PFAS in Deer and Turkeys in the Fairfield Area, Maine
2022 Sampling Summary Report

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Maine Department of Inland Fisheries and Wildlife

Maine Center for Disease Control and Prevention

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Contents

1 Summary

In October 2021, the Maine Department of Inland Fisheries and Wildlife (MDIFW) collected eight white-tailed deer in close proximity to several farm fields known to have high levels of per- and polyfluoroalkyl substances (PFAS) in soil in the Fairfield area. Based on elevated levels of perfluorooctane sulfonic acid[1] (PFOS) in sampled deer muscle tissue, a Do Not Eat advisory for deer was subsequently issued. The Do Not Eat advisory (Advisory) covered a roughly 125 square mile extended area. The boundaries of the Advisory used easily identifiable landmarks and were set with an abundance of caution given the limited number of deer tested for PFAS and the assumed potential seasonal range (approximately five miles) of white-tailed deer.

Following the issuance of the 2021 Advisory in the Fairfield area, MDIFW conducted additional sampling of both deer and wild turkeys. The objective was to substantially increase the sample size and geographic area sampled to provide a more data-driven basis for the Advisory area and to determine whether the Advisory for deer needed to be extended to hunter-harvested wild turkey. In February of 2022, an initial sample of 11 turkeys were collected within the Advisory area, with majority of the turkeys collected near PFAS-impacted fields. In May and June of 2022, a second sample of 51 turkeys were throughout the entire area covered under the Advisory for deer. In August and September of 2022, an additional 60 deer and 20 turkeys were collected throughout and just outside the deer Advisory area.

These new deer and turkey samples showed that elevated PFOS levels in deer tissues were localized to a much smaller area than the initial Advisory area. This smaller area of roughly 25 square miles encompassed several clusters of farm fields with PFOS levels ranging from 10 to more than 1,000 ng/g. Inside this smaller area there were 26 deer and 29 turkey samples. The mean deer muscle tissue PFOS concentration inside the area was 20.22 ng/g (range less than detection limit (<DL) to 54.30 ng/g). The mean turkey muscle tissue PFOS concentration inside the area was 24.07 ng/g (range <DL to 139 ng/g). Outside this smaller 25 square mile area there were 42 deer and 53 turkey samples. Most of these samples were below the detection limit for all PFAS. Deer muscle tissue PFOS concentrations ranged from <DL to 0.84 ng/g, and turkey muscle tissue PFOS concentrations ranged from <DL to 12.2 ng/g. Using the 50th, 75th, and 90th percentiles as estimates of muscle tissue PFOS concentrations, Maine CDC followed general U.S. Environmental Protection Agency (EPA) risk assessment methodology to estimate the number of yearly meals of venison and wild turkey adults and young children (aged 1 to 6) could consume without exceeding the U.S. Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Level (MRL) for PFOS, and accounting for background exposure to PFOS estimated from typical serum PFOS levels in the U.S. population. At the 50th percentile for deer and the 75th percentile for turkey, no more than eight meals per year for adults and four meals per year for children could be consumed inside this smaller area.

[1] Maine CDC follows the PFAS naming convention indicated by the U.S. Agency for Toxic Substances and Disease Registry (ATSDR), which follows the U.S. CDC's PFAS terminology in using the acid form when listing the compounds full name, e.g., perfluorooctane sulfonic acid versus perfluorooctane sulfonate (ATSDR 2021).

MDIFW, in consultation with Maine CDC, decided to reduce the 2021 Advisory area from 125 square miles to 25 square miles and to extend the species in the initial advisory to include both deer and turkey (Figure 1). The advisory area encompasses multiple farm fields that have been determined to contain elevated levels of PFOS and other PFAS in soil.

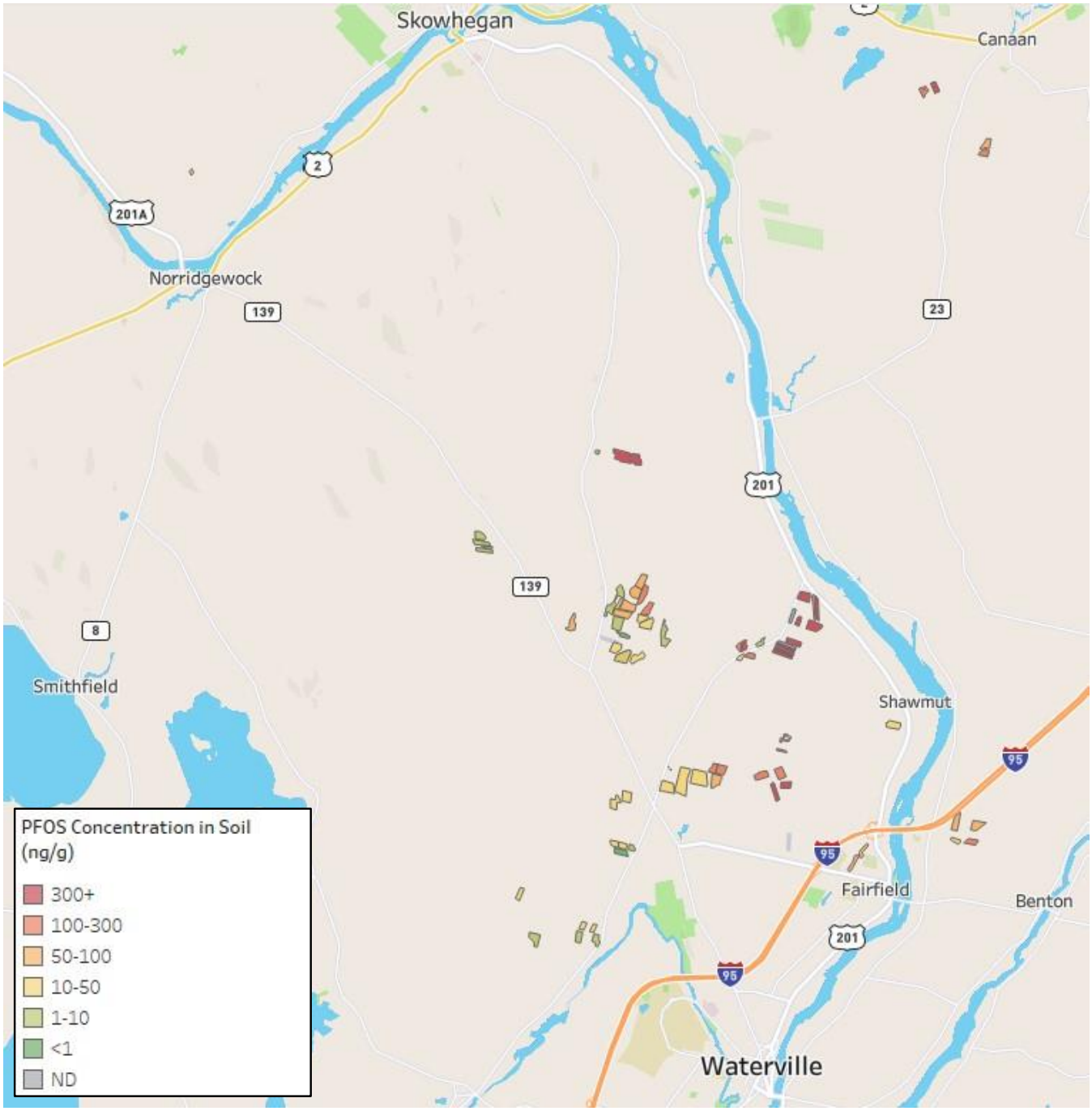
Figure 1. Revised Do Not Eat Advisory area for white-tailed deer and wild turkey.

2 Background on PFAS Contamination in Fairfield, Maine

An investigation into the presence of PFAS in the Fairfield area began after the Maine Department of Agriculture, Conservation and Forestry (DACF) detected PFOS in milk samples collected at a local dairy farm. The measured PFOS levels in milk at this farm were greater than 20,000 ng/L, nearly 100 times higher than the DACF's PFOS milk action level of 210 ng/L developed by the Maine CDC in 2017 (Maine CDC 2017). Subsequently, a second dairy farm in Fairfield was identified as having milk contaminated with PFOS at a level of 800 ng/L. In response to this finding, the Maine Department of Environmental Protection (DEP) began testing for PFAS in soil at farm fields in the Fairfield area which had known histories of application of residual waste materials. As of November 2021, DEP had sampled soil from over 90 individual farm fields in the Fairfield area and surrounding towns of Oakland, Benton, and

Unity Township.[2] Figure 2 summarizes average soil PFOS levels in tested farm fields in the Fairfield area. Field average soil PFOS levels ranged from less than 10 ng/g to a high of 1,080 ng/g on a dry weight basis.

