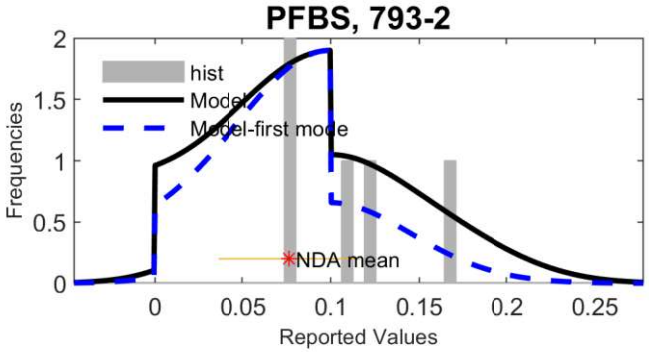
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

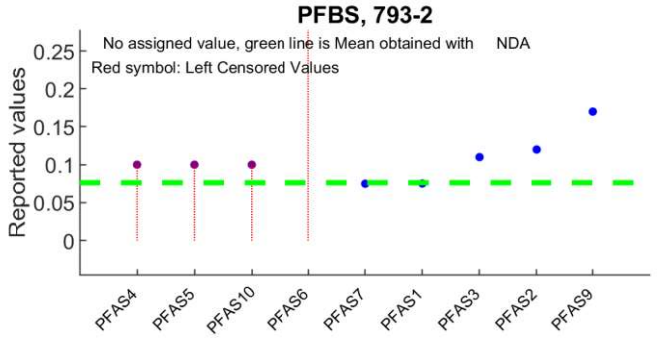




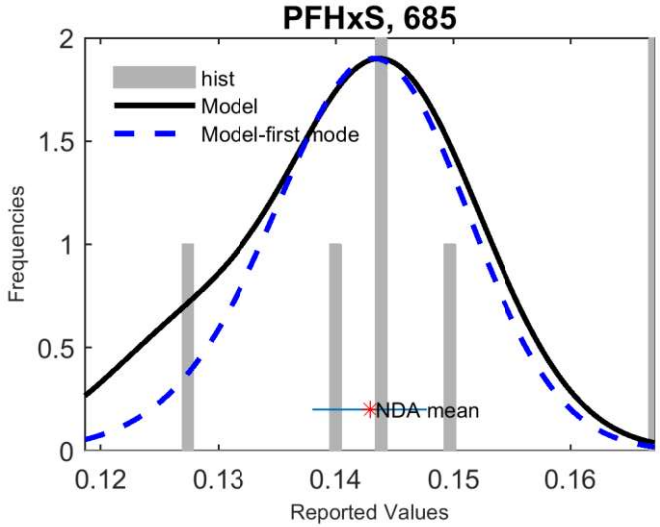


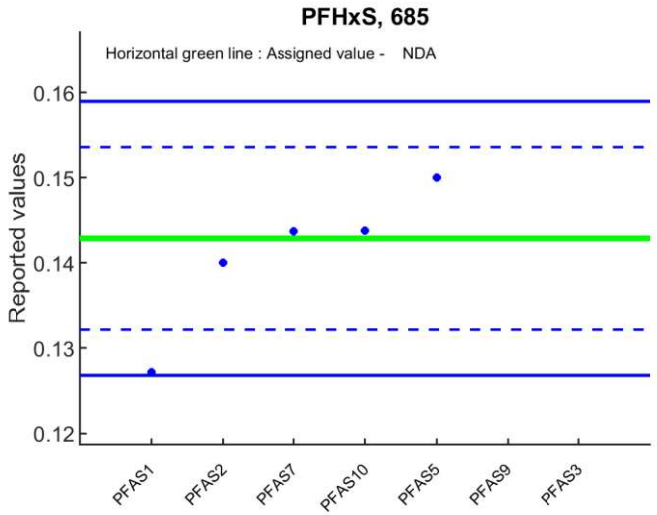




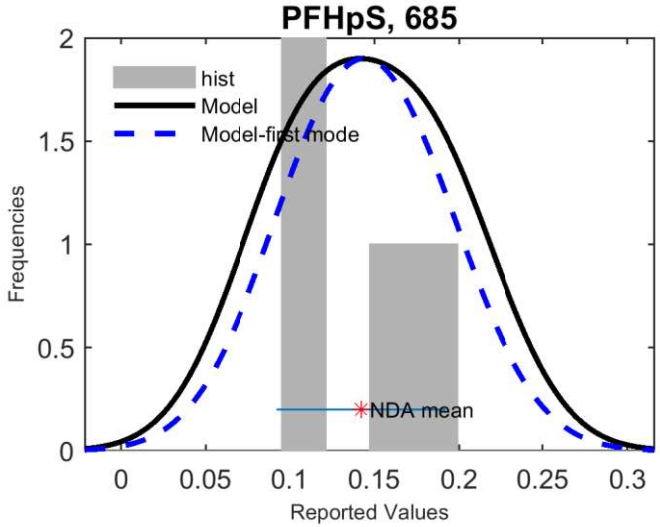


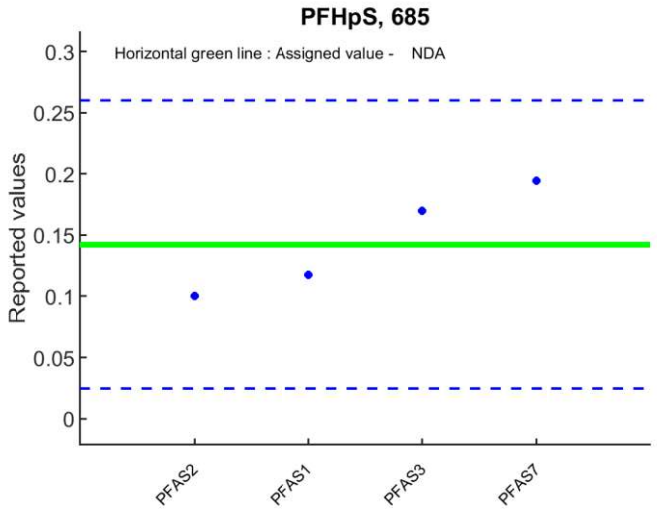
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview



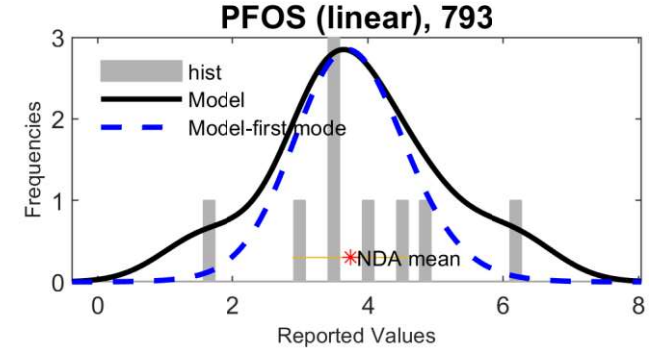


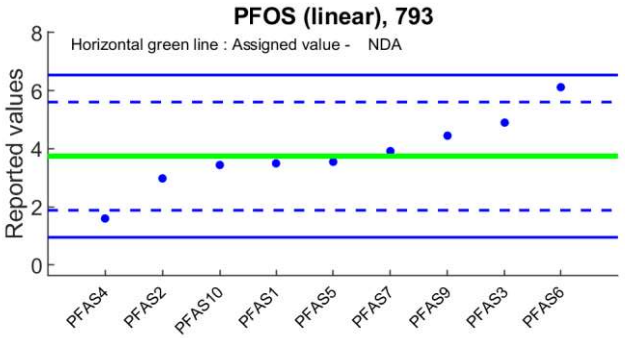
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

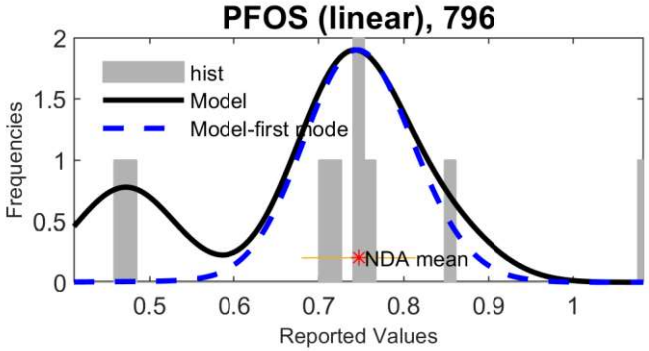


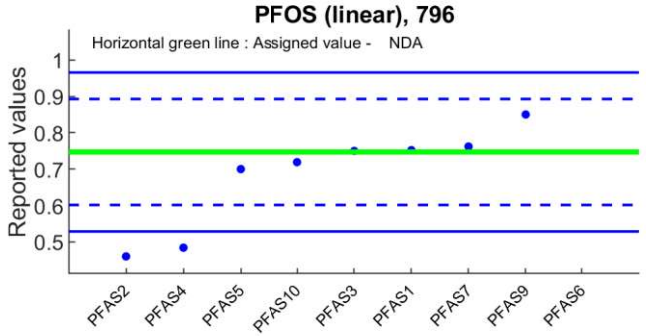


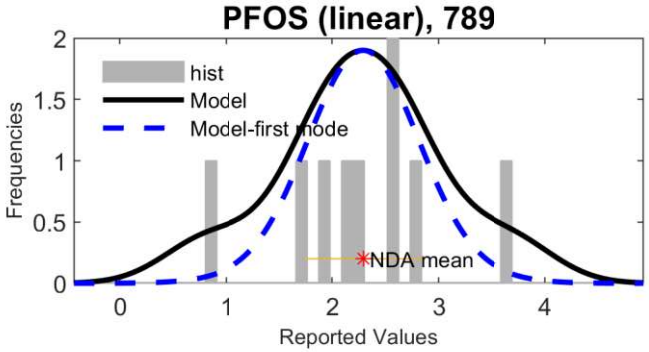
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

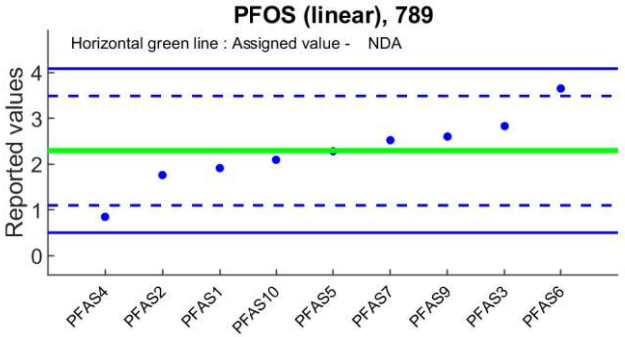




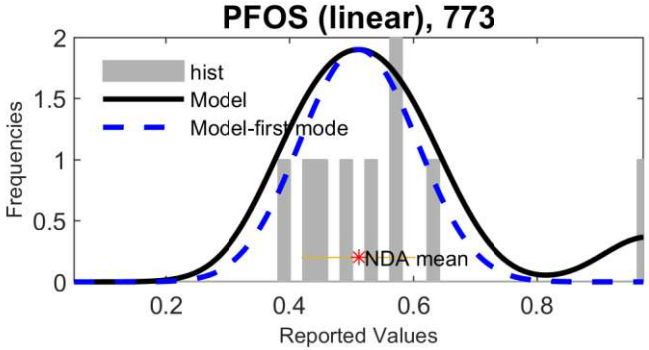


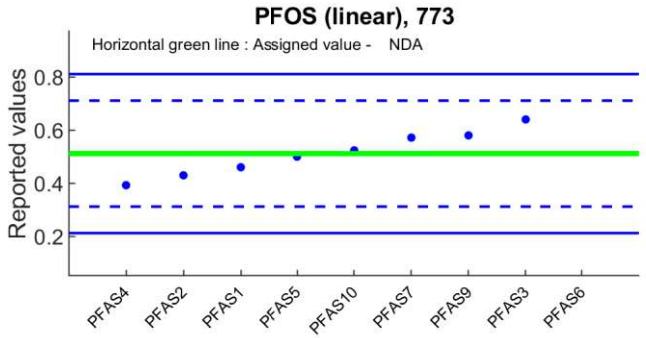


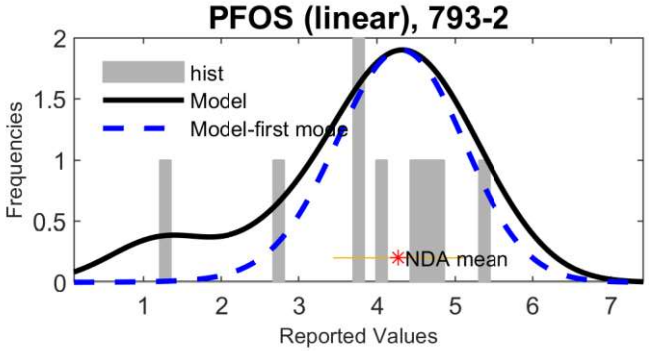


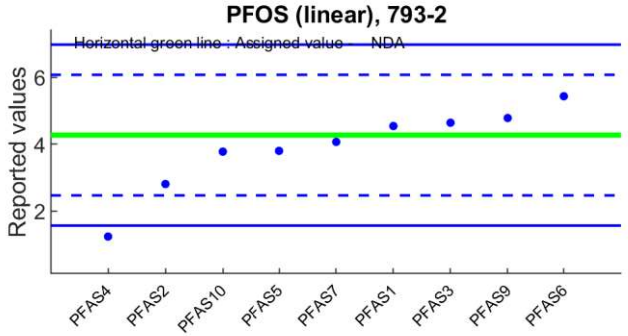


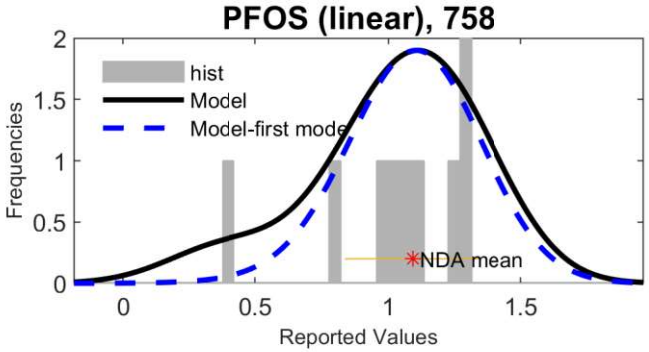
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

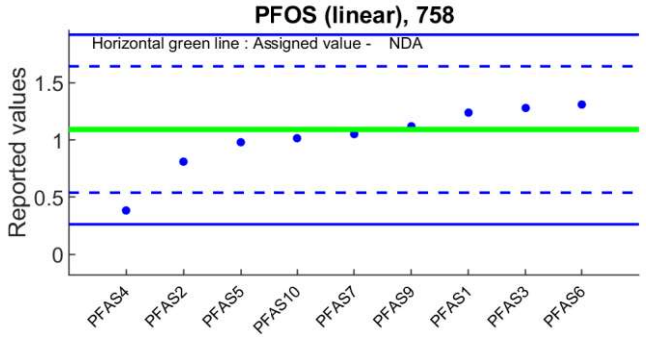




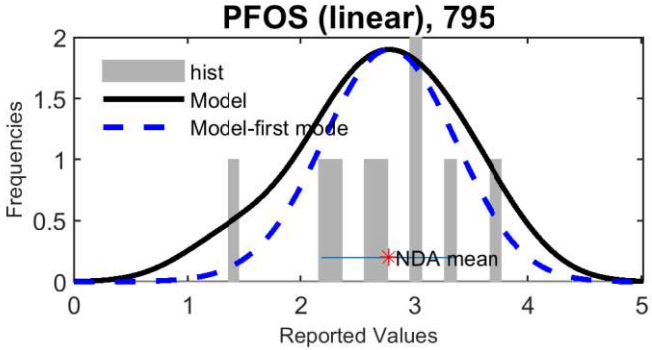


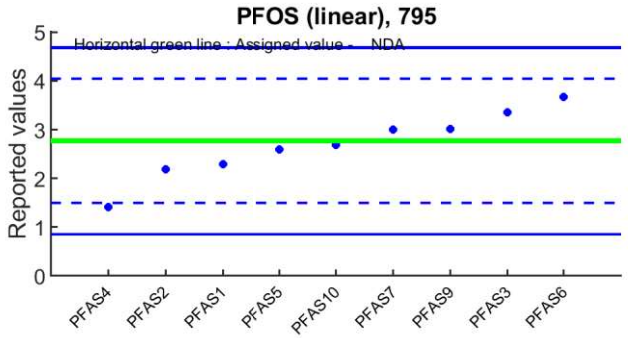


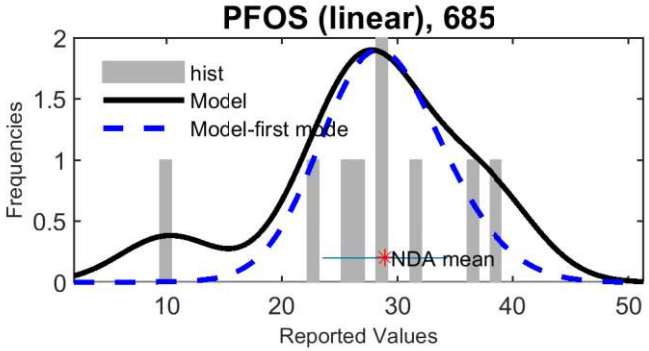


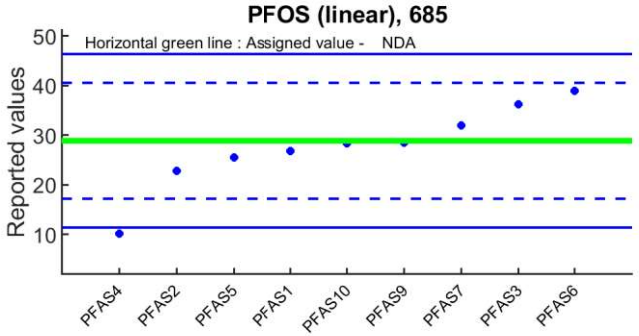


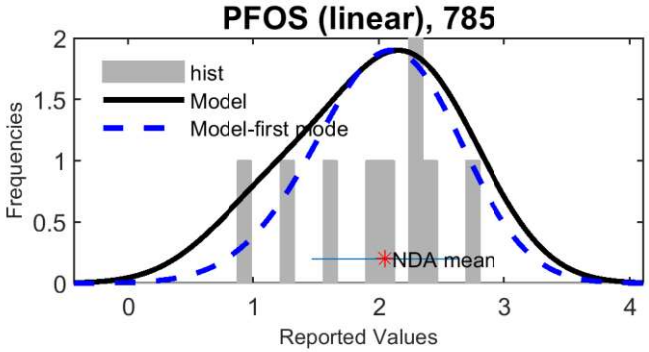
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

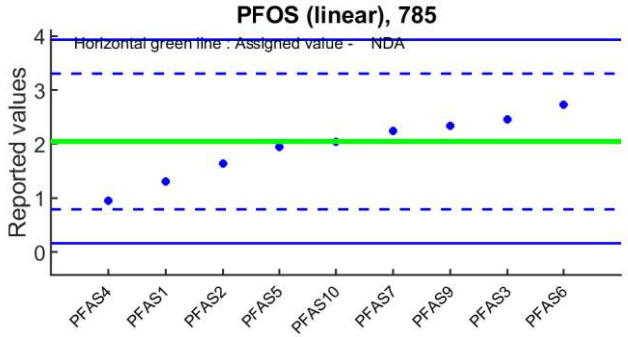




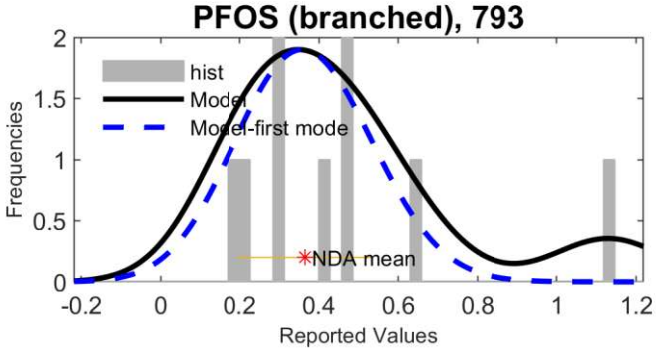


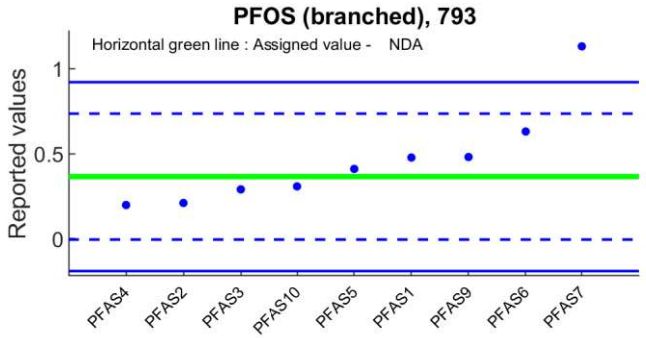


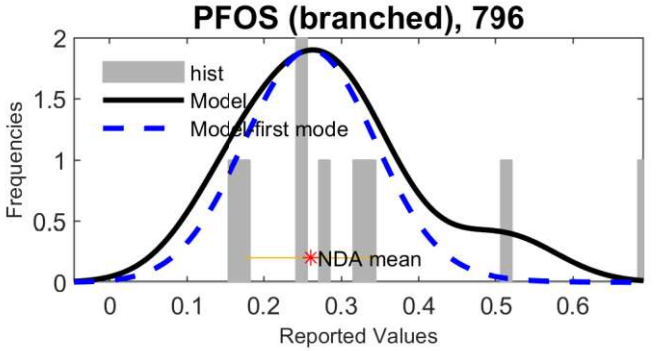


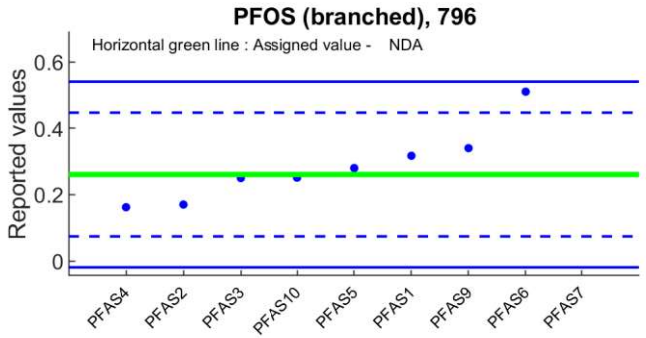


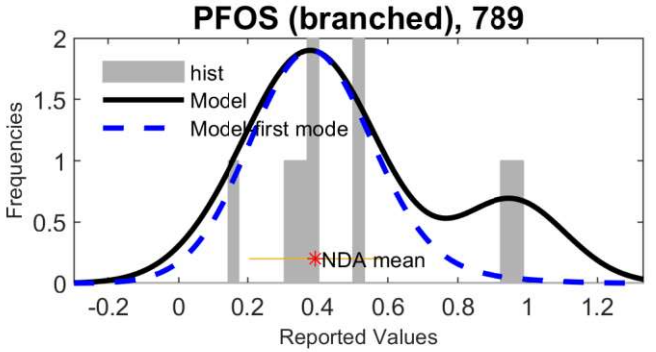
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

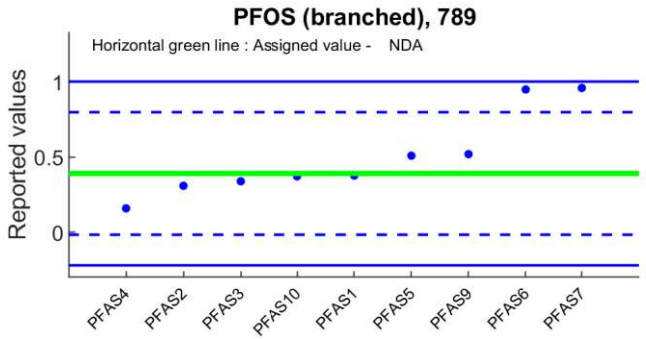




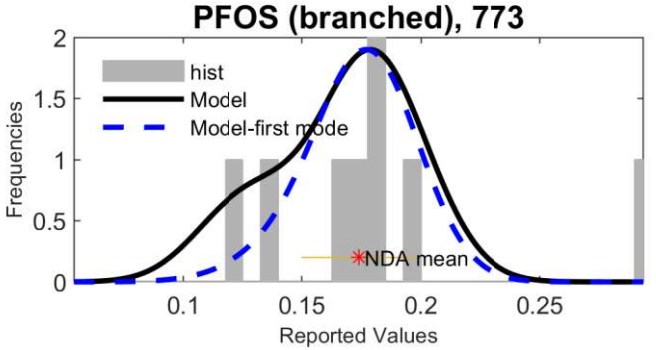


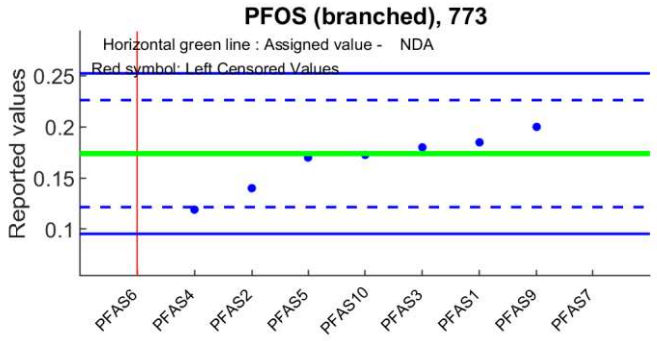


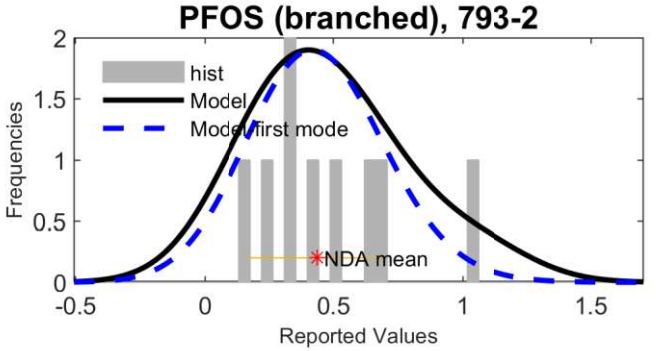


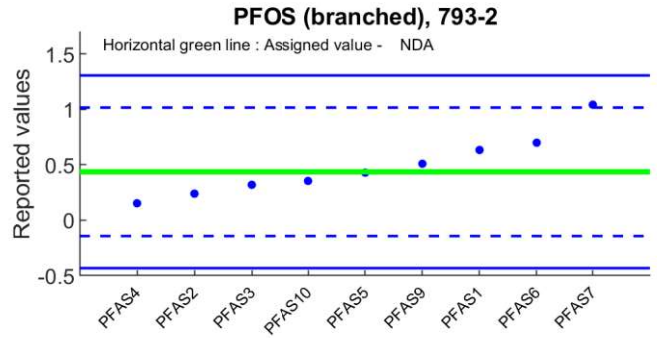


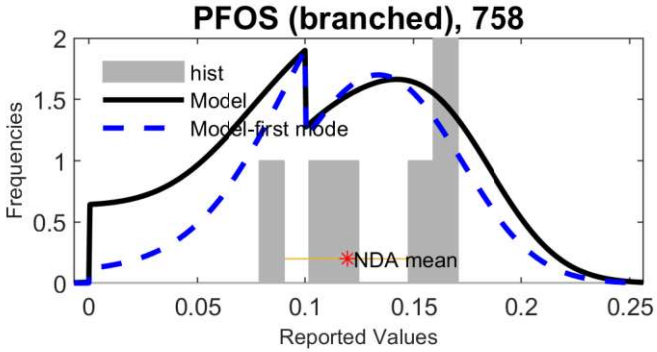
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

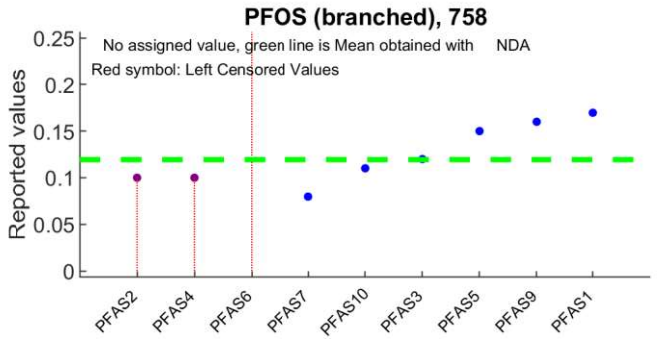




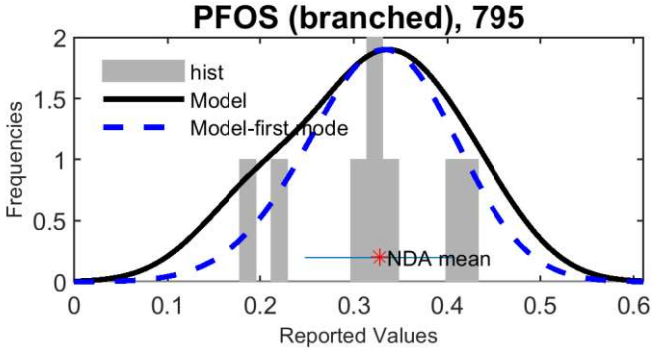


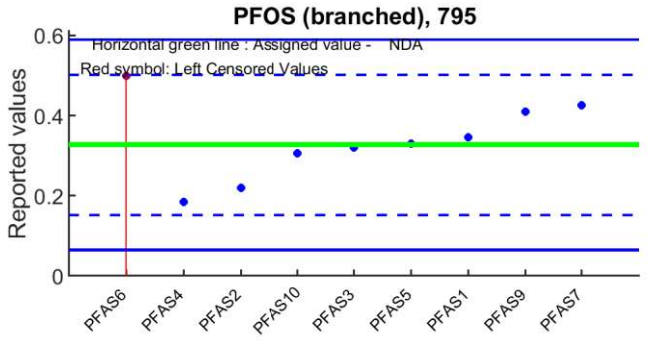


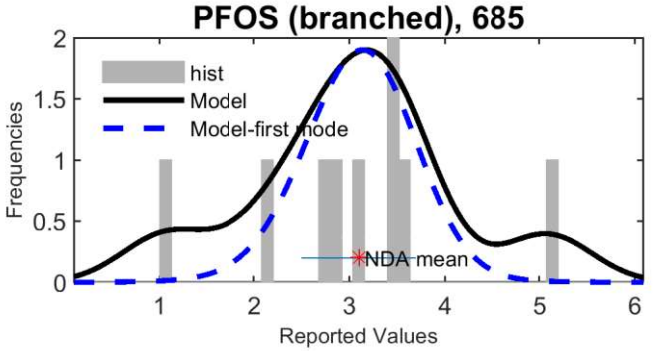


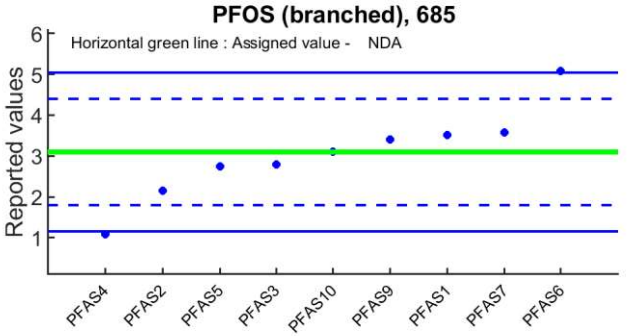


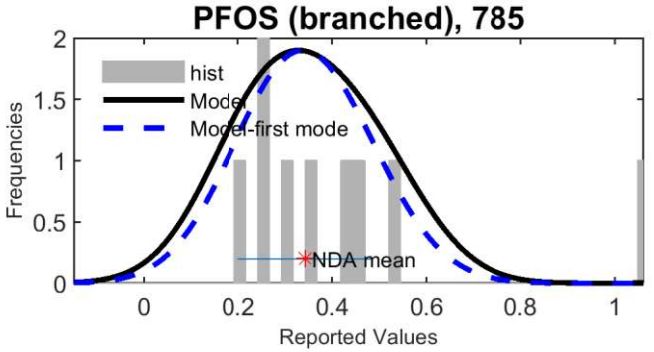
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

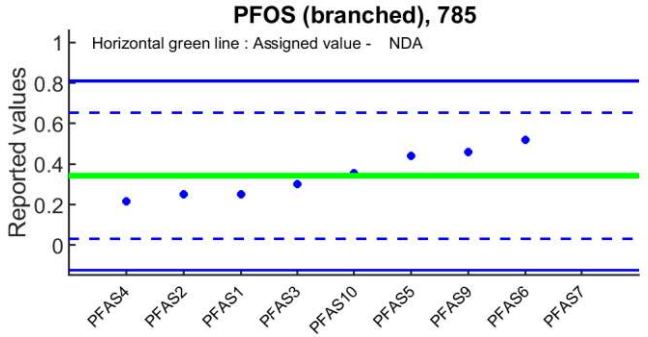




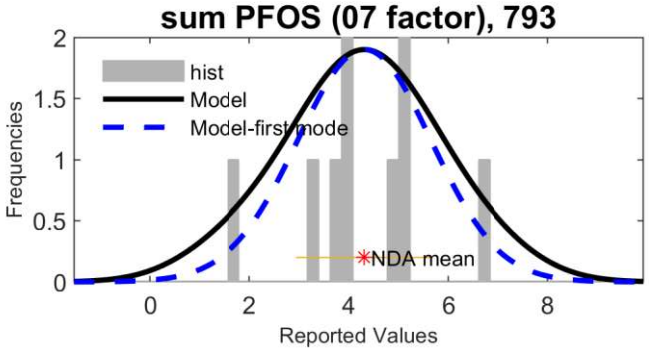


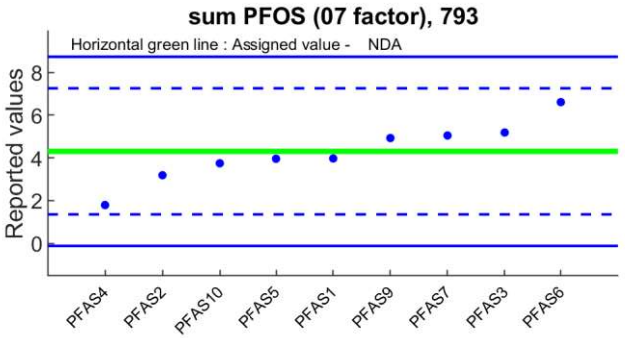


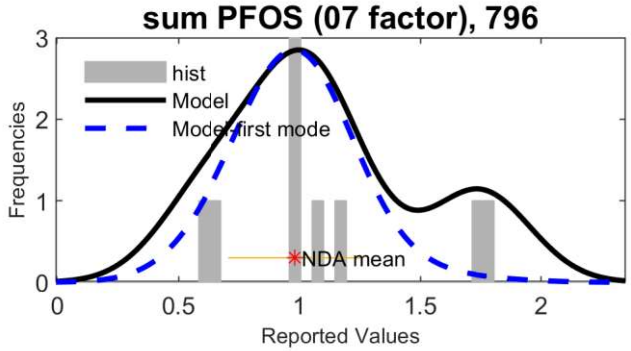


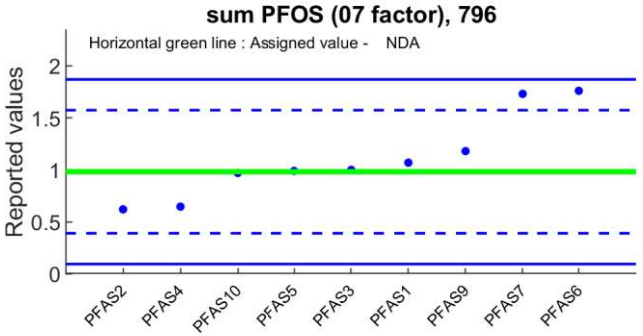


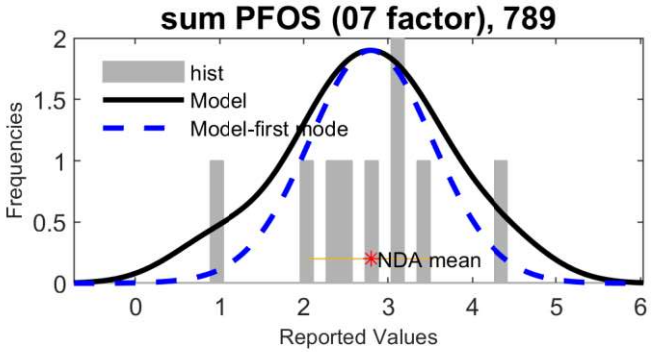
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