Figure 2. Range of PFOS soil levels (ng/g, dry weight) for groups of tested farm field parcels in the greater Fairfield area.

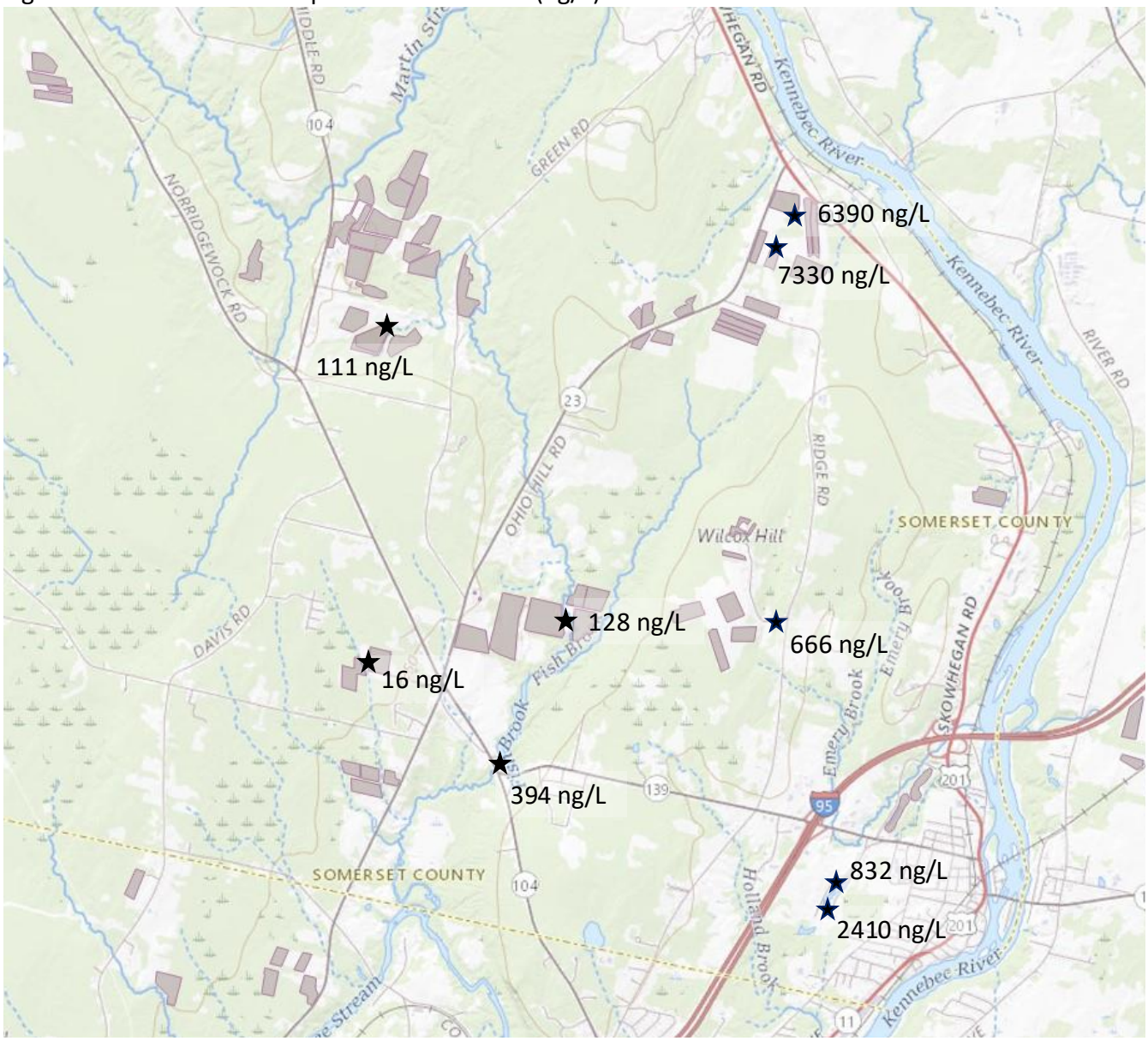


After detecting high PFOS levels in soil from farm fields, several surface waters on or near the impacted farm fields were sampled for PFAS. DEP tested two small ponds located directly on PFAS-impacted

[2] Maine DEP Fairfield PFAS investigation - https://www1.maine.gov/dep/spills/topics/pfas/fairfield/index.html

farm fields, a small brook and its tributaries running through several impacted fields, a separate brook running through a wetland near some impacted fields, and two larger ponds adjacent to PFAS-impacted fields that were historically stocked with brook trout as a “put and take” fishery (Figure 3). PFOS surface water concentrations from the small ponds located directly on PFAS-impacted farm fields were measured at 6,390 and 7,330 ng/L. PFOS levels in the brook that borders several impacted fields were measured at 111 ng/L at the furthest upstream tributary, 128 ng/L where it runs through some impacted farm fields, and 394 ng/L at an impoundment further downstream. PFOS levels in the small wetland brook located near a different set of impacted fields were measured at 666 ng/L. The two stocked ponds had PFOS concentrations of 2,410 ng/L in the smaller pond and 832 ng/L in the larger pond.

Figure 3. PFOS levels in sampled surface waters (ng/L).



Sampling conducted by Maine CDC and DEP has shown that the PFAS present in the soil are taken up by plants such as grasses and corn growing in the fields. Uptake of PFOS by pasture plants on some of

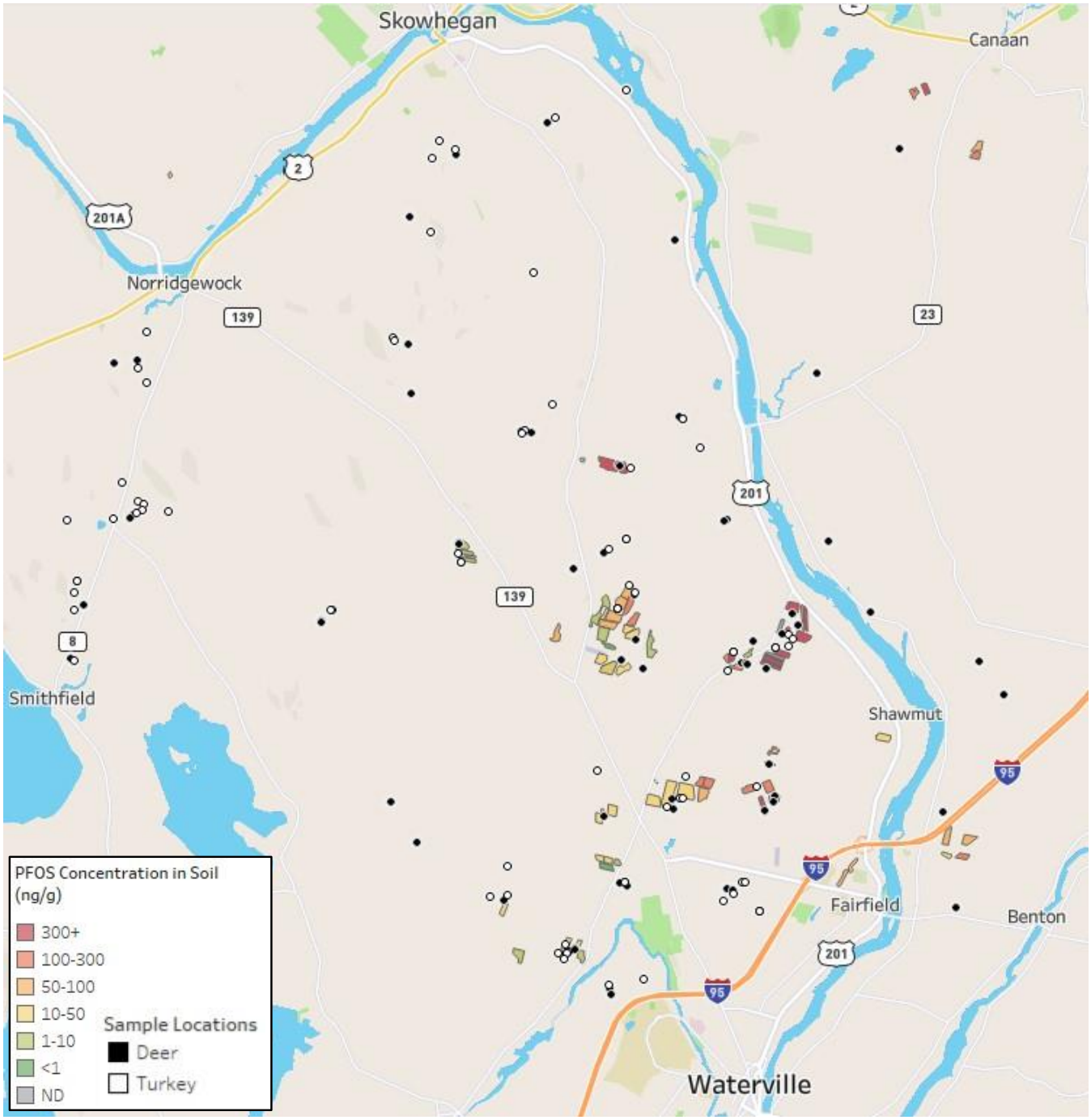
the fields with the highest PFOS soil levels is unusually high. Modeling work by Maine CDC indicates that the primary PFOS exposure pathway for livestock at both dairy farms (mentioned above) is a soil to forage to livestock to milk pathway. The findings of PFAS contamination in soils, plants, surface water, and livestock prompted concerns surrounding hunting and consumption of deer and turkey that may also feed on these fields. In response to concerns from area hunters as well as publications of deer consumption advisories by other states due to elevated PFOS levels in deer tissue, MDIFW conducted a preliminary, targeted sampling of deer in the Fairfield area in the fall of 2021. This initial sampling resulted in a Do Not Eat Advisory covering a roughly 125 square mile area set out of an abundance of caution given the limited number of deer tested for PFAS and the assumed potential seasonal range (approximately five miles) of white-tailed deer. Results from the 2021 targeted deer sampling have been previously summarized (Maine CDC 2022). In 2022, MDIFW expanded the sampling of deer in the Fairfield area and additionally began sampling turkey. The object of the 2022 follow-up sampling of both deer and wild turkeys was to substantially increase the sample size and geographic area sampled to provide a more data-driven basis for the deer consumption advisory area and to determine whether the Advisory for deer needed to be extended to hunter-harvested wild turkey.

3 Methods

3.1 Fairfield Area Deer and Turkey Sampling and Tissue Collection

The methods for sampling the original eight deer have been described previously (Maine CDC 2022). In 2022, 60 deer and 82 turkeys were collected from fields both with and without a known history of PFAS contamination, in the Fairfield, Maine area by the US Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services (USDA-APHIS-WS) and MDIFW. Tissue samples, including skeletal muscle, heart, and liver, were collected for PFAS testing. Animals were collected with the intent that expected home ranges encompassed the varying soil contamination levels, including areas distant from contamination. These fields are a mixture of hay fields (some harvested, some fallow) and corn fields. Figure 4 shows the locations where all deer and turkeys where harvested relative to fields known to be impacted by PFAS contamination.

Figure 4. Locations where deer (black) and turkey (white) were collected relative to fields known to have elevated soil PFOS levels.



Landowners were contacted by MDIFW biologists, and permissions were obtained to collect deer and turkeys for sampling. Deer and turkeys were collected by APHIS sharpshooters on or near contaminated fields, and noise suppression was used to limit disturbance. Forty-two nights were spent sampling in the area. Deer tissues were collected in the field, while turkeys were transported to a central location for tissue collection. Participating staff were provided with and adhered to DEP field

sample collection guidelines to avoid cross-contamination.[3] Wearing nitrile gloves and using a stainless-steel blade, approximately 200 g of skeletal muscle tissue was sampled from each animal. Approximately 200 g of liver was also sampled from all the initial 2021 deer, all winter 2022 turkeys, and 38 of the deer in 2022 (Table 1). Heart tissue was also collected from ten of the deer in 2022. Nitrile gloves were changed between collection of each tissue sample, and stainless-steel blades and other instruments were washed with Liquinox and rinsed with PFAS-free water between animals. Tissue samples were double bagged in Ziploc brand bags and labeled with a sample ID and tissue type. All tissue samples were stored on bagged ice in a cooler and then in a -20°C chest freezer until they could be sent to the laboratory for PFAS analysis. Data collected with each animal included date and time of collection, a general description and UTM coordinates at kill location, animal ID, sex, and age-class. Information was added to field data sheets indicating sample type and name of staff collecting samples. Incisor teeth of deer were collected for aging by cementum annuli.

Table 1. Number of samples, dates, and tissue types collected for Fairfield area deer and turkeys.

		Number of Animals Collected			
		Fall 2021	Winter 2022	Spring 2022	Fall 2022
Deer	**Total Deer Collected**	**8**	-	-	**60**
	Tenderloin	8[a]	-	-	21
	Hindquarter	-	-	-	60[a]
	Liver	8	-	-	38[a]
	Heart	-	-	-	10
Turkey	**Total Turkey Collected**	-	**11**	**51**	**20**
	Breast	-	11	51[a]	20[a]
	Liver	-	11	-	-

[a] Subset of samples analyzed by both Battelle and FDA Center for Food Safety and Applied Nutrition.

3.2 PFAS Deer and Turkey Tissue Analysis

Tissue samples were shipped overnight to Battelle Laboratory in Massachusetts frozen and on ice for PFAS analysis by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM) on a Sciex 5500 (AC) LC-MS/MS and quantified using isotope dilution. Deer tissue samples collected in 2021 and turkey tissues samples collected in the winter and spring of 2022 were analyzed for a suite of 28 PFAS (Appendix A) using Department of Defense QSM 5.3 Table B-15.[4] Turkey tissues sampled in the fall of 2022 and all 2022 deer tissue samples were analyzed for the same suite of 28 PFAS using EPA Draft Method 1633. Quality Control samples consisted of procedural blanks, matrix spikes and laboratory duplicates.

A subset of prepared sample homogenates were sent from Battelle Laboratory to the U.S. Food and Drug Administration (FDA) Center for Food Safety and Applied Nutrition Laboratory (CFSAN) in

[3] https://www.maine.gov/dep/spills/publications/sops/documents/SOP-RWM-DR-014-Sampling-Analysis-Plan-Development-Addendum-A-PFAS-Requirements-04082020.pdf
[4] https://denix.osd.mil/edqw/documents/manuals/qsm-version-5-3-final/

Maryland for interlaboratory comparisons. FDA analyzed samples with a Sciex 6500+ using their LC-MS/MS analytical method developed for the Total Diet Study Program (Genualdi et al. 2021). FDA analyzed all samples as duplicates.

4 Results

4.1 Data Quality Assessment

The original eight deer sampled in fall 2021 and both the winter and spring 2022 turkeys were all analyzed using Battelle's Department of Defense (DoD) method, whereas the fall 2022 deer and turkeys were both analyzed using EPA draft method 1633. The reporting limits for PFOS (the predominant PFAS measured in deer and turkey tissues) were generally similar between the two analytical methods, ranging from 0.4 to 0.5 ng/g. The method detection limit (MDL) for the DoD method was 0.05 ng/g compared to 0.19 ng/g for the EPA Draft 1633 method.

One sample per batch was run as a laboratory duplicate by Battelle. All laboratory duplicates had a calculated relative percent difference (RPD) between 3 and 21% for PFOS, with the two highest RPDs being from a deer tenderloin sample that had very low detection (i.e., between the reporting and detection limits) and one deer liver sample that had elevated PFOS concentrations such that the sample needed to be diluted to quantify. One sample per batch was also run as a matrix spike. All matrix spikes had recoveries for PFOS between the data quality objective of 50 to 150% recovery except for two samples where the spiked sample had PFOS concentrations more than 16 times greater than the target.