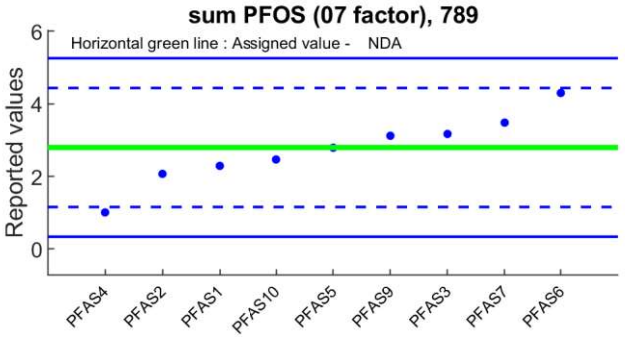




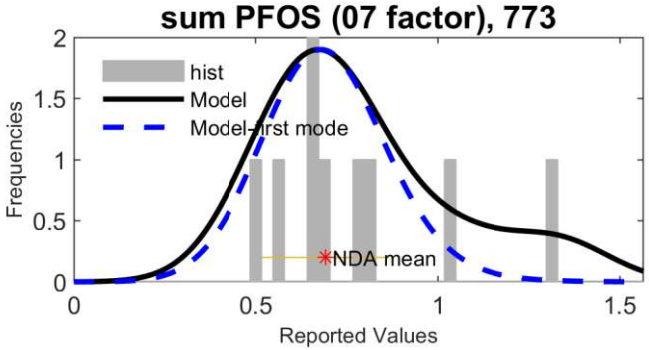


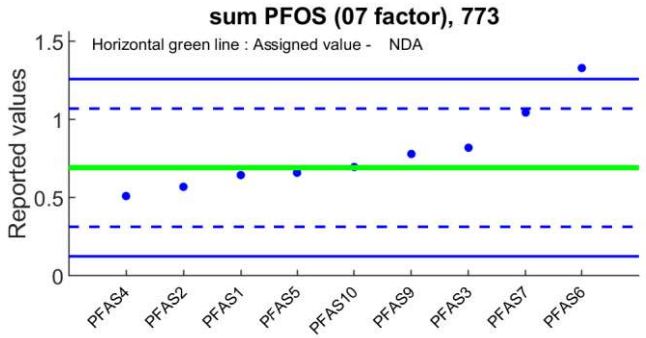


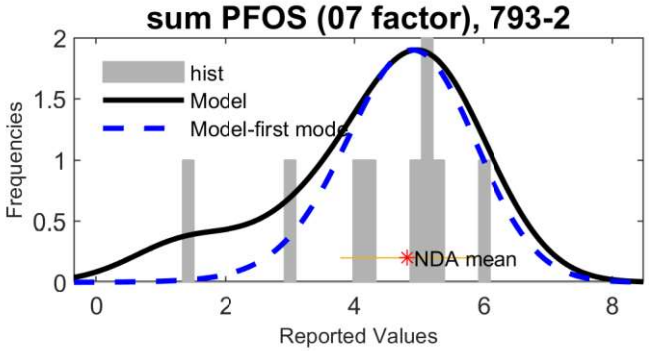


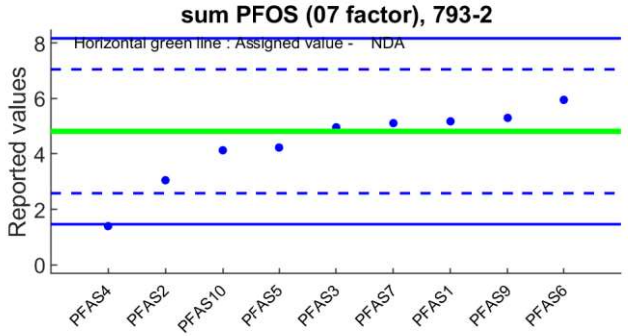


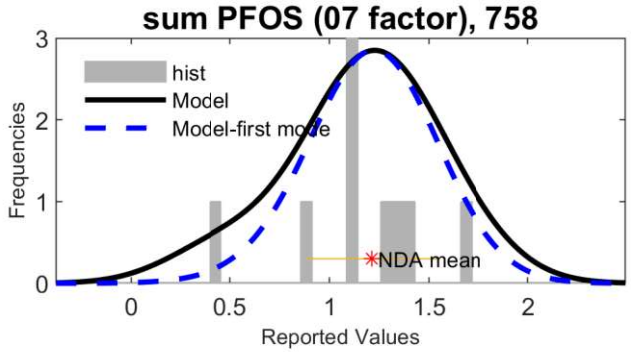
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

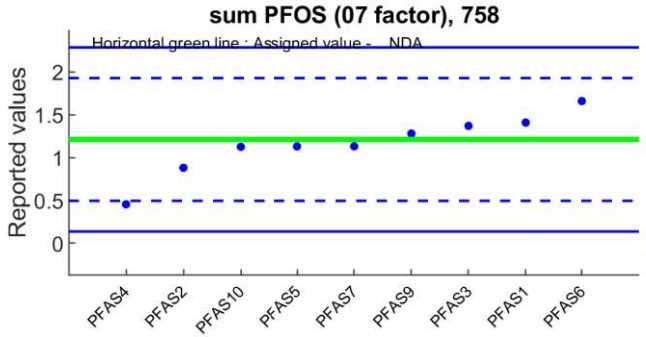




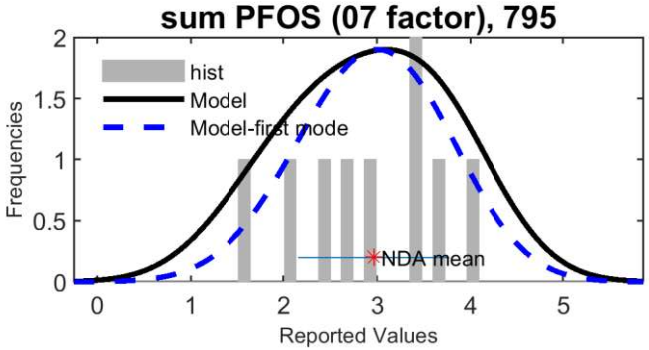


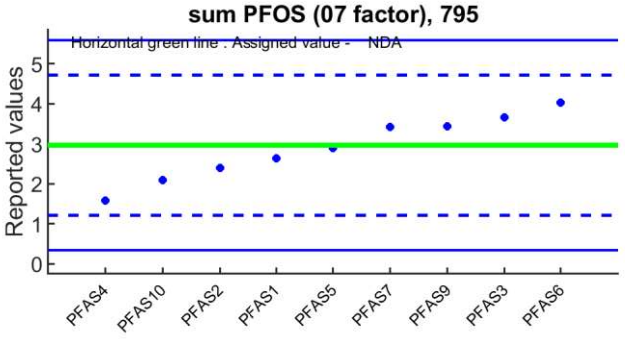


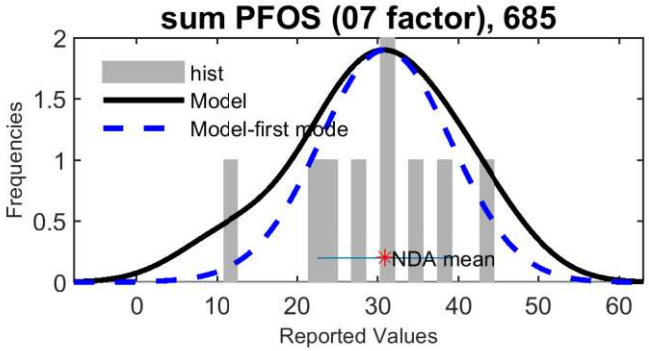


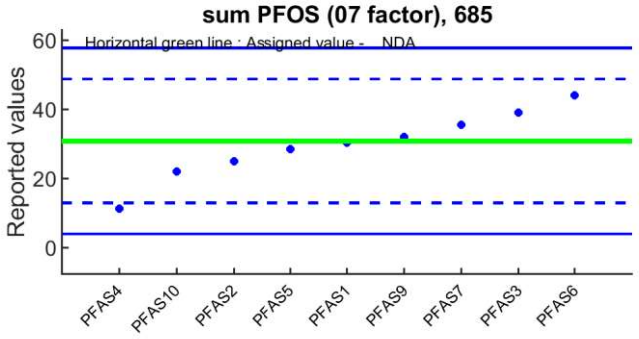


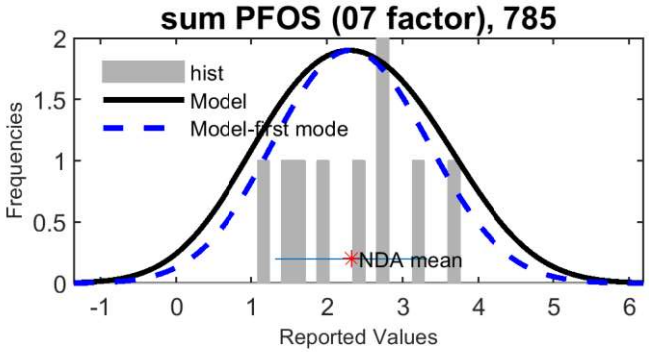
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

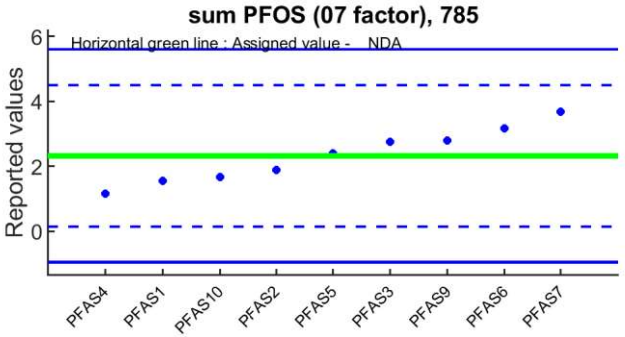




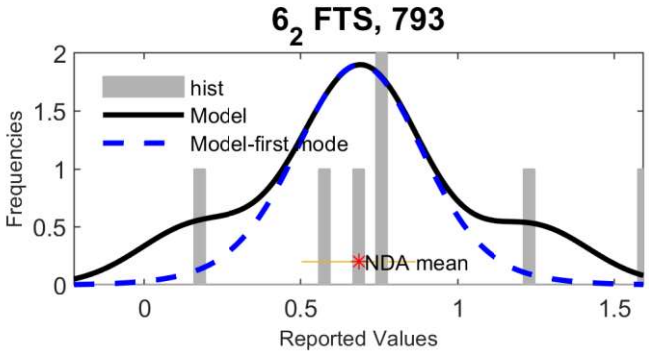


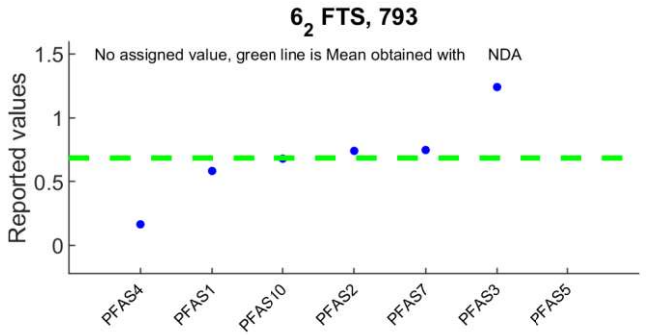


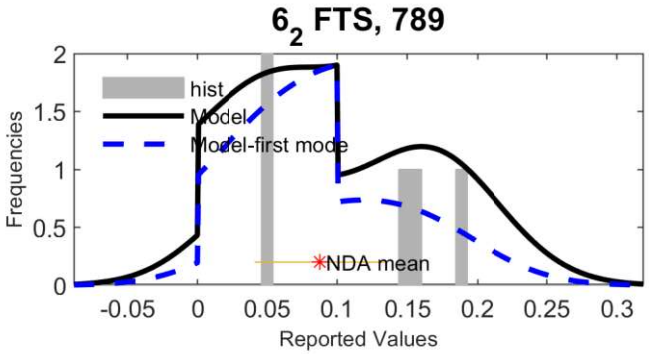


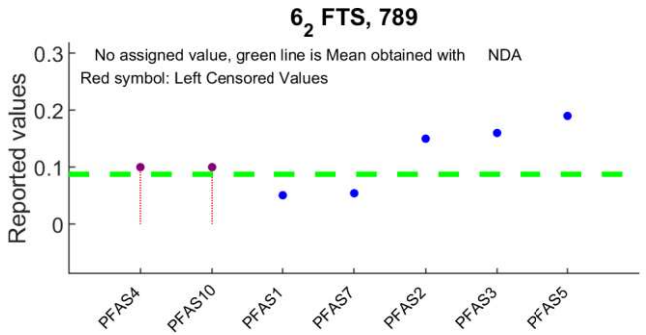


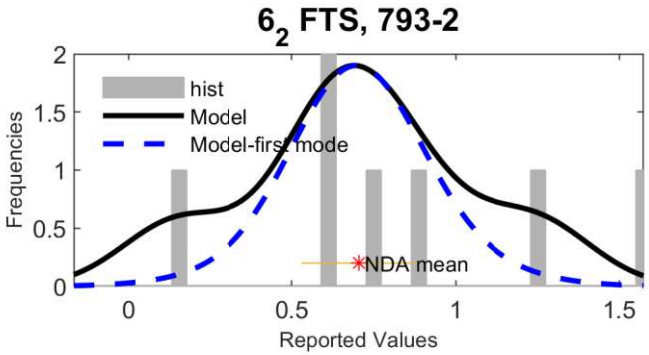
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

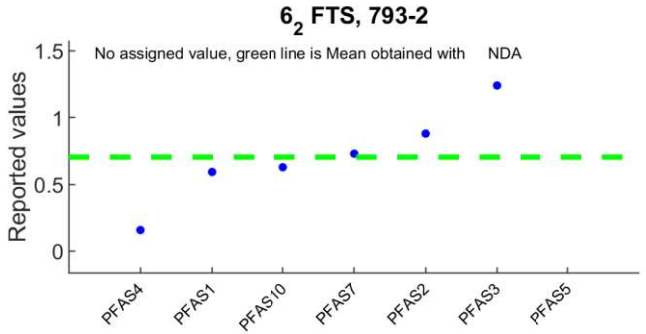




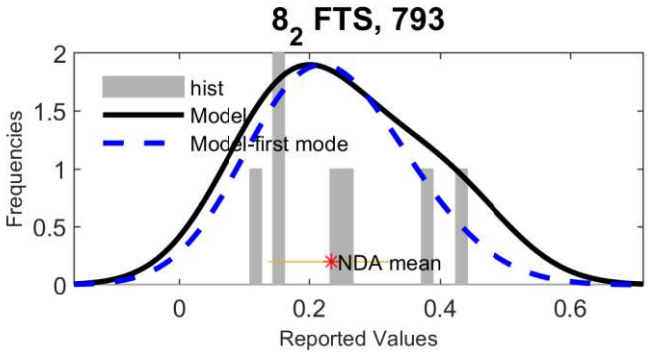


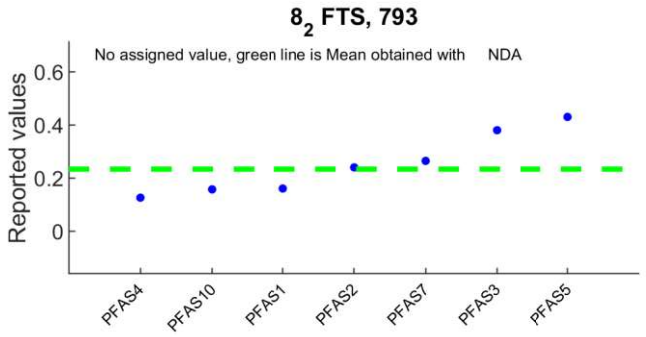


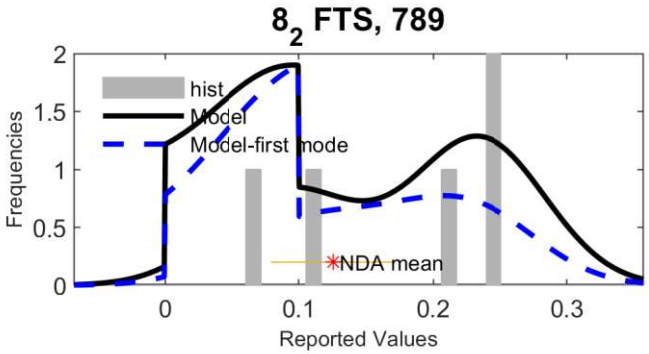


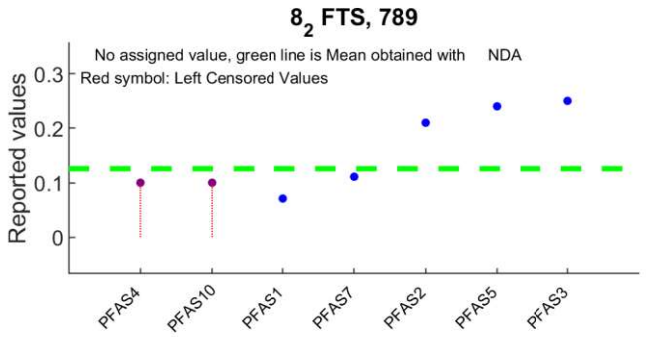


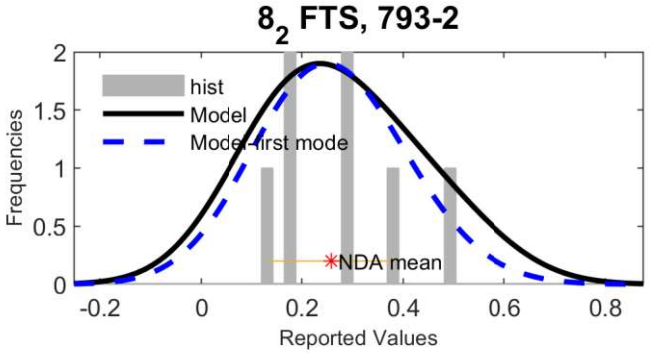
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