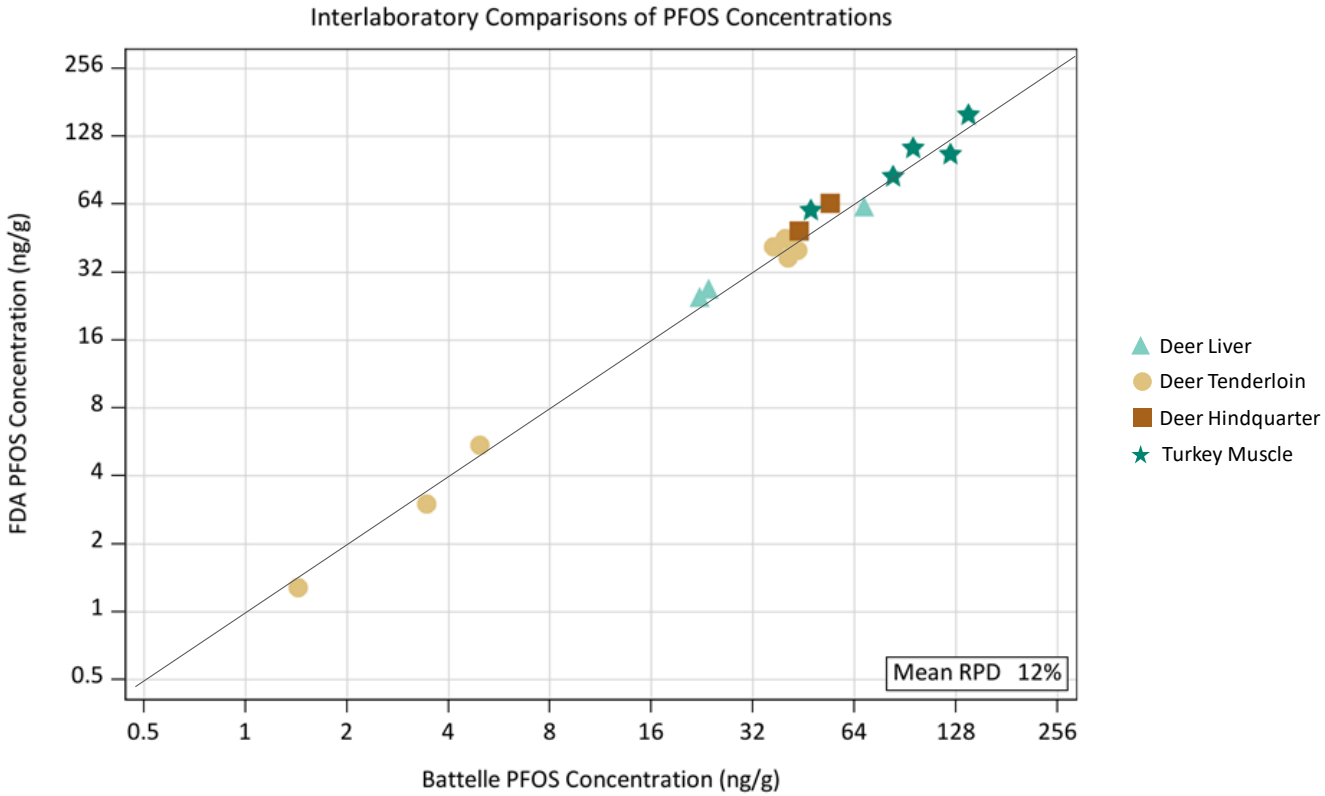
Extracted Internal Standard (EIS) recoveries for PFOS for the fall 2021 deer analyzed using the DoD method ranged from 56 to 107%, and the EIS recoveries for the fall 2022 deer analyzed using EPA Draft 1633 method ranged from 55 to 101%. The winter and fall 2022 turkeys analyzed using the DoD method had lower EIS recoveries for PFOS, ranging from 20 to 74%, with 47/62 muscle and 5/11 liver samples falling below the minimum QC target of 50% recovery. The fall 2022 turkeys analyzed using EPA draft 1633 method had EIS recoveries much closer to 100%, ranging from 77 to 125%. The low EIS recoveries for PFOS in the winter and spring turkey sampling is a source of uncertainty in the reported concentrations.

4.1.1 Interlaboratory Comparisons

A subset of both deer and turkey tissue homogenates initially analyzed by Battelle were sent from Battelle to the FDA CFSAN Laboratory for interlaboratory comparisons. In total all eight of the fall 2021 deer tenderloin, two of the fall 2022 deer hindquarter, three of the fall 2022 deer liver, three of the spring 2022 turkey muscle, and two of the fall 2022 turkey muscle samples were analyzed by both laboratories. All 18 wildlife samples analyzed by the FDA CFSAN Laboratory were analyzed using the same methodology. The method detection limit for PFOS was 0.016 ng/g, which is lower than both the DoD and EPA Draft 1633 methods used by Battelle.

The FDA CFSAN Laboratory ran a laboratory duplicate for each sample.[5] All laboratory duplicates had an RPD between 0 and 12% for PFOS. At least one sample per batch was also run with a matrix spike. Matrix spike recoveries for PFOS generally fell within the target of 50 to 150% recovery, except for when the spiked sample had high PFOS concentrations relative to the spiked amount. EIS recoveries for PFOS ranged from 58 to 109%. This included three of the spring 2022 turkey samples analyzed by Battelle with low EIS recoveries. Results for PFOS tissue levels from both laboratories are presented in Figure 5. Overall, results from Battelle and FDA had good agreement. No sample had an RPD greater than 30%[6], with a mean RPD of 12% across all tissue types. The good agreement between the two analytical laboratories using different methods and in some cases with substantially different EIS recoveries provides additional confidence in the PFOS results for the deer and turkey tissue samples. Results of interlaboratory comparisons for all other PFAS can be found in Appendices B and C.

Figure 5. Interlaboratory comparisons of PFOS results in deer and turkey tissues.



[5] Because each sample run by FDA was analyzed twice, the reported concentrations in Figure 5 and Appendix C are the average of the two results.

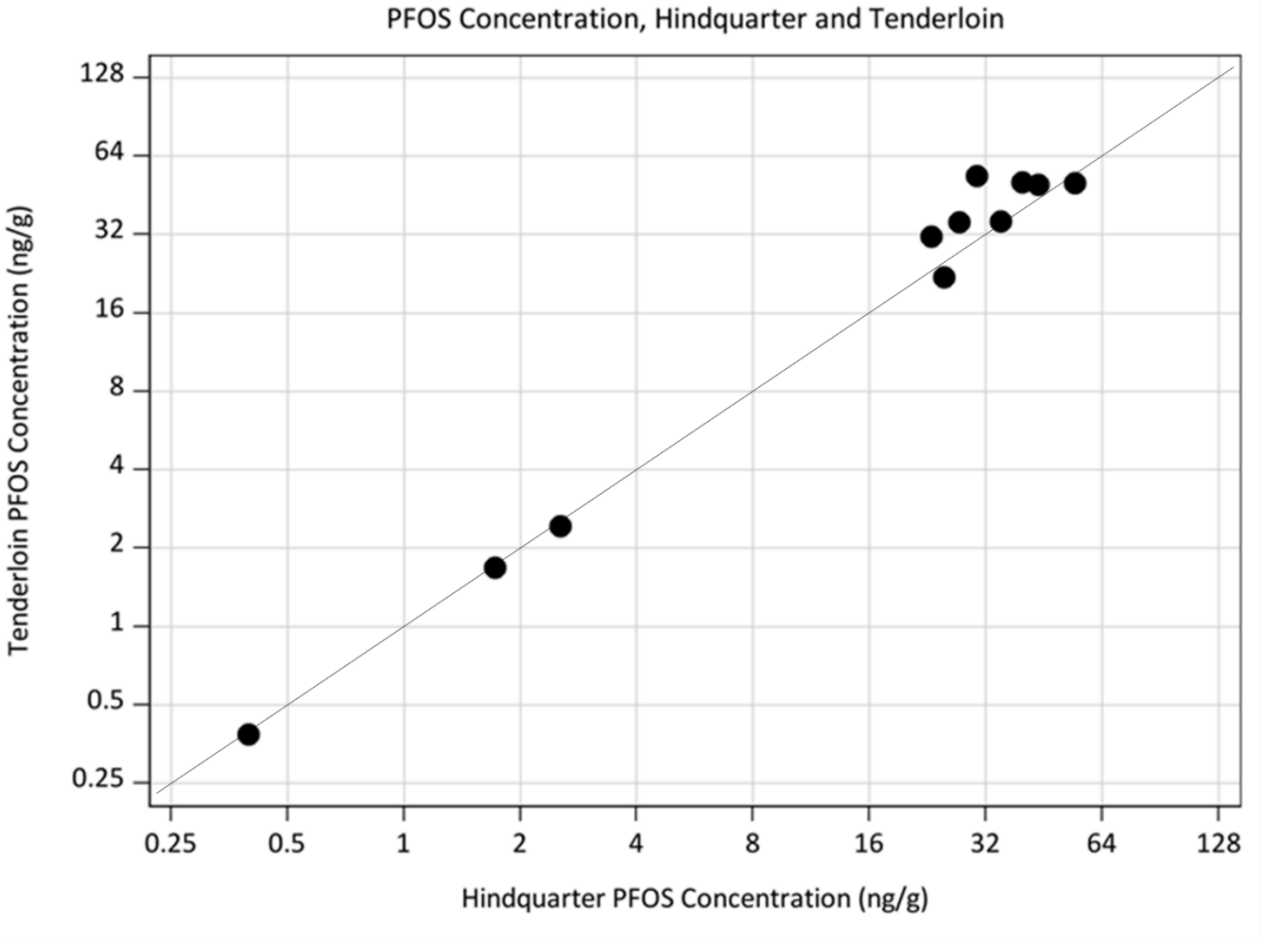
[6] The U.S. EPA National Study of Chemical Residues in Lake Fish Tissue Quality Assurance Project Plan (QAPP) uses a ±50% cutoff to evaluate laboratory split sample precision for quality assurance measures. The objective is to maintain agreement within ±50% for ≥90% of results that are >5 times the method detection, and agreement of ±100% when results are within 5 times the method detection limit (https://www.epa.gov/sites/production/files/2015-07/documents/fish-study-data-qa-report.pdf).