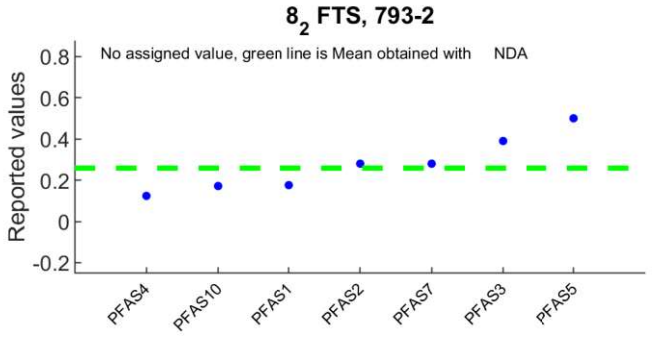




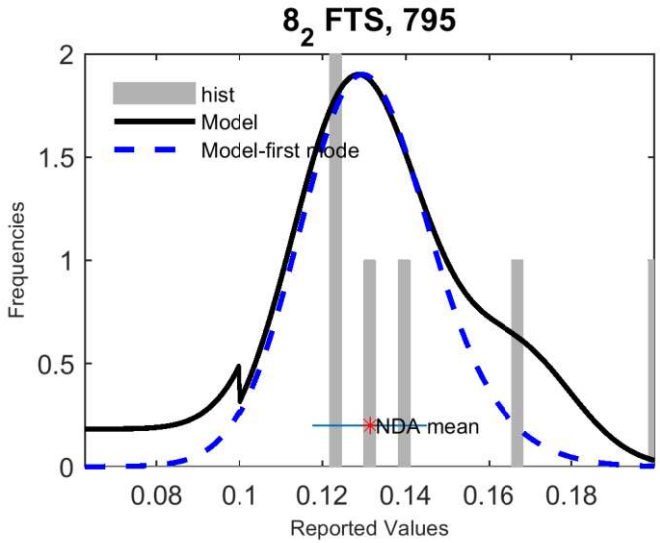


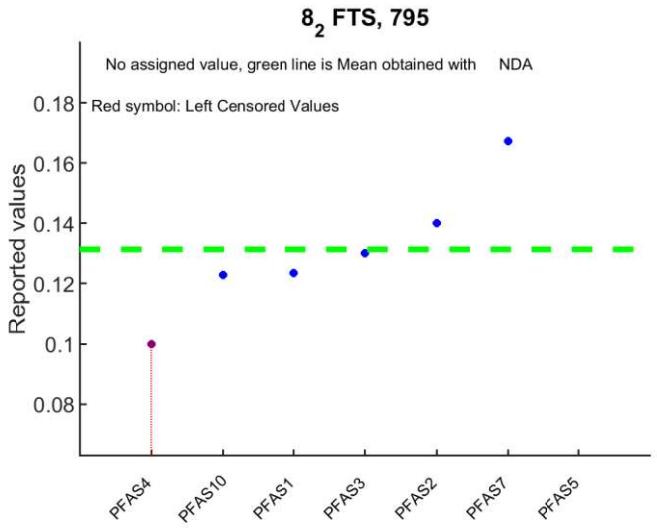




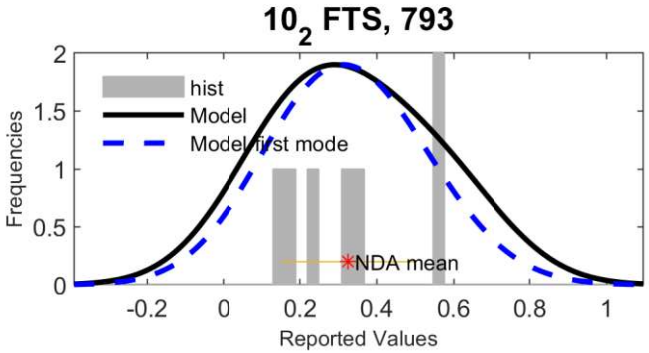


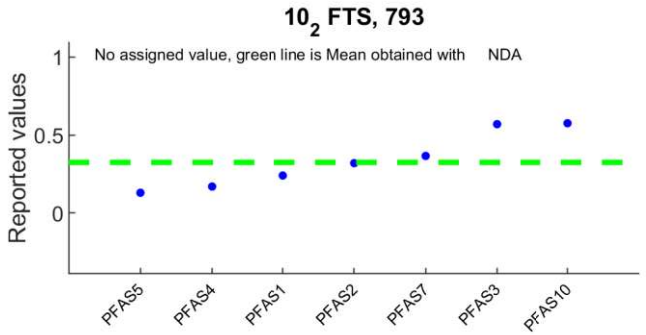
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

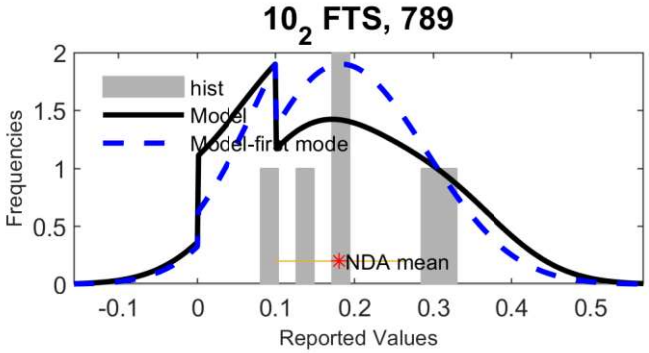


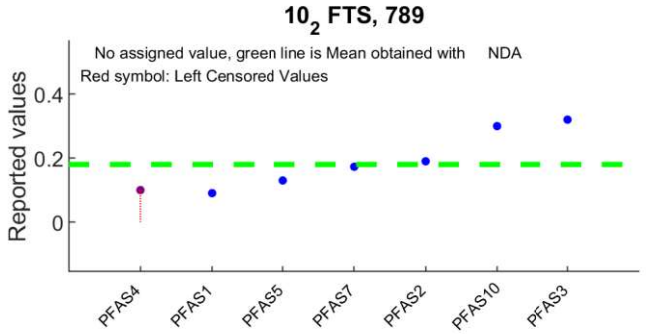


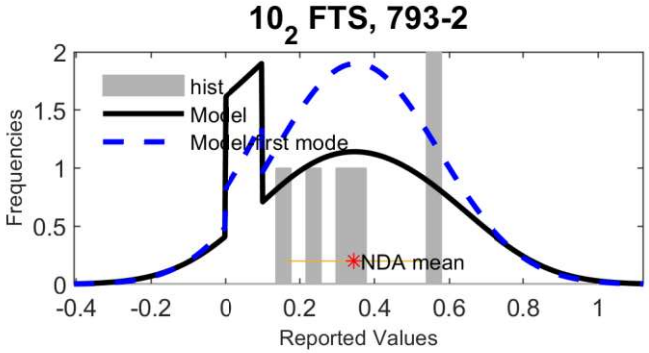
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

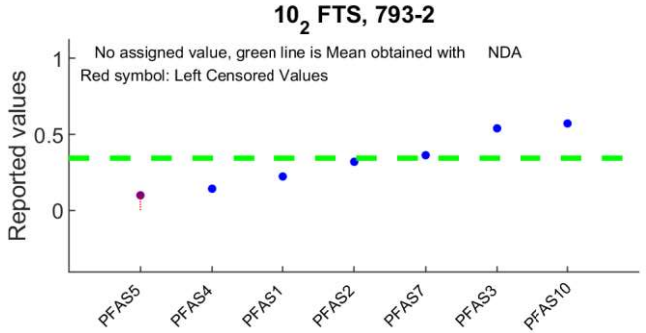




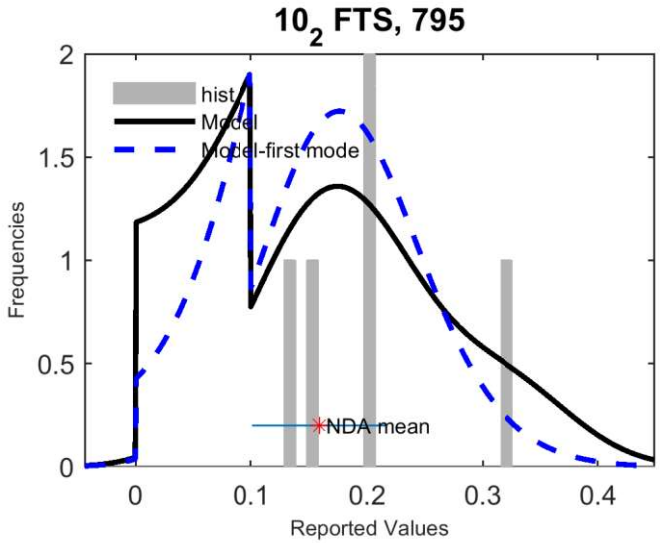


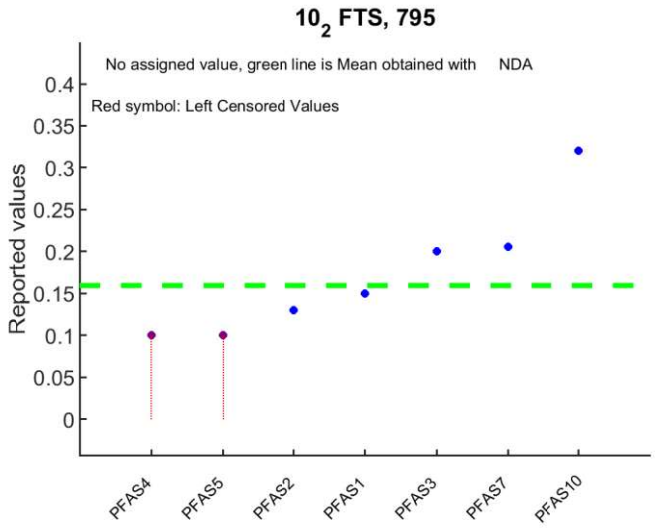




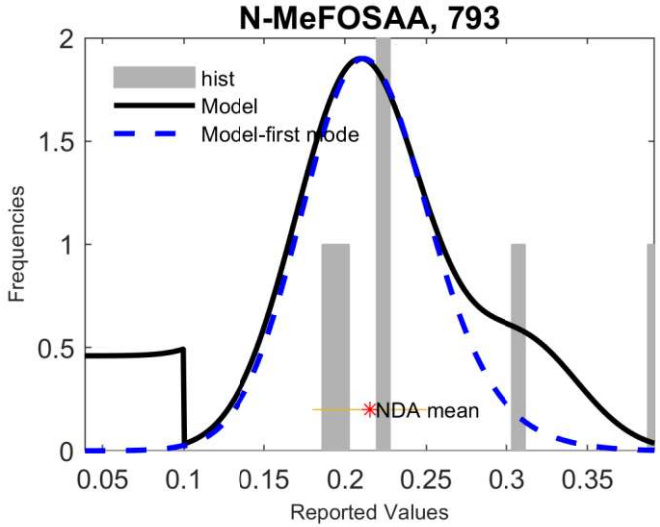


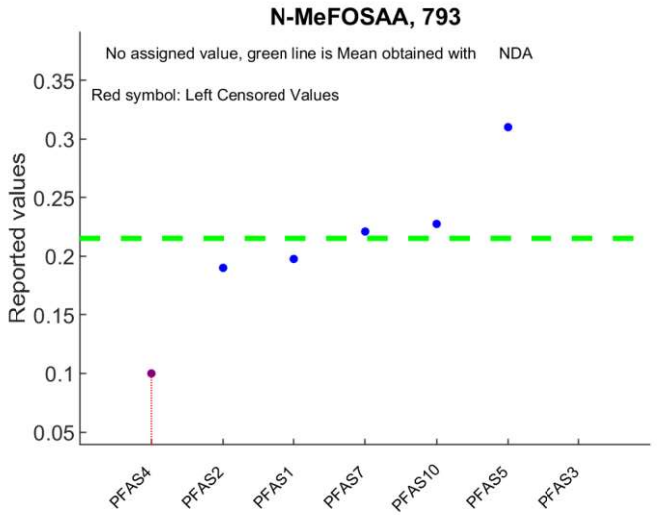
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