4.1.2 PFOS Muscle Tissue Comparisons

In the fall 2021 deer sampling, tenderloin was the only muscle tissue collected for analysis. In the fall 2022 sampling, hindquarter was the primary tissue type sampled, with tenderloin tissue collected and analyzed in 21 of the 60 deer. The tenderloin and hindquarter tissues for the fall 2022 deer sampling were analyzed in separate batches, but the reporting limits, detection limits, and surrogate recoveries were consistent across batches.

Eleven of the 21 deer had detectable levels of PFOS in the tenderloin tissue. PFOS concentrations in tenderloin tissue ranged from 0.38 to 53.90 ng/g with a mean PFOS concentration of 30.37 ± 20.91 ng/g. All 11 deer with detectable levels of PFOS in the tenderloin tissue also had detectable levels in the hindquarter tissue (Figure 6). For those 11 deer where PFOS was detected in both tissue types, the PFOS concentrations in hindquarter tissue ranged from 0.40 to 54.3 ng/g with a mean PFOS concentration of 25.74 ± 17.92 ng/g. Thus, when there was detection in both tissue types, tenderloin tissue tended to be slightly higher than hindquarter tissue with an average ratio of 1.14 ± 0.27. There were six deer that had detectable levels of PFOS in the hindquarter tissue but were below detection limits in tenderloin tissue. These six deer all had very low detection (i.e., below the reporting limit) in hindquarter tissue. Overall, these differences are relatively minor and not enough to discourage the combining of the 2021 and 2022 deer results for the purposes of addressing concerns about consumption.

Figure 6. Comparison of PFOS concentrations between deer hindquarter and tenderloin tissue.



4.2 Deer Tissue Results

Results for all PFAS analyzed in the 60 deer collected in 2022 are included in Appendix B. The detailed results for all PFAS analyzed in the original eight deer from fall 2021 can be found in the previous report (Maine CDC 2022). The results discussed in this report include skeletal muscle (hindquarter and tenderloin, pooled for analysis), liver (when available), and heart (when available) tissues.

4.2.1 Skeletal Muscle Tissue

In most skeletal muscle tissue samples, PFOS was the predominant PFAS detected (Figure 7). Other PFAS detected include PFDA, 4:2 FTS, 6:2 FTS, and PFPeA (Table 2). Of these other PFAS, 4:2 FTS was only detected in one deer tissue sample and below the reporting limit. The majority of 6:2 FTS detects were B qualified, meaning there was 6:2 FTS detection in the procedural blank at a level greater than half the Limit of Quantitation (LOQ, sometimes referred to as the Reporting Limit) and detected in the sample at less than ten times the level found in the procedural blank. As a result of the B qualified results, it is not possible to rule out laboratory contamination. There was only one deer muscle sample that was not B qualified because the 6:2 FTS detection was greater than ten times the level found in the procedural blank. For the deer samples that were also analyzed by the FDA laboratory, 6:2 FTS was not detected in any of the muscle tissue samples, despite the FDA CFSAN lab reporting a much lower

MDL for 6:2 FTS, around 0.02 ng/g, than Battelle, which was around 0.4 ng/g (See Appendices B and C). For these reasons, the results of 6:2 FTS are excluded from Figure 7 below. PFPeA was also detected in several hindquarter samples, and in some samples PFPeA was the only PFAS detected. PFPeA was not detected in any of the deer samples analyzed by the FDA laboratory despite both FDA and Battelle reporting an MDL around 0.2 ng/g for PFPeA (see Appendices B and C). Studies have suggested that there are analytical method interferences for PFPeA in biological samples (Bangma et al. 2023).

Figure 7. Concentrations of PFAS detected in 2021 and 2022 individual deer skeletal muscle tissue samples.

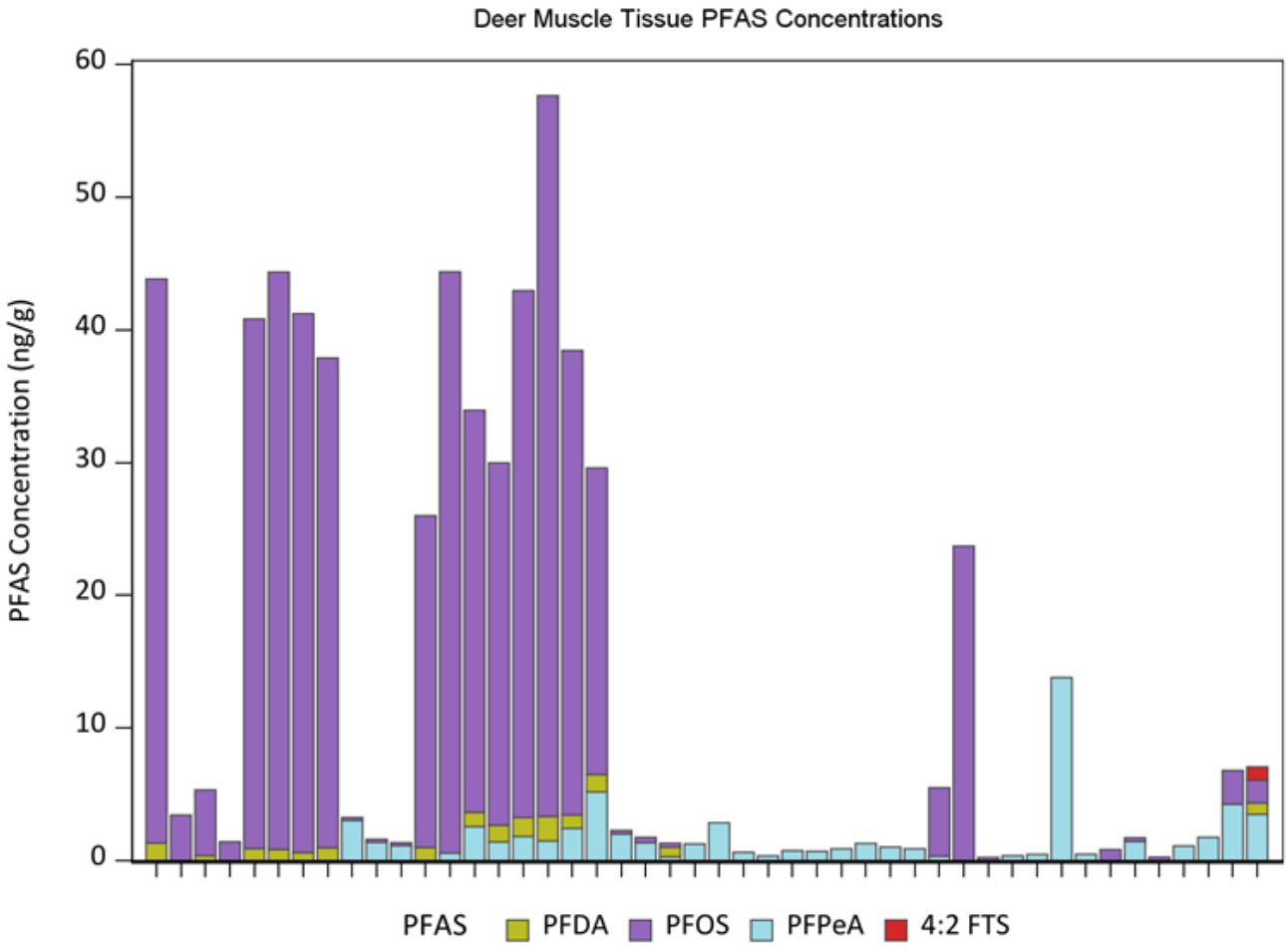


Table 2. PFAS detected in deer skeletal muscle tissue.

					Percentiles			
PFAS	N[a]	% Detection	Min	Max	50th	75th	90th	95th
PFPeA	60	55%	< DL	13.80	0.37	1.37	2.59	3.53
PFDA	68	22%	< DL	1.85	< DL	0.19	1.00	1.29
PFOS	68	44%	< DL	54.30	< DL	2.77	37.74	41.84
4:2 FTS	60	2%	< DL	1.00	< DL	< DL	< DL	< DL
6:2 FTS[b]	60	63%	< DL	160.00	2.62	8.43	14.21	28.14

DL = Detection Limit.

[a] Differences in number of deer tested for each PFAS are due to a smaller suite of PFAS being tested for in the fall 2021 deer.

[b] Most 6:2 FTS results were B qualified meaning there was 6:2 FTS detection in the procedural blank at a level greater than ½ the Limit of Quantitation and detected in the sample at <10x the level found in the procedural blank and therefore it is not possible to rule out laboratory contamination of these samples.

For the purposes of this report, PFOS will be the only PFAS discussed at length. Detailed results for all other PFAS detected in deer hindquarter tissue can be found in Appendix B.