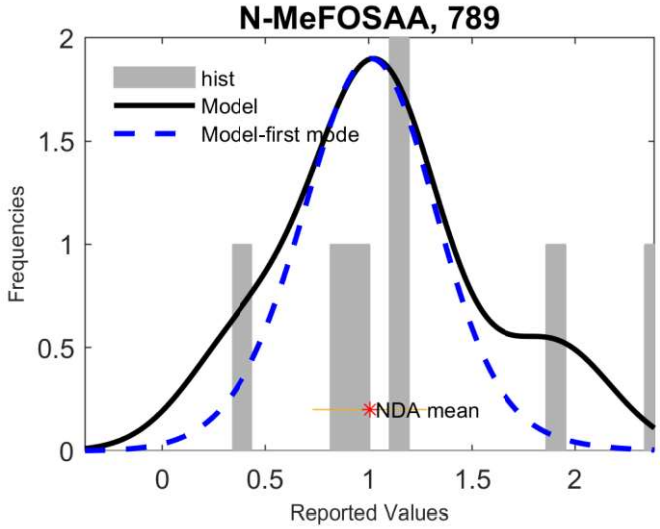


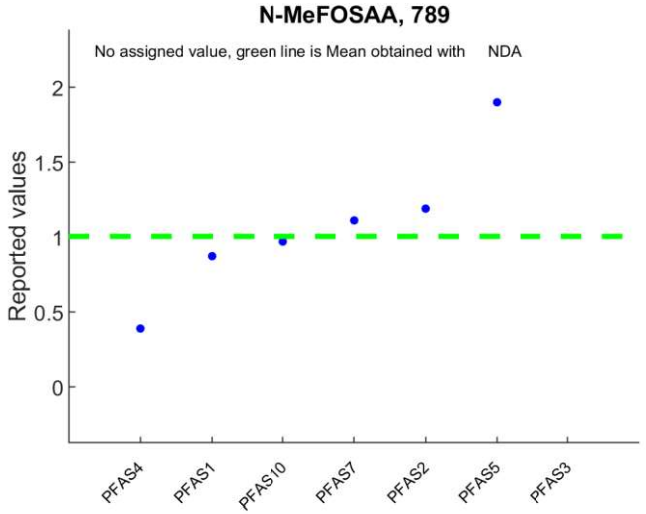


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

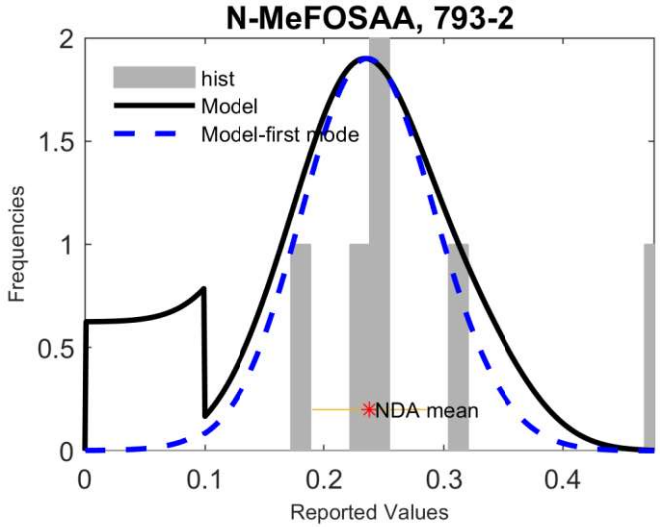


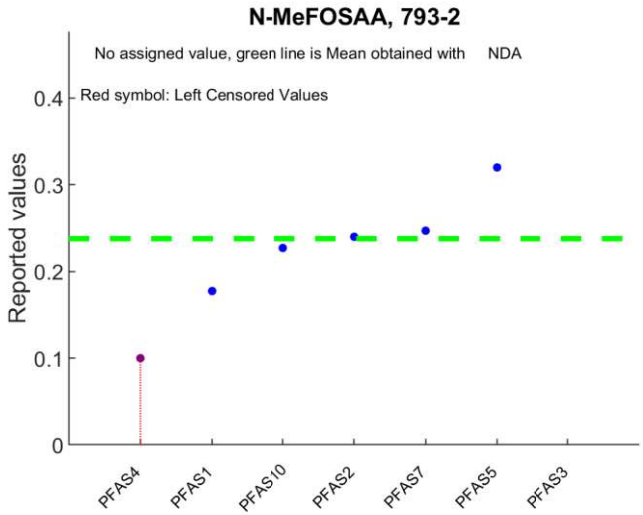


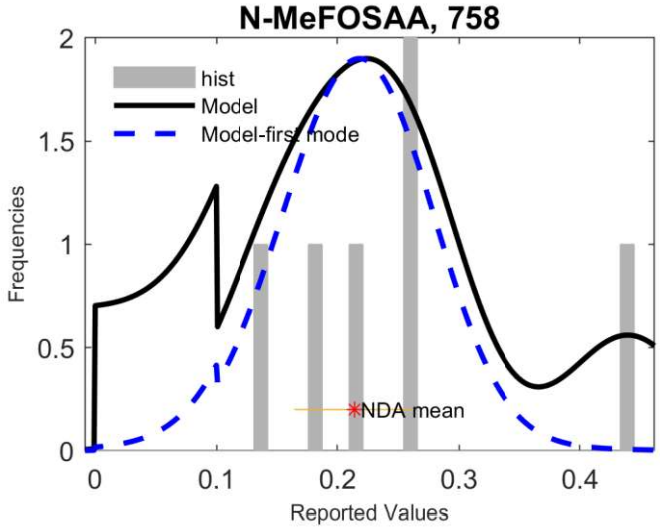


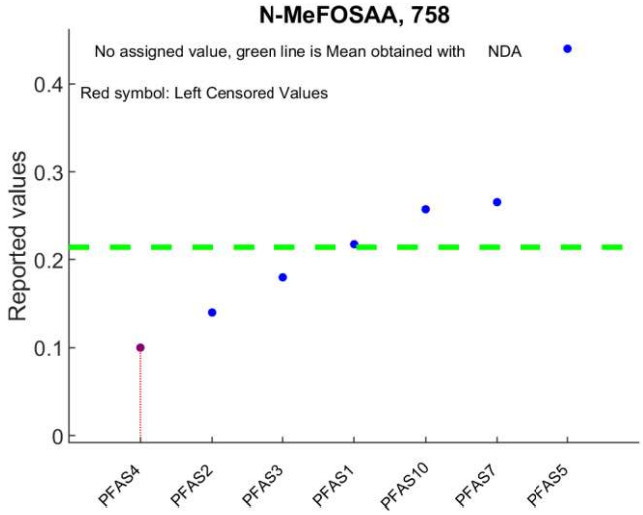


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

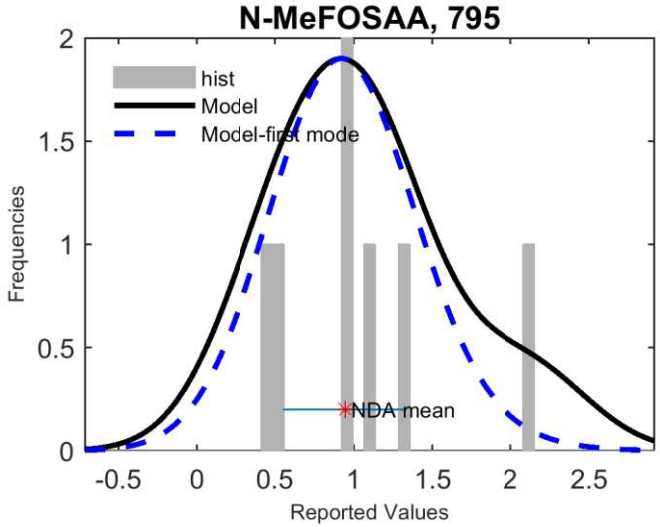


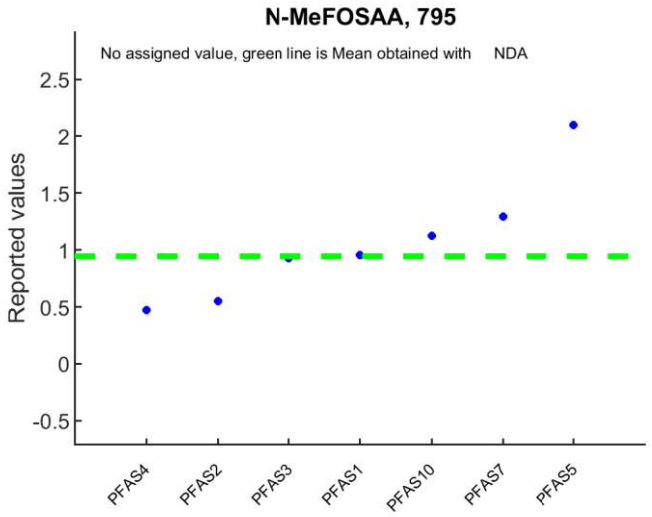


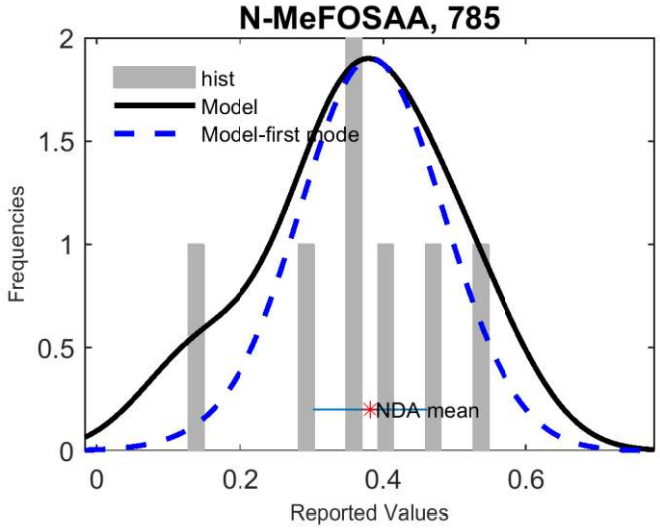


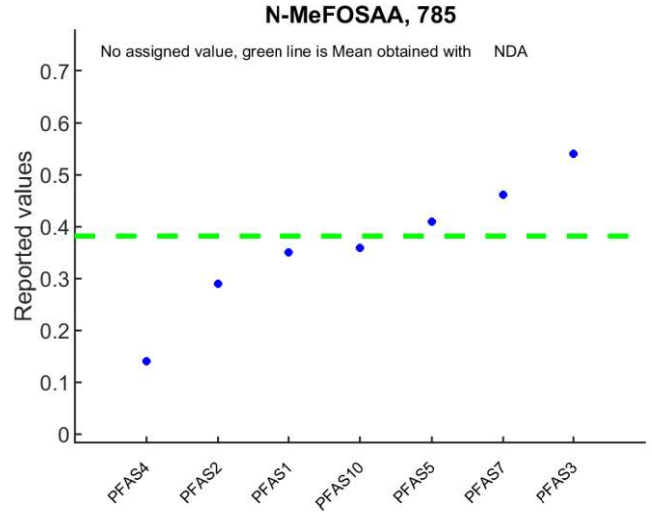


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

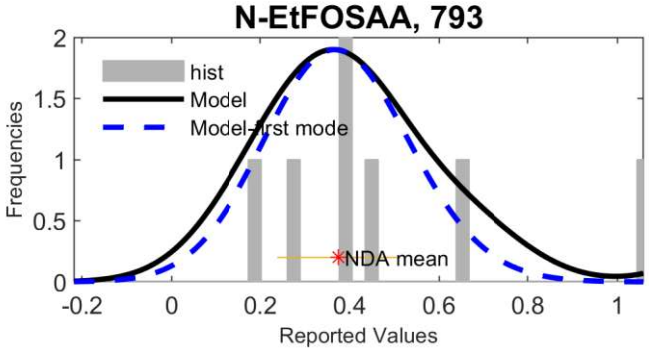


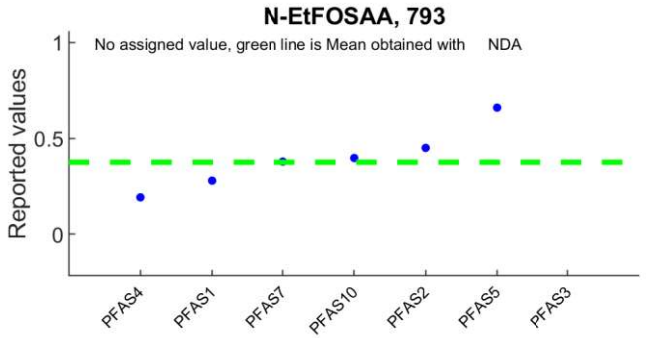


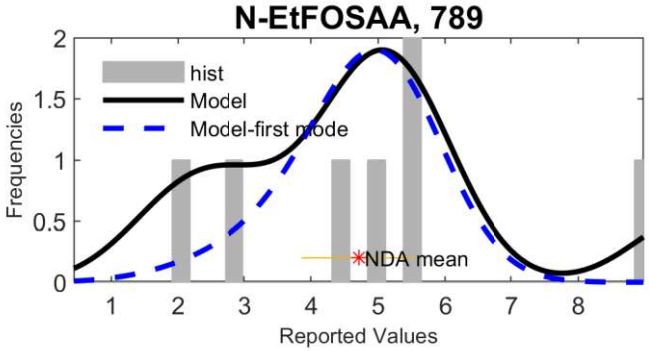


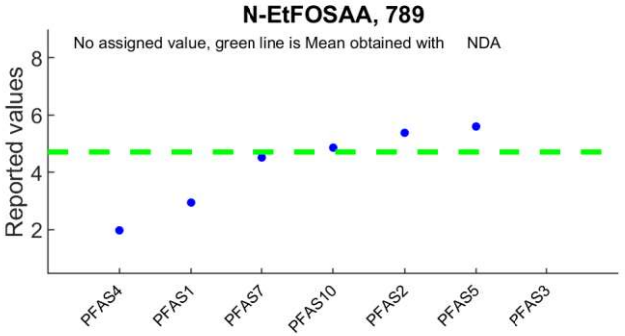


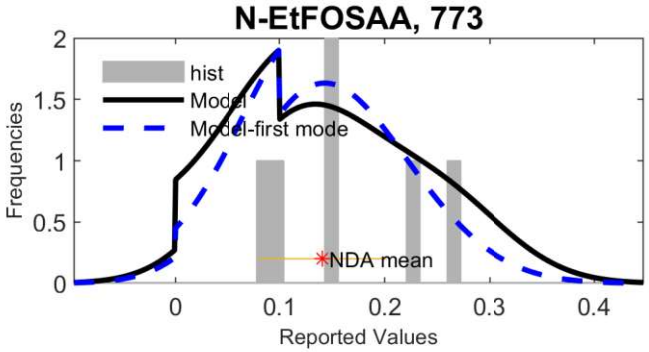
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

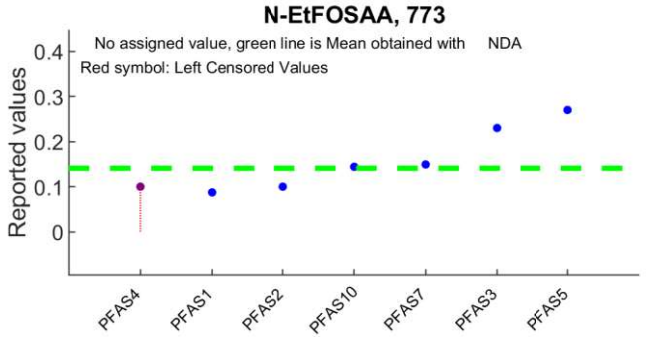




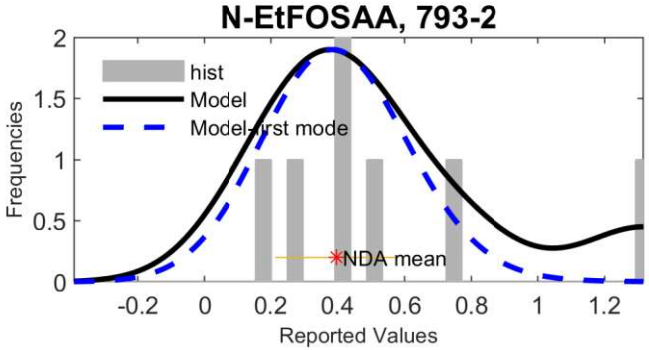


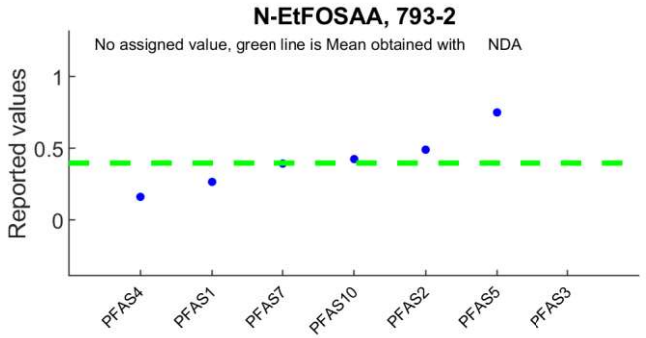


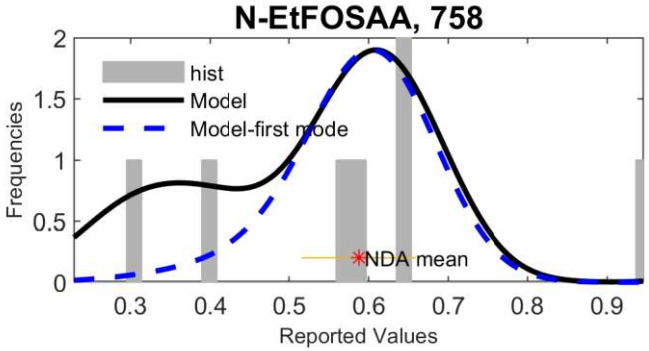


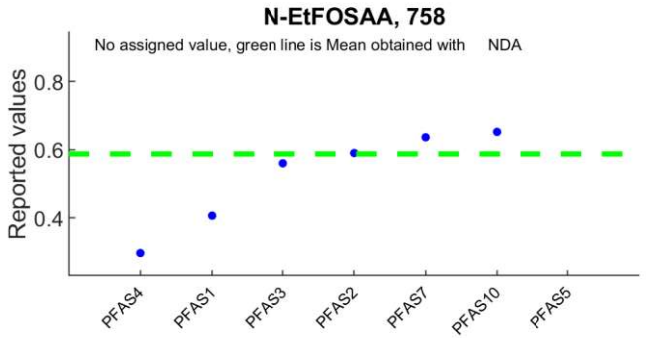


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

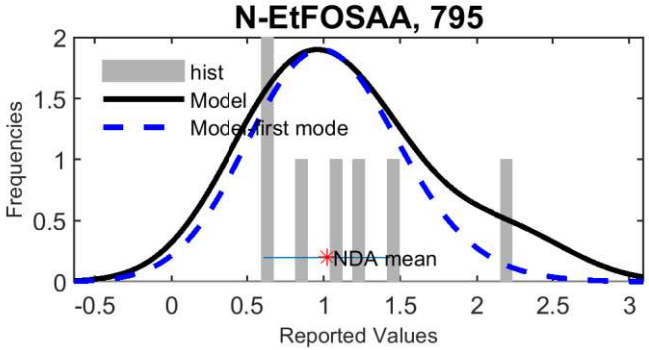


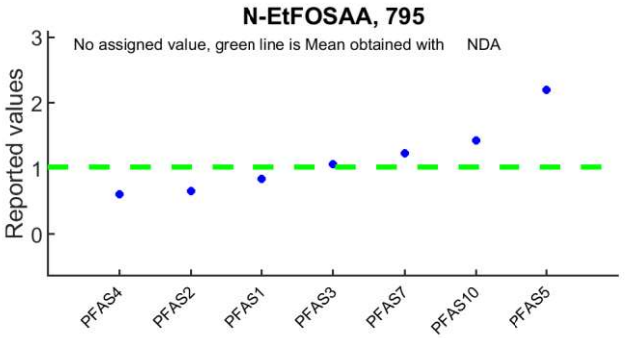


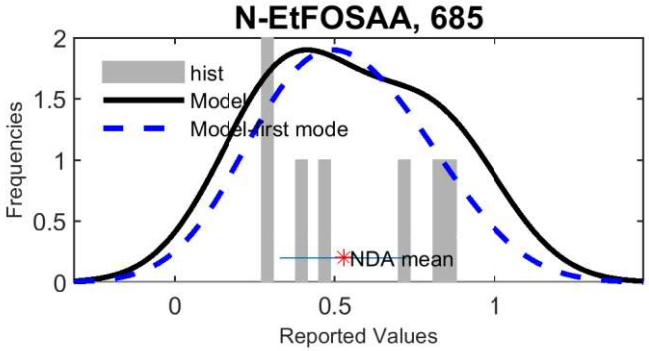


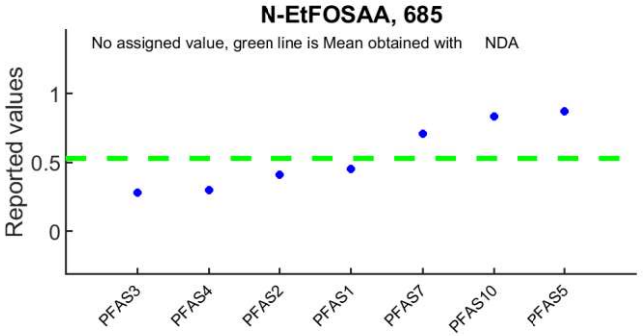


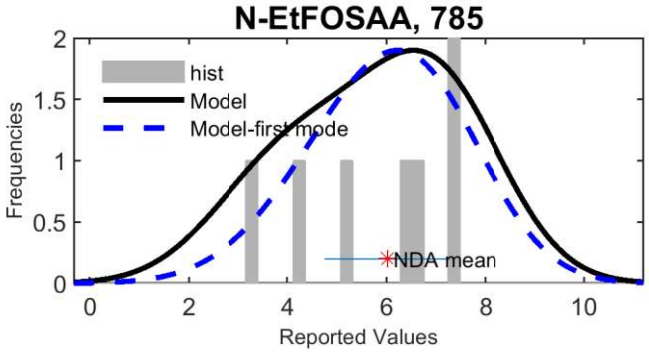
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

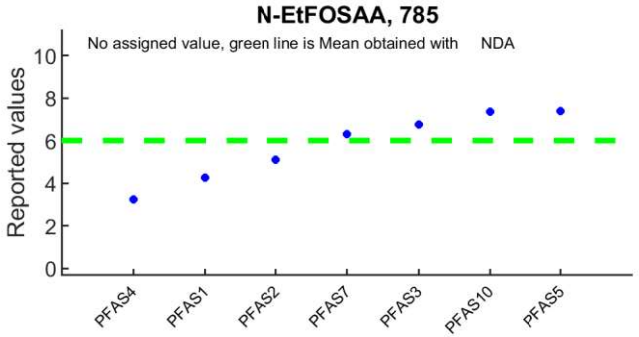




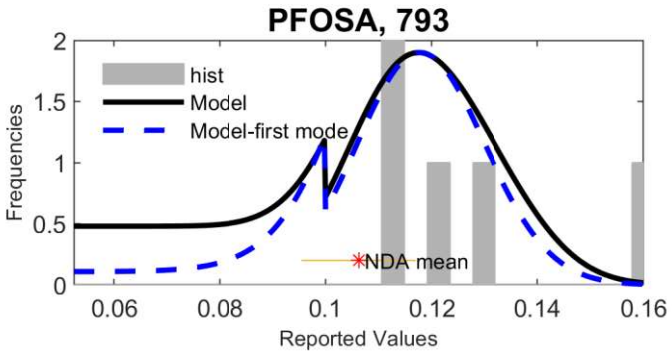


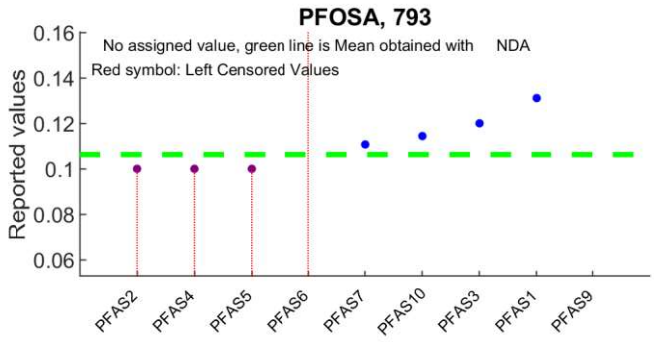


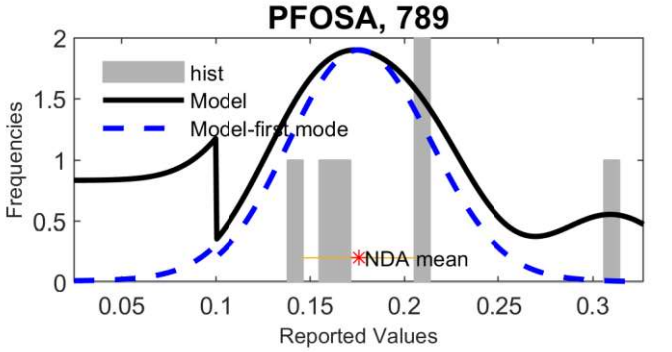


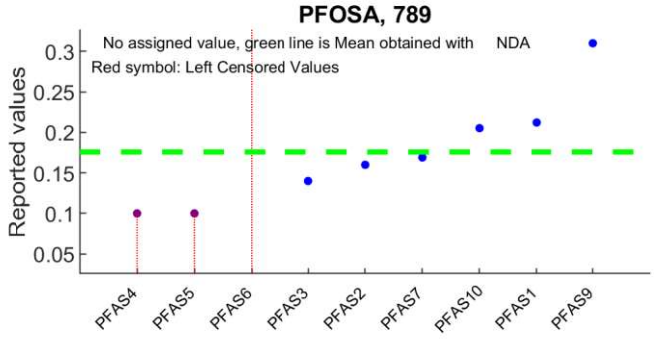


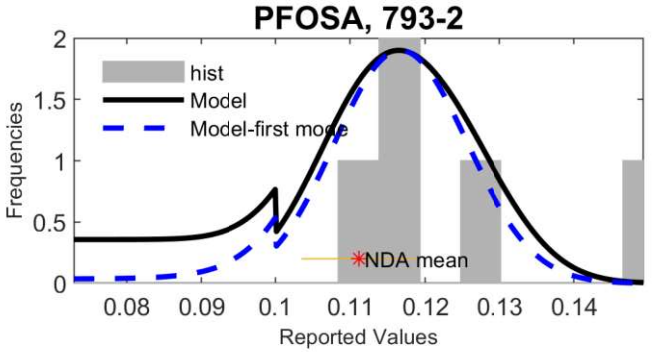
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

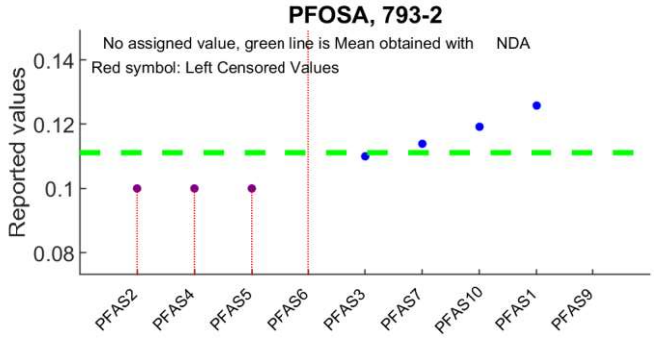




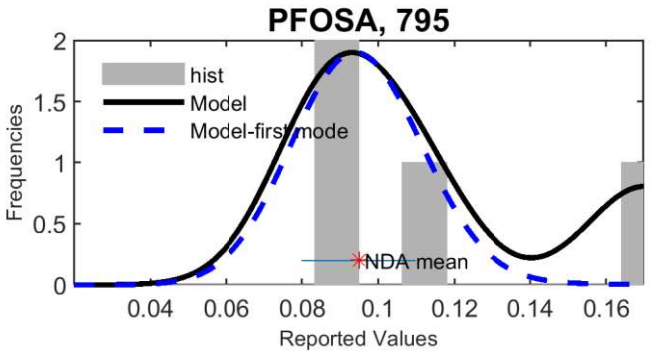


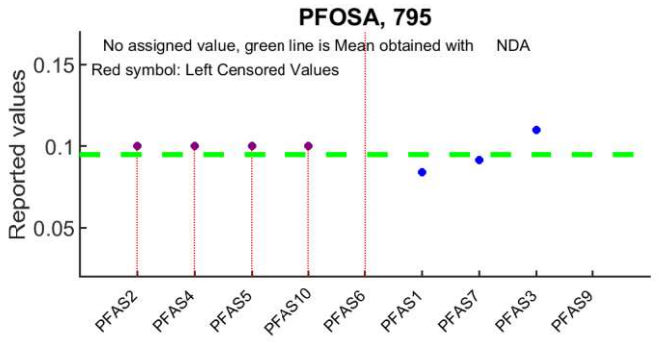


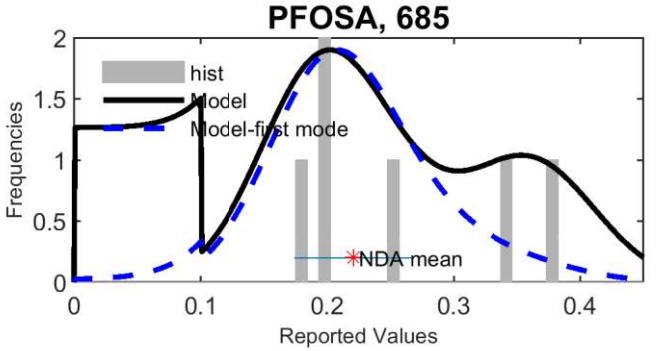


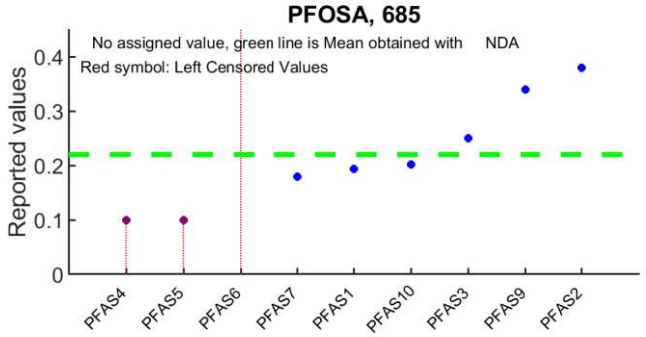


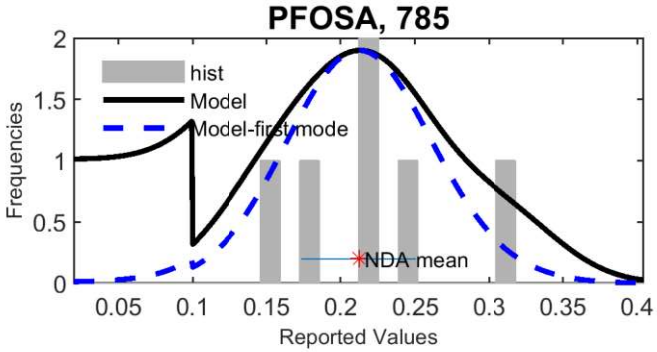
Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