All deer that had detectable PFOS in skeletal muscle tissue were collected from the Eastern side of the 2021 Advisory area. For the 30 deer with detectable levels of PFOS in skeletal muscle tissue, comparison of PFOS levels by age or sex of the deer was not possible due to the relatively small number of deer collected from each field area and the potential for deer to frequent multiple fields within the sampled area. However, there were no obvious differences in the PFOS concentrations in skeletal muscle tissue based on age or sex of the deer. The only doe/fawn pair collected together was from the fall 2021 sampling, and the pair had similar PFOS tissue levels (Maine CDC 2022).

4.2.2 Liver Tissue

Liver tissue was analyzed for all eight deer collected in fall 2021 and for 38 of the 60 deer collected in fall 2022. PFOS was detected in all 46 liver tissue samples. PFAS other than PFOS were more commonly detected in liver tissue than skeletal muscle tissue, but overall represented a small percentage of total PFAS compared to PFOS (Figure 8). The most commonly detected PFAS other than PFOS included PFDA, PFNA, PFUnA, PFDoA, and 8:2 FTS (Table 3). Detailed results for all PFAS detected in deer liver tissue can be found in Appendix B.

Figure 8. Concentrations of PFAS detected in 2021 and 2022 deer liver samples.

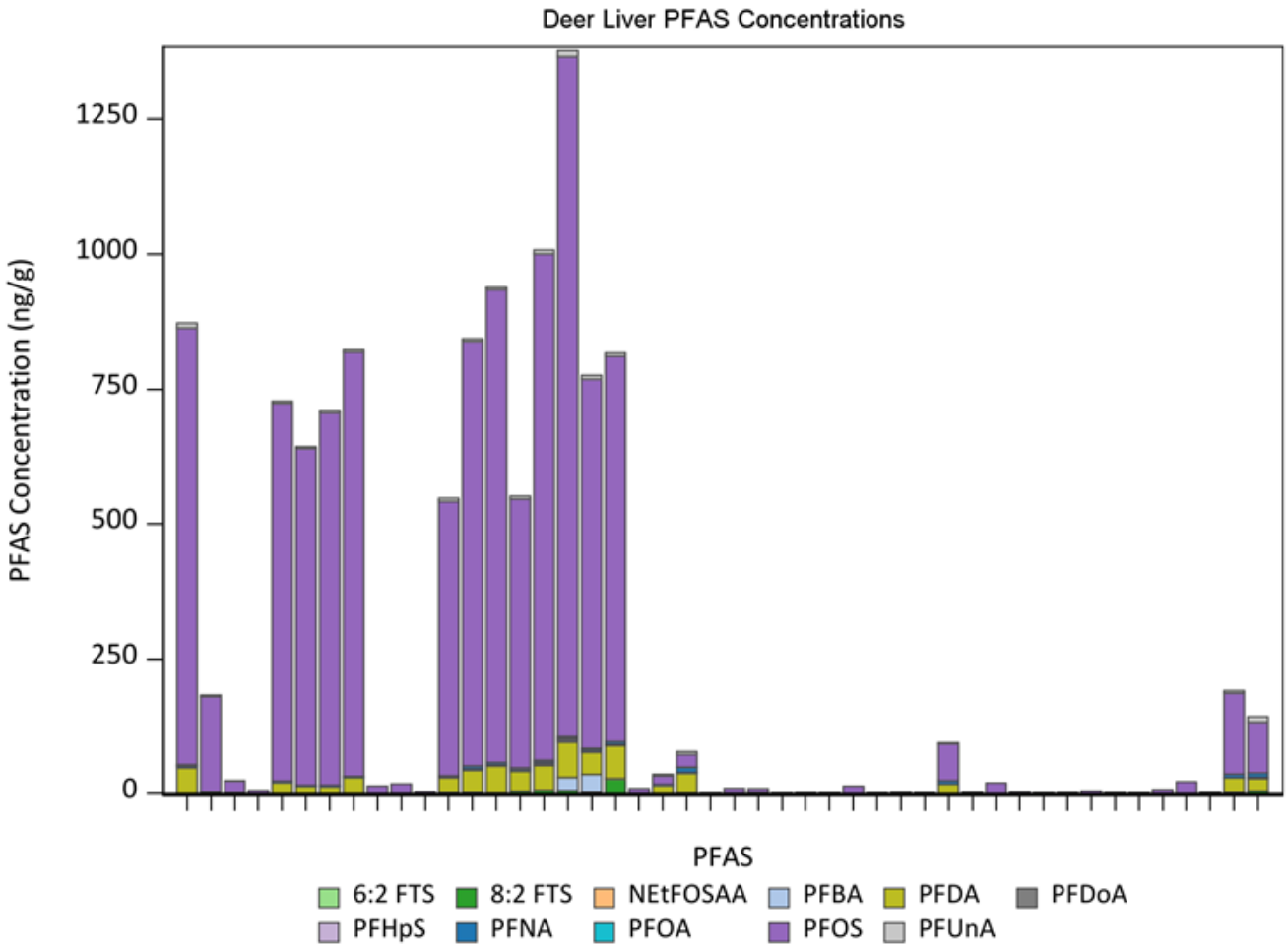


Table 3. PFAS detected in deer liver tissue in all deer 2021 and 2022.

					Percentiles			
PFAS	N[a]	% Detection	Min	Max	50th	75th	90th	95th
PFBA	38	5%	< DL	32.90	< DL	< DL	< DL	3.87
PFOA	46	2%	< DL	1.00	< DL	< DL	< DL	< DL
PFNA	46	43%	< DL	8.78	< DL	2.09	5.00	6.42
PFDA	46	54%	< DL	65.50	0.48	26.08	43.45	50.05
PFUnA	46	43%	< DL	11.60	< DL	4.54	6.76	9.00
PFDoA	46	37%	< DL	4.24	< DL	1.66	2.97	3.49
PFHpS	38	8%	< DL	3.34	< DL	< DL	< DL	2.70
PFOS	46	100%	1.07	1260.00	15.05	505.50	786.50	859.30
6:2 FTS	38	11%	< DL	0.76	< DL	< DL	0.50	0.72
8:2 FTS	38	29%	< DL	27.40	< DL	1.08	4.71	6.15
NEtFOSAA	46	2%	< DL	0.76	< DL	< DL	< DL	< DL

DL = Detection Limit.

[a] Differences in number of deer tested for each PFAS are due to a smaller suite of PFAS being tested for in the fall 2021 deer.

The ratio of liver PFOS to muscle PFOS was highly variable. For the 26 deer that had PFOS detected in both skeletal muscle and liver tissue, the ratio of liver PFOS to muscle PFOS ranged from 3.86 to 81.5 with a mean of 34.9 ± 23.7.

4.2.3 Heart Tissue

Heart tissue was analyzed for ten of the 60 deer collected in fall 2022. These ten deer samples were from animals with lower levels of PFOS in skeletal muscle tissue, with muscle tissue concentrations ranging from <DL to 2.5 ng/g. PFOS was detected in eight of the ten samples of heart tissue. The PFAS 6:2 FTS was detected in all ten heart samples, but all samples had recovery exceedances for the EIS ranging from 210 to 389%. The only other PFAS detected in heart samples were PFNA and PFDA, but only in one deer sample and at levels substantially lower than PFOS (Table 4).

Table 4. PFAS detected in deer heart tissue in ten deer from fall 2022.

					Percentiles			
PFAS	N	% Detection	Min	Max	50th	75th	90th	95th
PFNA	10	10%	< DL	0.69	< DL	< DL	0.23	0.46
PFDA	10	10%	< DL	1.68	< DL	< DL	0.34	1.01
PFOS	10	80%	< DL	5.67	0.45	0.50	4.19	4.93
6:2 FTS	10	100%	2.66	4.43	3.26	3.49	3.74	4.08

DL = Detection Limit.

The ratio of heart PFOS to muscle PFOS was highly variable. For the six deer that had detectable levels of PFOS in both the heart and skeletal muscle tissue, the ratio of heart PFOS to muscle PFOS ranged from 0.17 to 17.15, with a mean of 4.23 ± 6.37.

4.3 Spatial Patterns in Deer PFOS Tissue Concentrations

Figure 9 shows the locations of collected deer and PFOS concentrations of deer tissue samples collected in fall 2021 and fall 2022. The spatial pattern of PFOS tissue results from the 68 total deer collected in the Fairfield area shows a clustering of deer with elevated PFOS tissue levels on the Eastern side of Route 104. Deer collected in close proximity to fields with higher PFOS soil levels (> 200 ng/g) were much more likely to have markedly elevated tissue PFOS levels (> 20 ng/g) as compared to deer that were not collected in close proximity to fields with high soil PFOS levels (Figure 2).