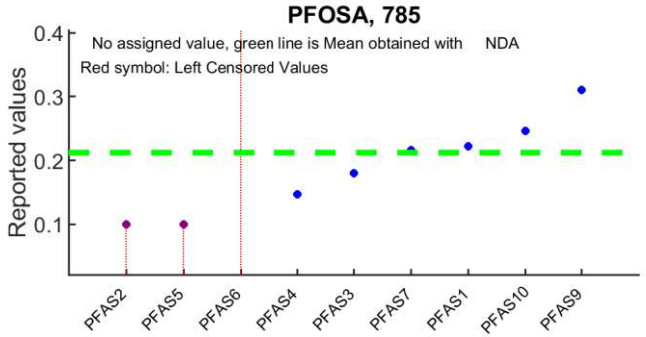




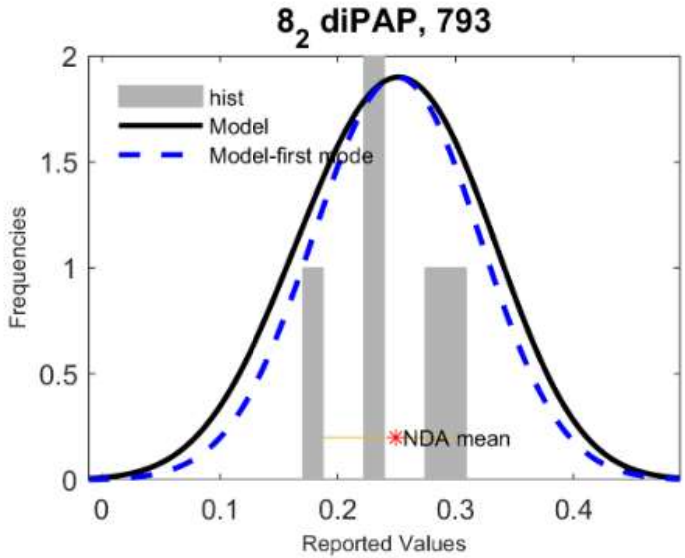


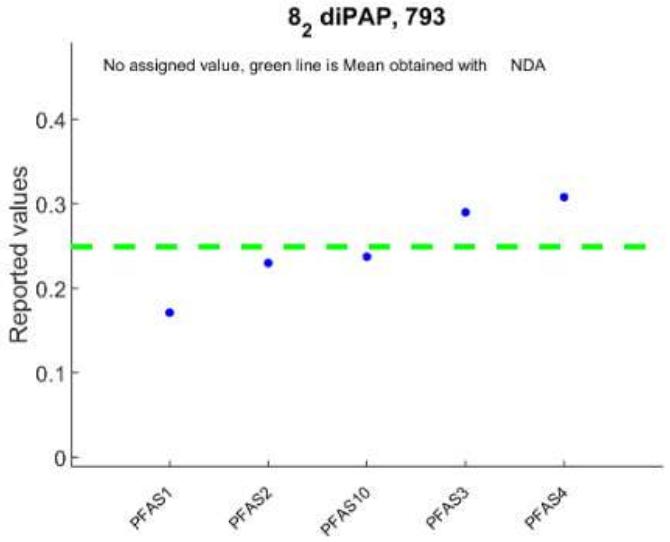


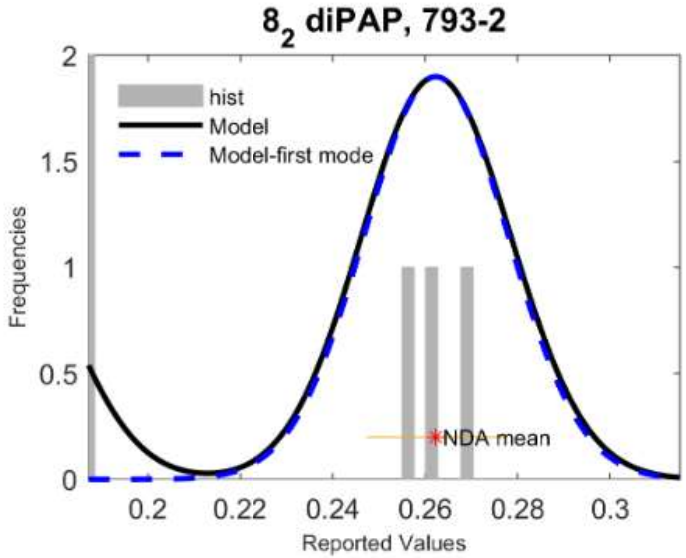


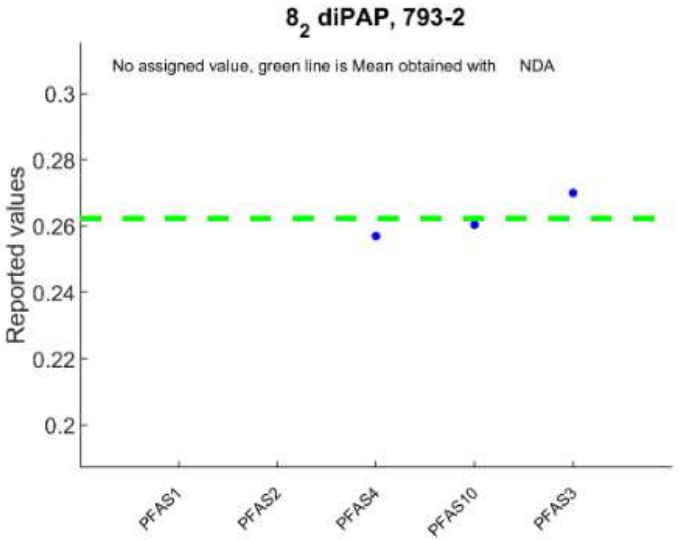


Per- and Polyfluoroalkyl substances Histogram+PDFs and Ranked overview

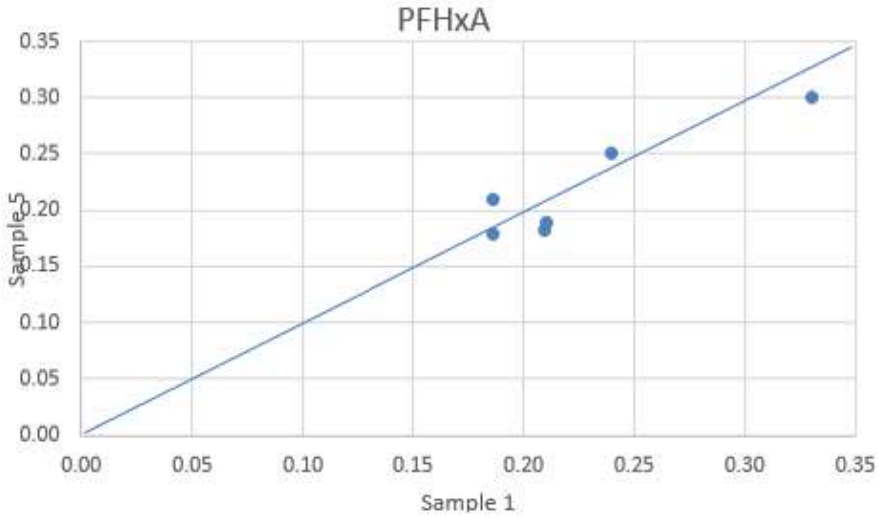


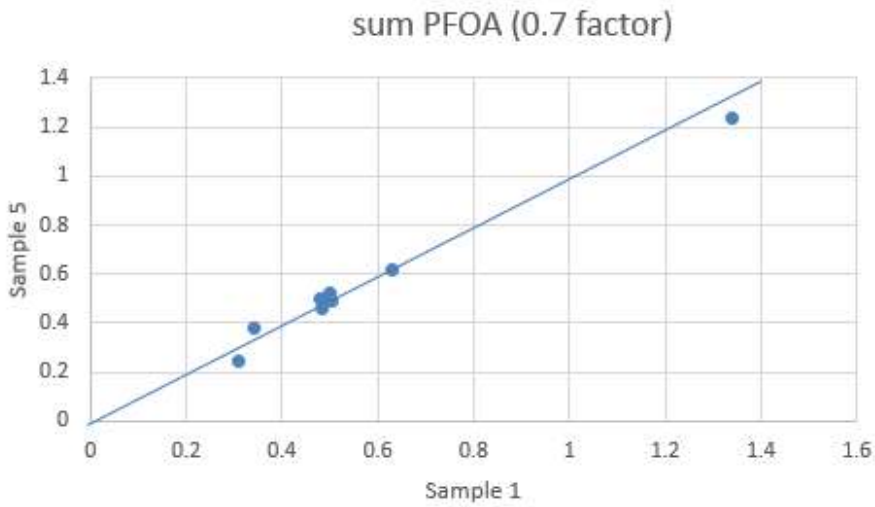


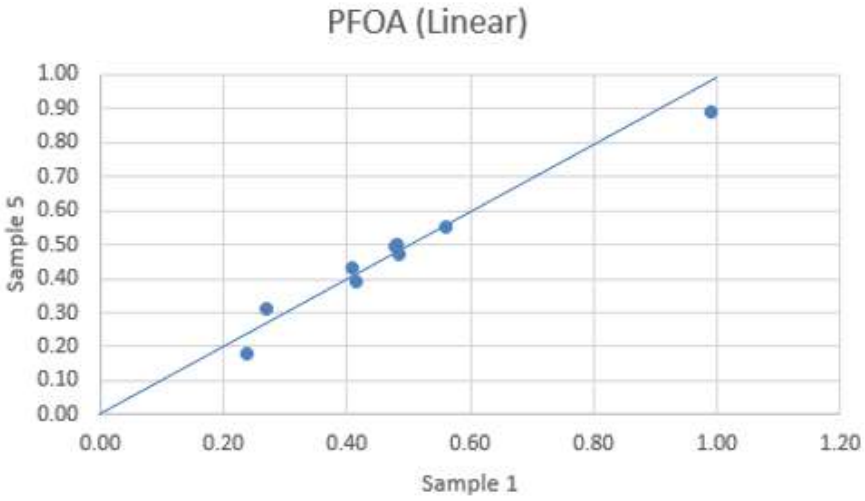


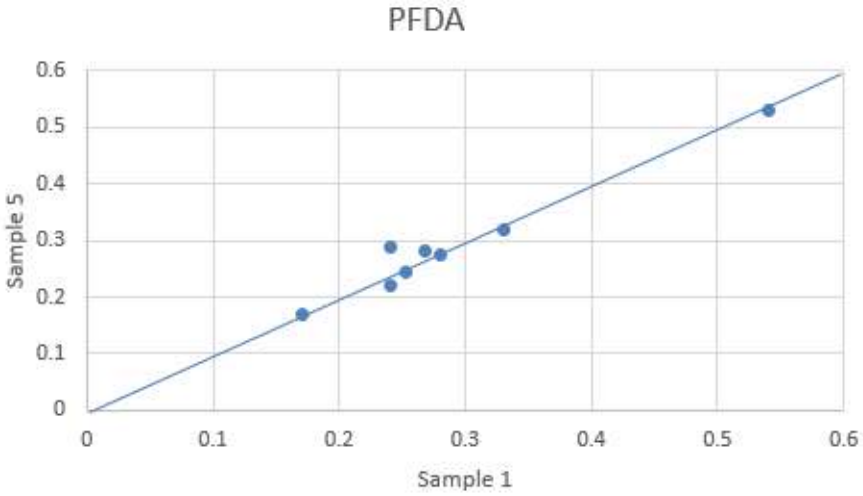


Per- and Polyfluoroalkyl substances Comparison duplicate sample



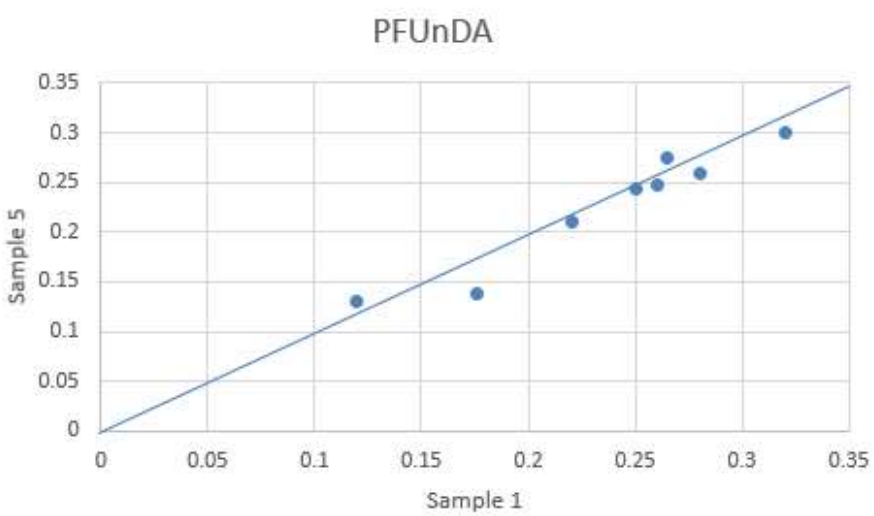


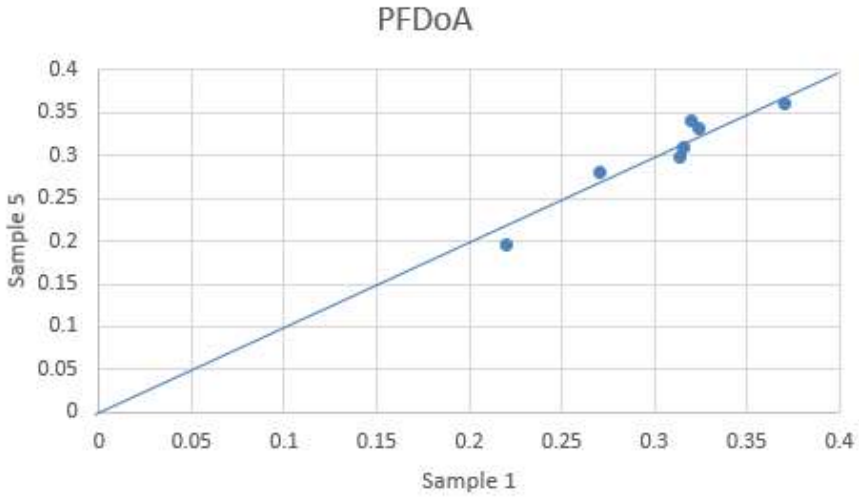


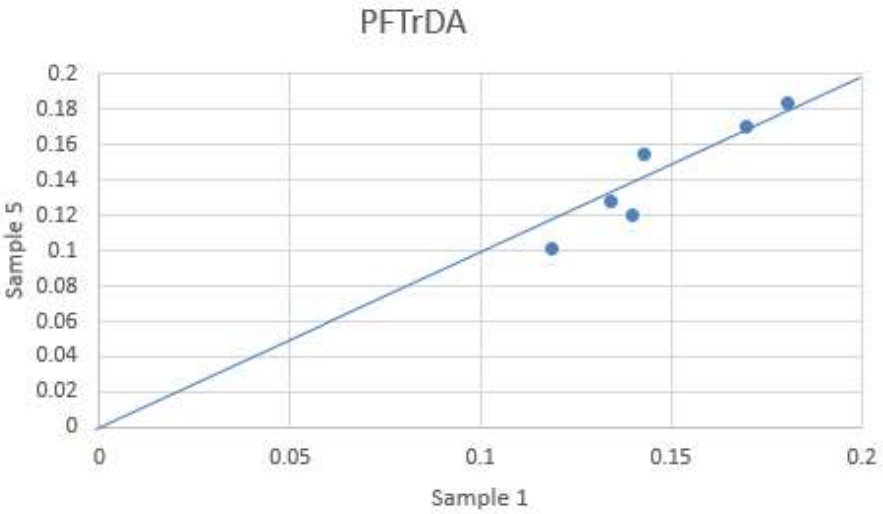


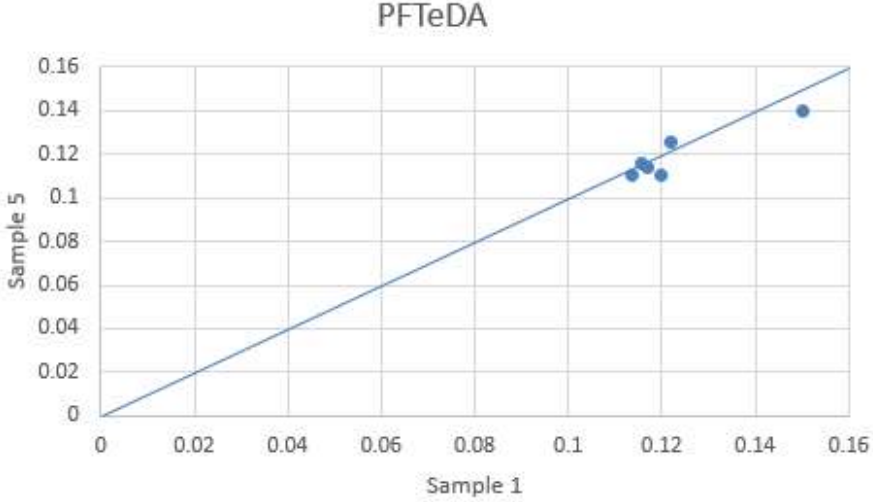
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



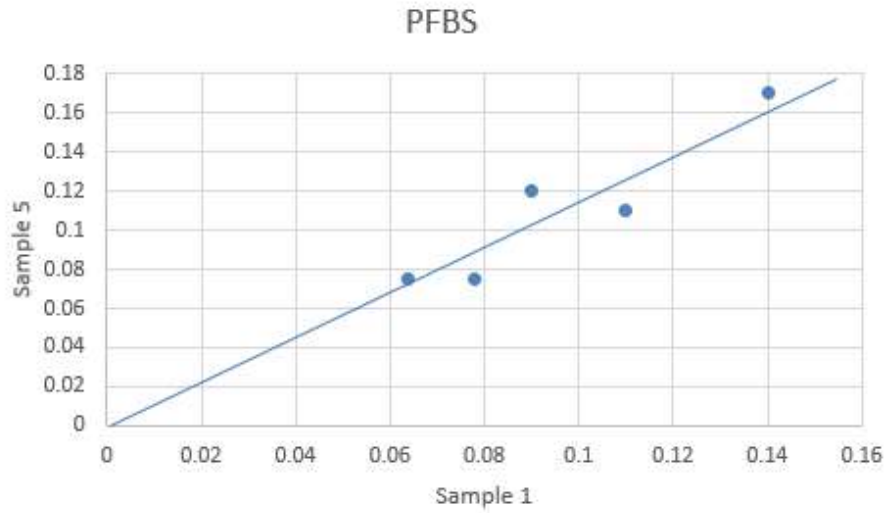


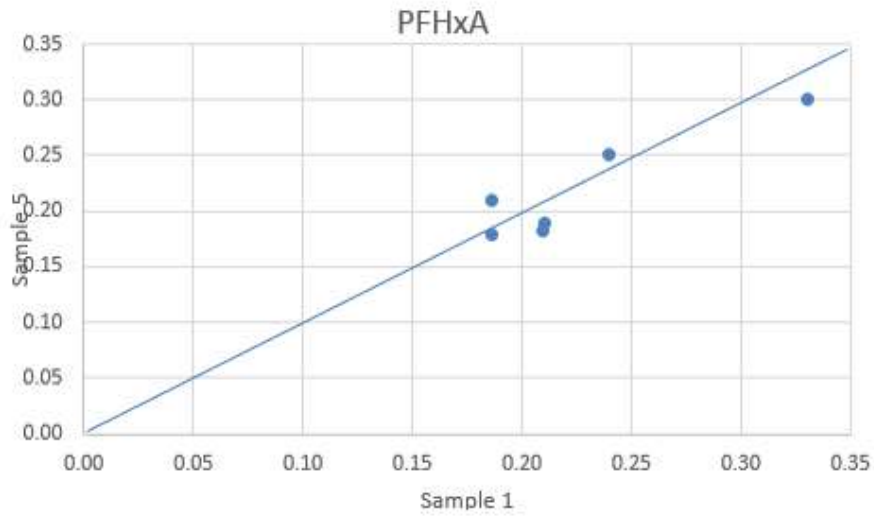


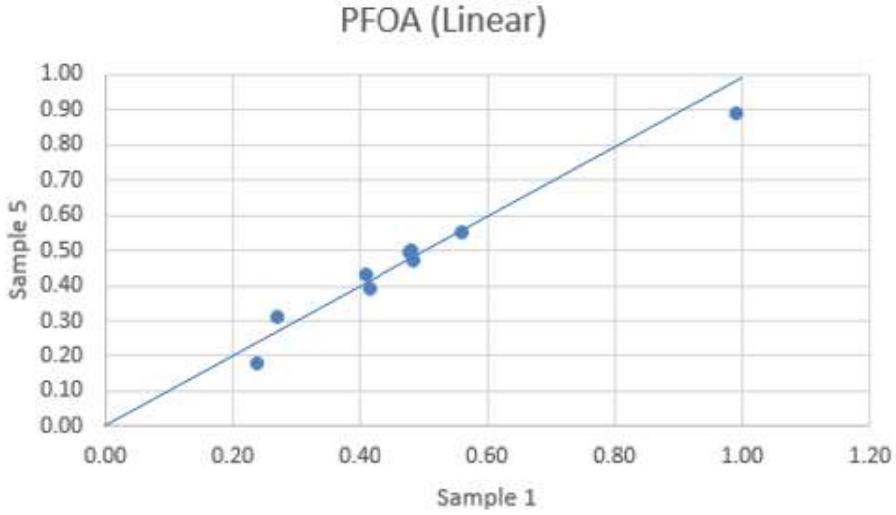


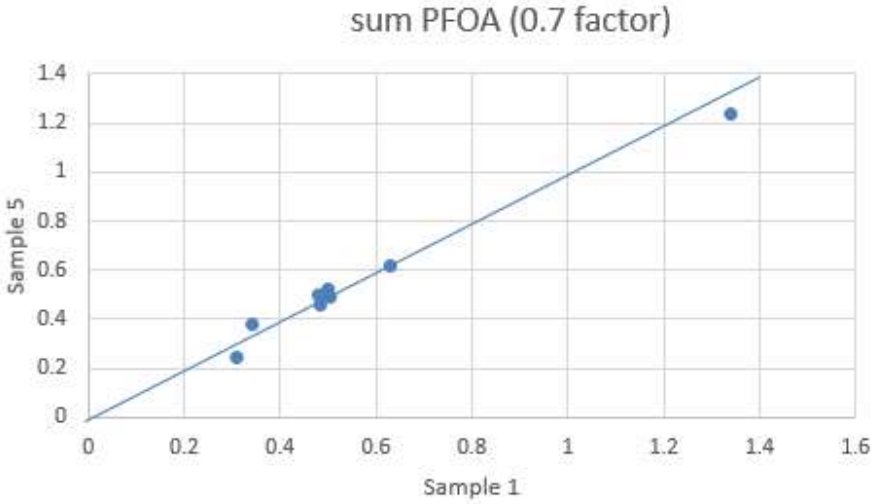
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



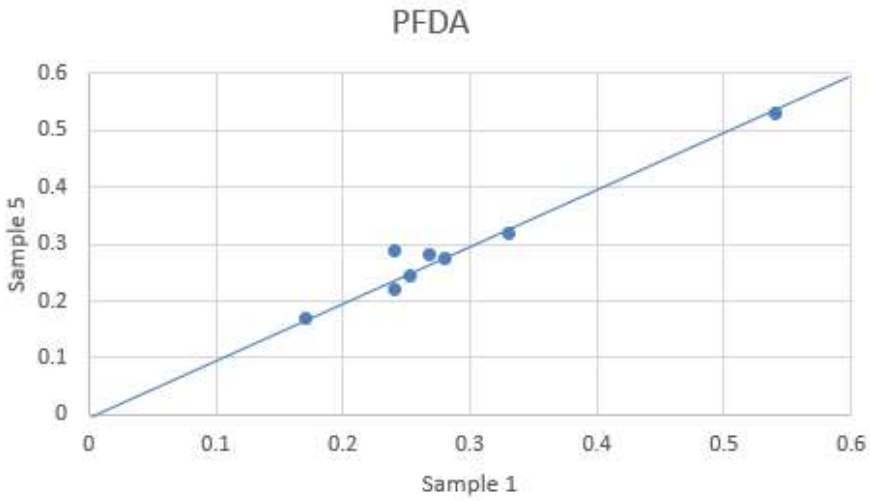


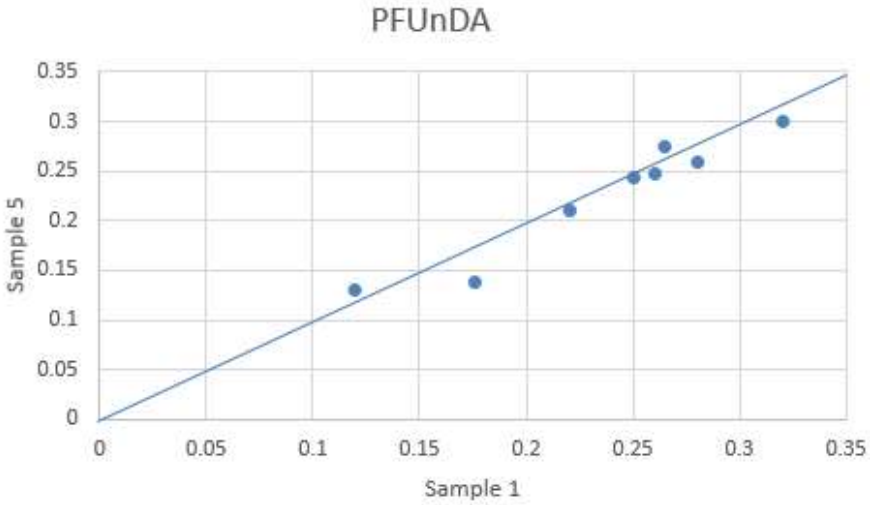


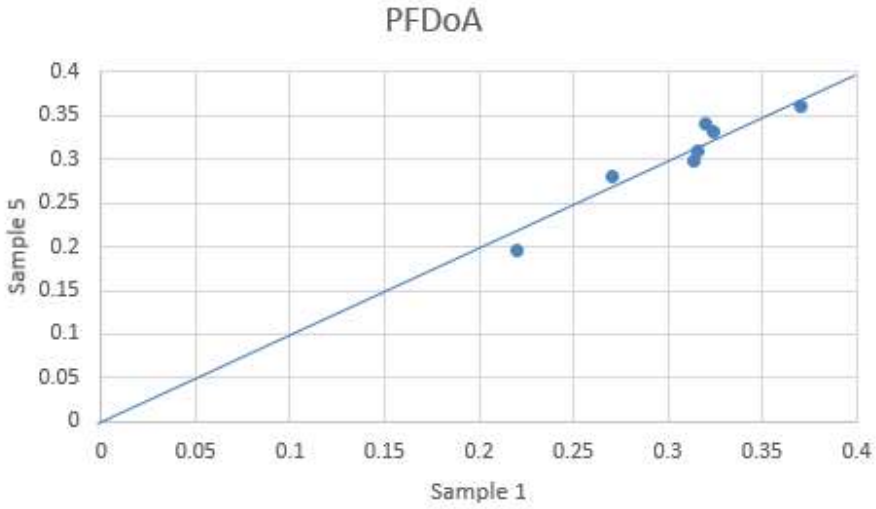


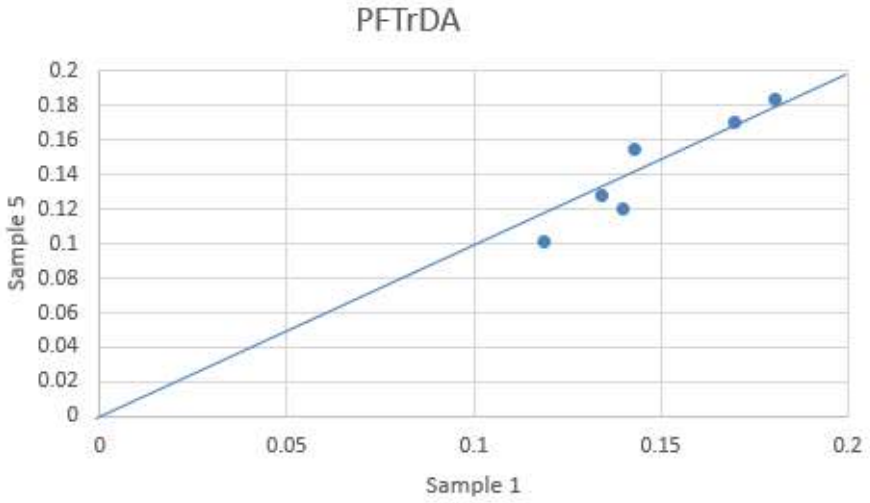
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