Using readily identifiable land features such as roads and the Kennebec River, a boundary can be drawn around the cluster of deer with muscle tissue PFOS levels greater than 1 ng/g (Figure 9). The area shown in Figure 9 is approximately 25 square miles. The Kaplan-Meier mean muscle tissue PFOS concentration for deer inside the demarcated area is 20.23 ng/g with a 95th upper confidence limit on the mean of 26.54 ng/g.[7] Table 5 shows the summary statistics for the PFOS tissue levels of deer inside and outside this demarcated area.

[7] Upper confidence limits (UCLs) were calculated using proUCL with the Kaplan-Meier method for estimating non-detects. UCLs presented in the text are the recommended UCLs based on the apparent distribution of the data.

Figure 9. Deer muscle tissue sample locations and PFOS concentrations.

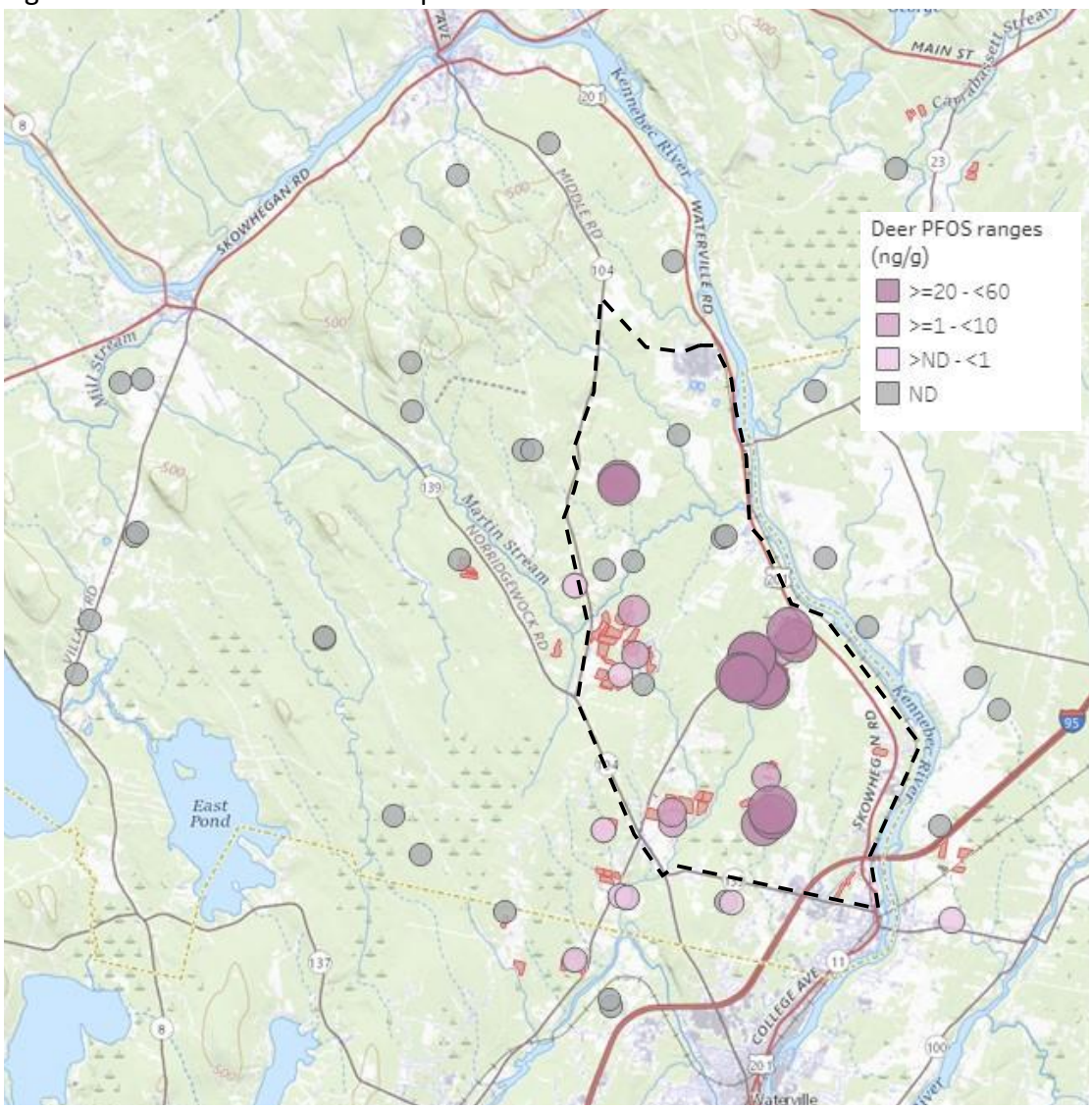


Table 5. Summary statistics for PFOS muscle tissue concentrations in deer by area.

					Percentiles			
	N	% Detection	Min	Max	50th	75th	90th	95th
Inside Area	26	80%	< DL	54.30	23.40	39.00	43.00	43.73
Outside Area	42	21%	< DL	0.84	< DL	< DL	0.27	0.32

DL = Detection Limit.

4.4 Turkey Tissue Results

A total of 82 turkeys were collected in 2022. Muscle (breast) tissue was analyzed for all 82 turkeys. Liver tissue was only collected from the 11 winter 2022 turkeys. Results for all PFAS analyzed in all 82 turkeys collected in 2022 are included in Appendix B.

4.4.1 Muscle Tissue

PFOS was detected in the muscle tissue of 53 of the 82 turkeys sampled in 2022. In most turkey muscle tissue samples PFOS was the predominant PFAS detected and was the PFAS detected most often (Figure 10). In two birds, the PFAS fluorotelomer precursor called 8:2 FTS was the predominant PFAS detected in muscle tissue. In four other birds, 8:2 FTS was the second most predominant PFAS in muscle tissue, and in total 8:2 FTS was detected in 14 of the 82 birds. Other PFAS detected at generally low levels as compared to PFOS include PFNA, PFDA, pFUnA, PFDoA, PFTrDA, PFTeDA, and 6:2 FTS and rarely NetFOSAA, PFBS, PFDS, PFHxS, PFHpS, PFOA, and PFPeS (Table 6).

Figure 10. Concentrations of PFAS detected in turkey muscle tissue.