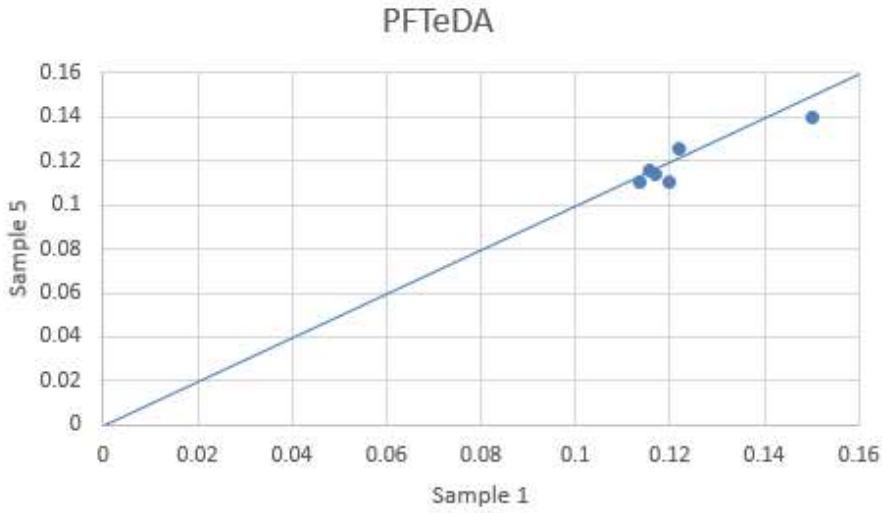


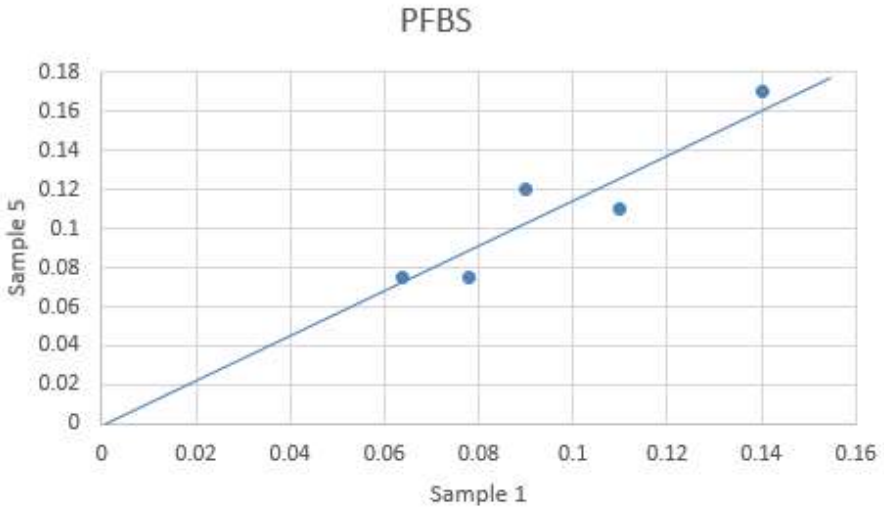


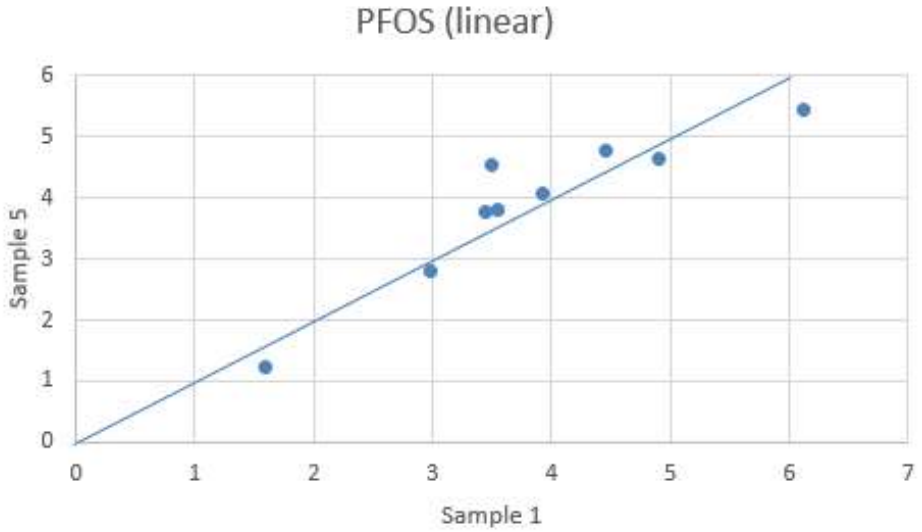


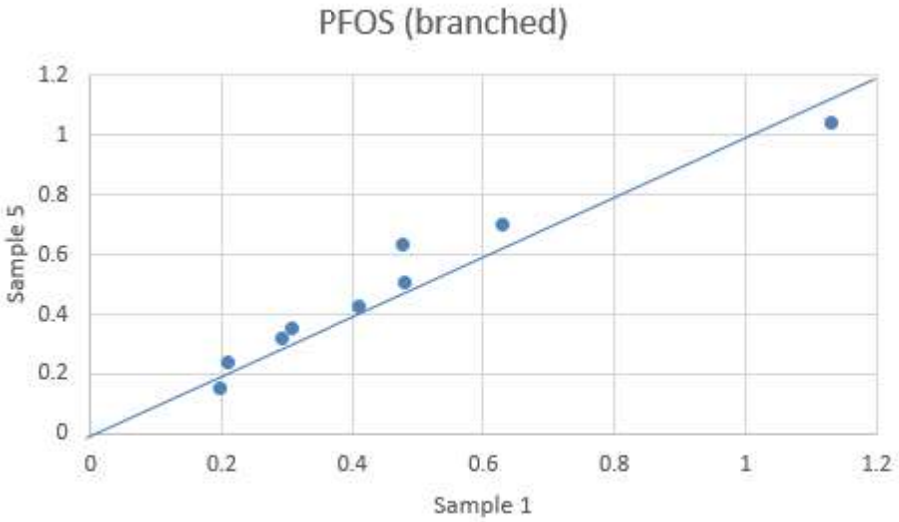
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



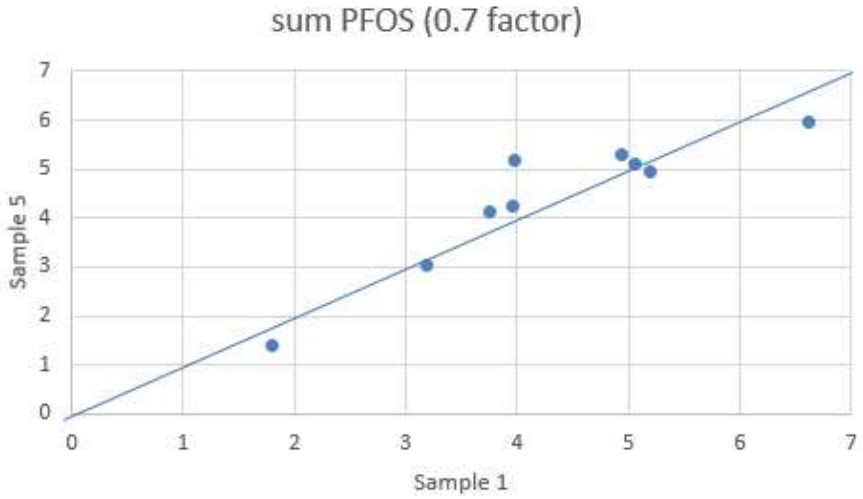


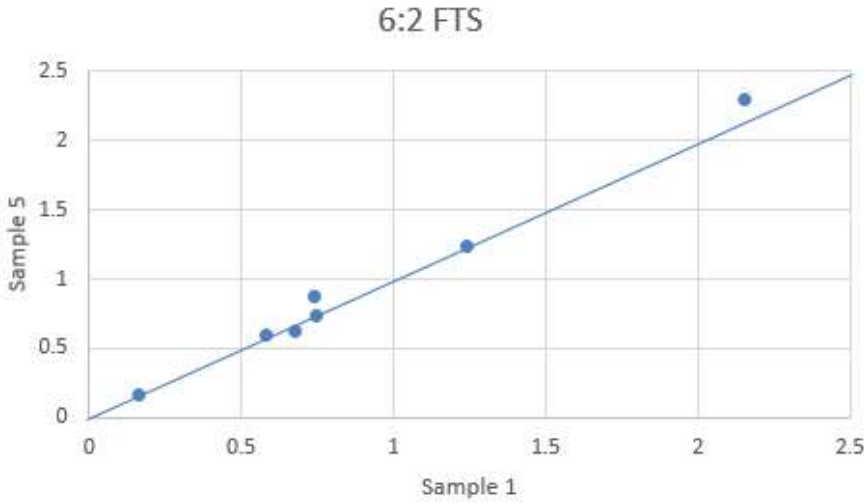


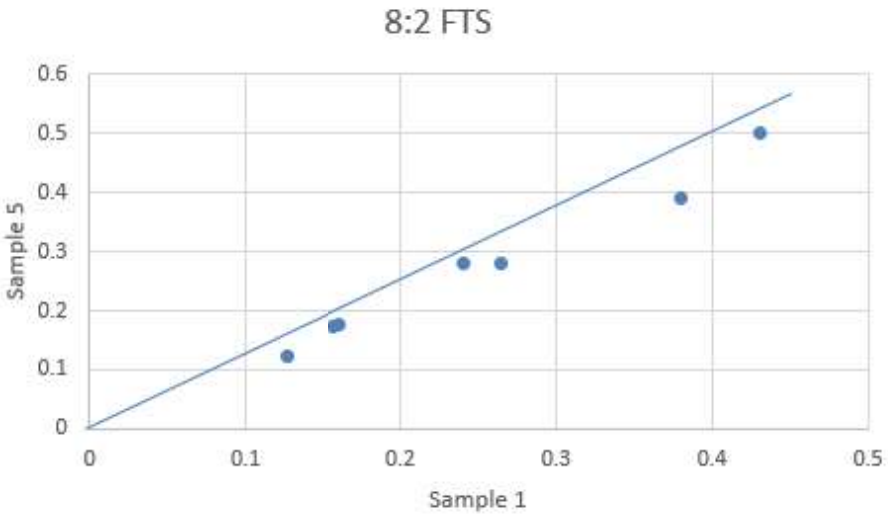


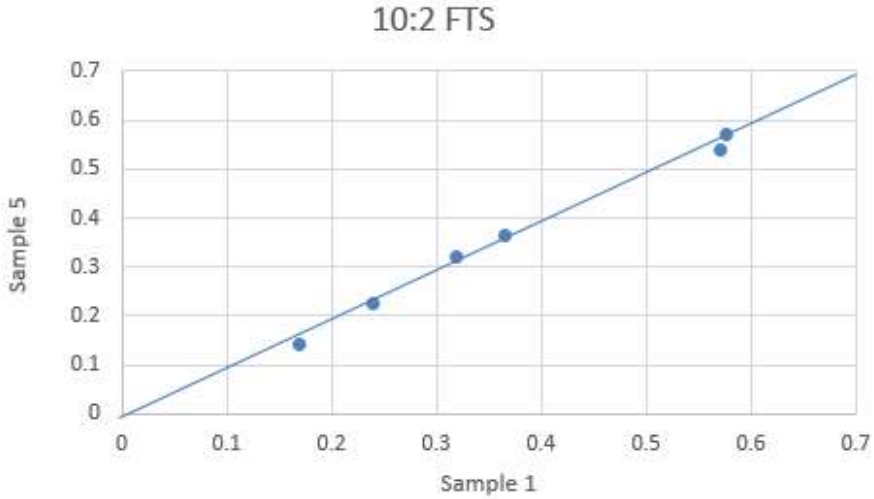
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



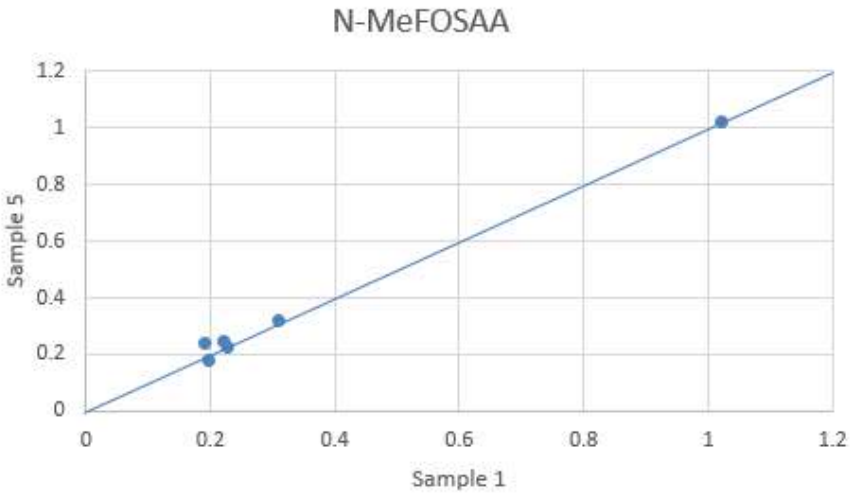


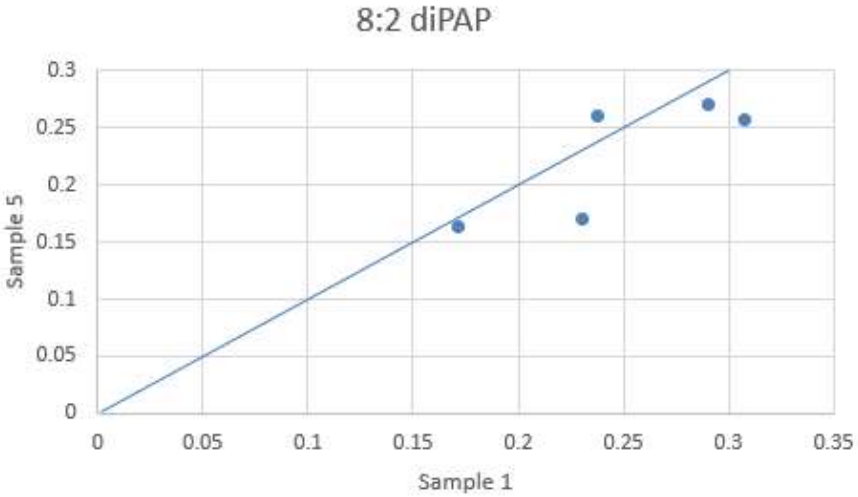


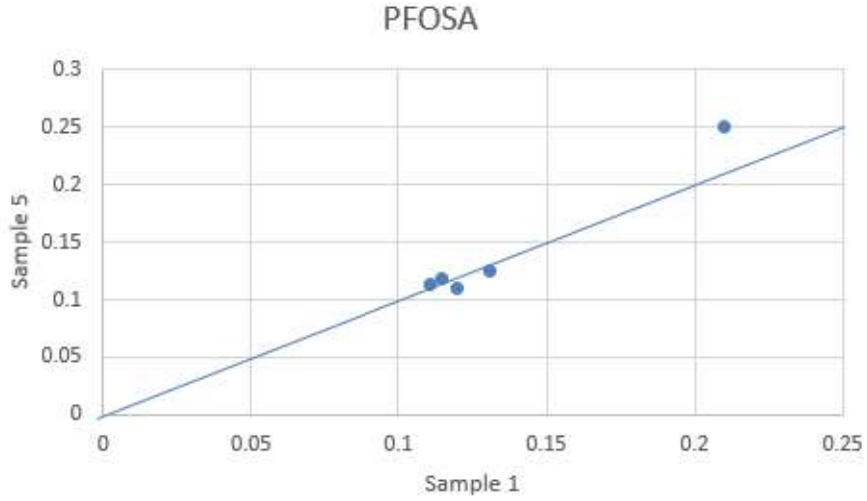


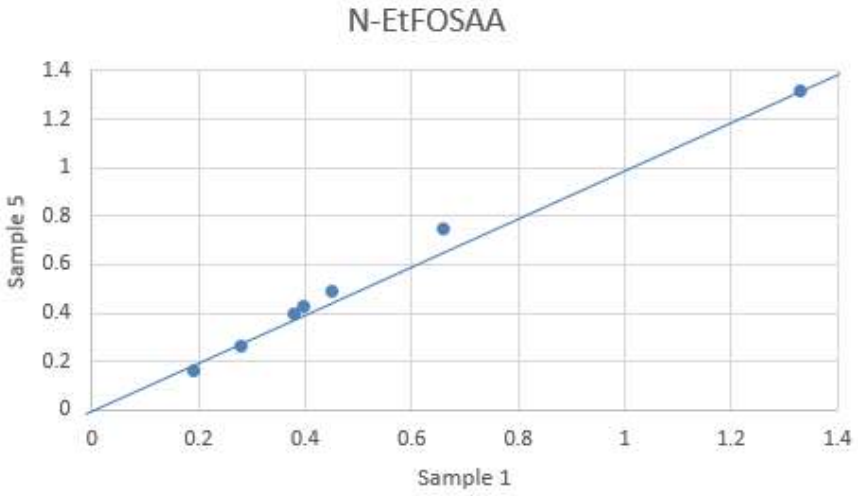
= 1:1 line

Per- and Polyfluoroalkyl substances Comparison duplicate sample



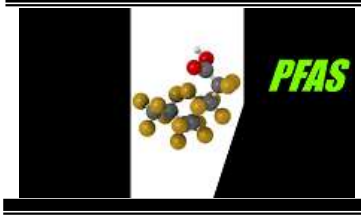






= 1:1 line

CONTINUOUS LABORATORY-PERFORMANCE STUDIES ORGANIZED BY



PFAS

In this round 9 participants

For more information and application, please contact:
WEPAL
PO BOX 8005
6700 EC WAGENINGEN
THE NETHERLANDS
Tel. : +31 317 48 23 37 no reply : +31 317 48 3643
Fax. : +31 317 48 56 66
E-mail : Info.Wepal@wur.nl
Internet: www.wepal.nl