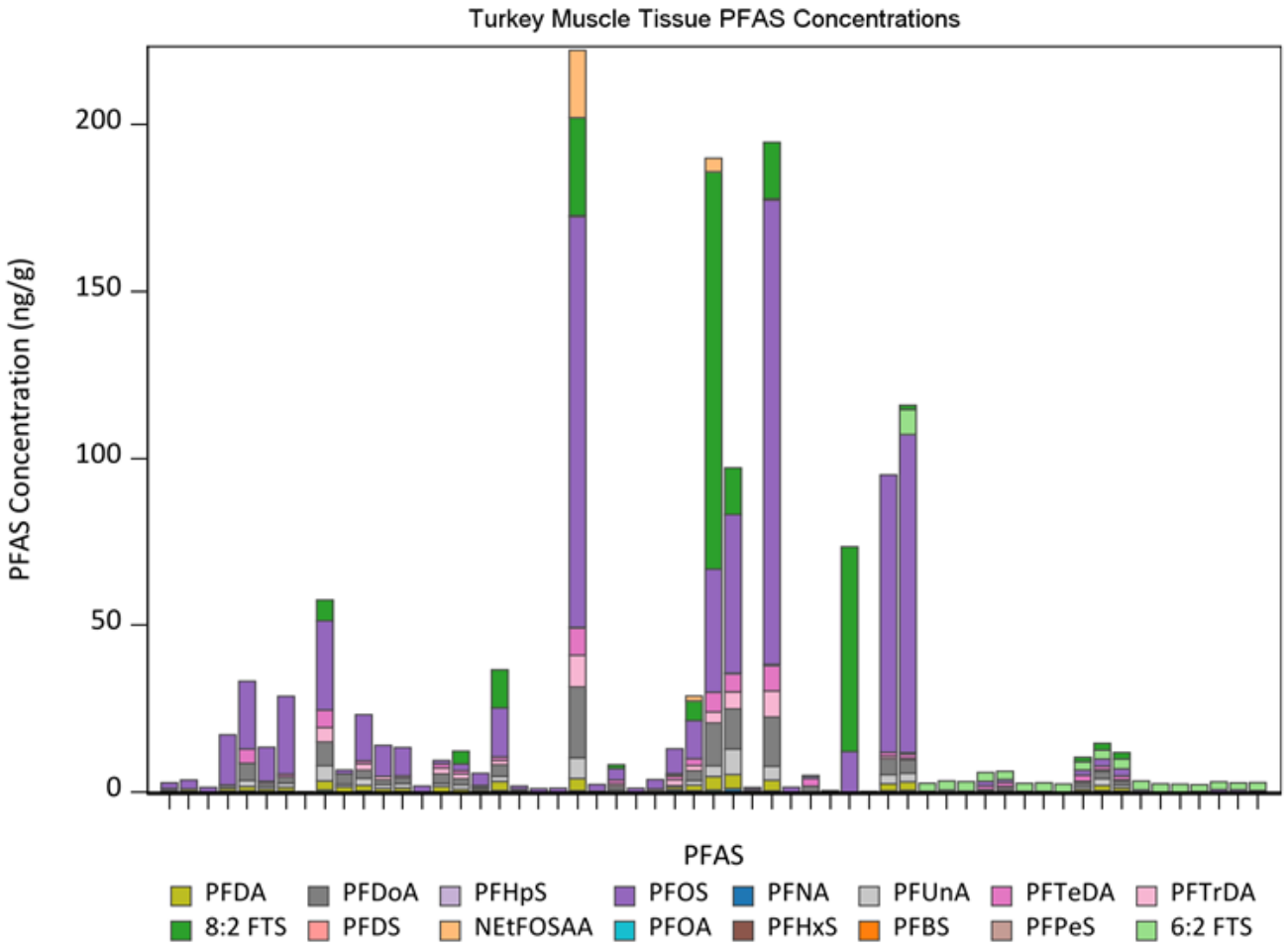


Table 6. PFAS detected in turkey muscle tissue.

					Percentiles			
PFAS	N	% Detection	Min	Max	50th	75th	90th	95th
PFOA	82	4%	< DL	0.25	< DL	< DL	< DL	< DL
PFNA	82	32%	< DL	0.96	< DL	0.21	0.44	0.54
PFDA	82	34%	< DL	4.17	< DL	0.77	1.70	2.73
PFUnA	82	33%	< DL	7.65	< DL	0.71	2.04	3.20
PFDoA	82	38%	< DL	21.2.	< DL	1.09	3.40	7.00
PFTrDA	82	28%	< DL	9.51	< DL	0.33	1.59	3.25
PFTeDA	82	28%	< DL	8.15	< DL	0.84	1.79	5.20
PFBS	82	1%	< DL	0.17	< DL	< DL	< DL	< DL
PFPeS	82	1%	< DL	0.29	< DL	< DL	< DL	< DL
PFHxS	82	2%	< DL	0.36	< DL	< DL	< DL	< DL
PFHpS	82	9%	< DL	0.49	< DL	< DL	< DL	0.17
PFOS	82	65%	< DL	139.00	0.75	2.78	19.77	46.97
PFDS	82	2%	< DL	0.44	< DL	< DL	< DL	< DL
6:2 FTS	82	24%	< DL	7.49	< DL	< DL	2.52	2.68
8:2 FTS	82	17%	< DL	119.00	< DL	< DL	3.63	13.87
NEtFOSAA	82	4%	< DL	20.20	< DL	< DL	< DL	< DL

DL = Detection Limit.

The 53 turkeys with detectable levels of PFOS in muscle tissue include a mix of male and female adults, juveniles, and poults. Due to differences in season and location of turkey sampling, direct comparisons of differences in PFOS levels based on sex or age or season are not possible. The two birds with muscle tissue PFOS levels greater than 100 ng/g were both adult males. The birds with the next highest PFOS muscle tissue concentrations were a male and a female poult with PFOS concentrations of 83.1 and 95.3 ng/g, respectively.

4.4.2 Liver Tissue

Turkey liver tissue was only sampled in the 11 birds collected in winter 2022. PFOS was detected in all but one liver tissue sample. PFDA, PFUnA, PFDoA, PFTrDA, and PFTeDA were detected in all 11 liver tissue samples, but overall represented a small percentage of total PFAS as compared to PFOS when there were detectable levels of PFOS (Figure 11). Other PFAS detected include PFNA, PFHxS, PFHpS, and 8:2 FTS (Table 7). The detailed results for all turkey liver sampling can be found in Appendix B.

Figure 11. Concentrations of PFAS detected in turkey liver tissue.

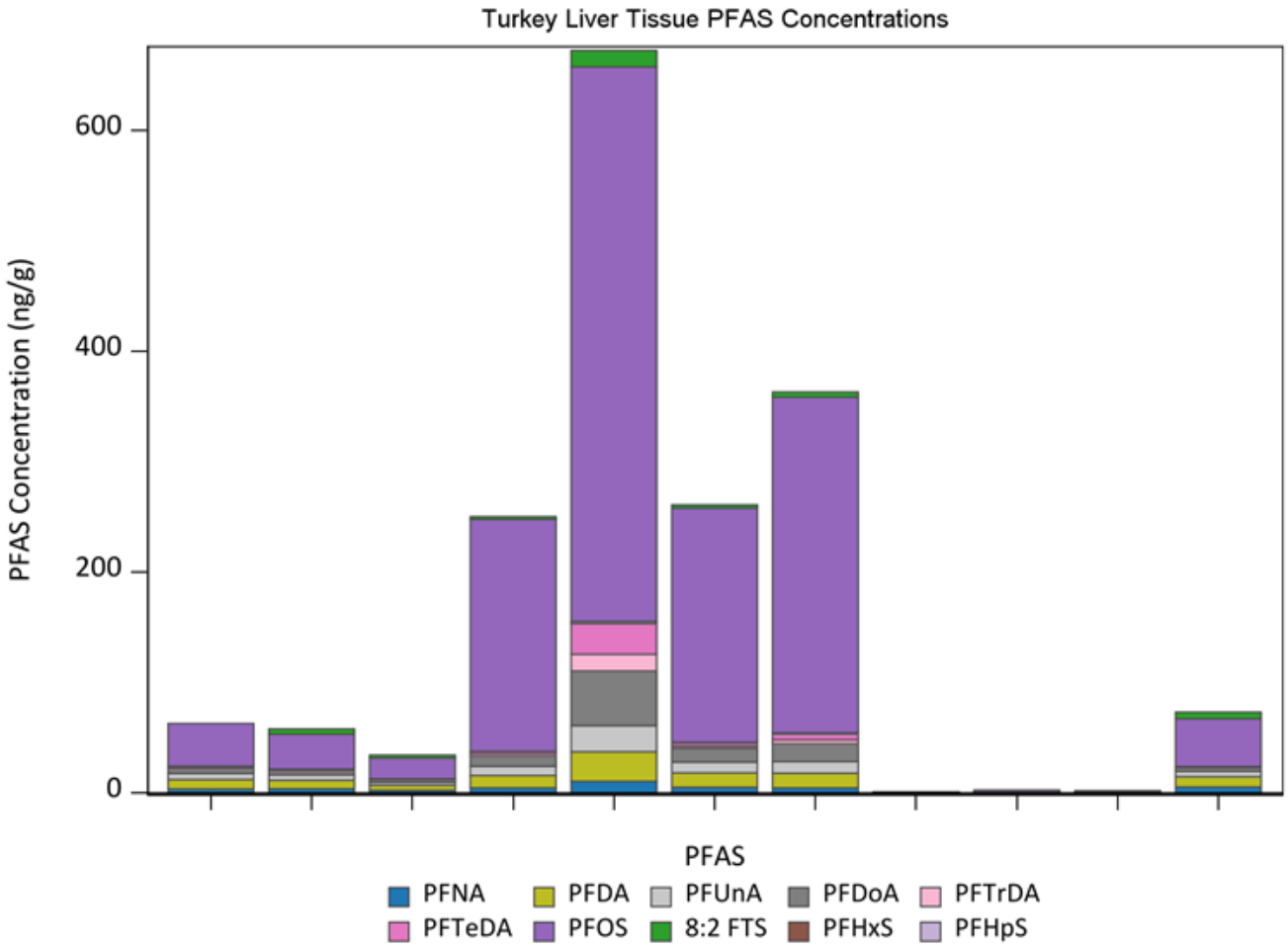


Table 7. PFAS detected in turkey liver tissue.

					Percentiles			
PFAS	N	% Detection	Min	Max	50th	75th	90th	95th
PFNA	11	73%	< DL	10.60	3.84	4.95	5.46	8.03
PFDA	11	100%	0.11	26.70	8.52	12.05	13.30	20.00
PFUnA	11	100%	0.25	23.70	4.91	9.11	10.50	17.10
PFDoA	11	100%	0.10	49.40	3.63	10.75	16.10	32.75
PFTrDA	11	100%	0.11	15.20	0.66	2.17	3.55	9.38
PFTeDA	11	100%	0.16	27.70	0.94	2.45	5.34	16.52
PFHxS	11	9%	< DL	0.23	< DL	< DL	< DL	< DL
PFHpS	11	27%	< DL	1.90	< DL	0.49	0.98	1.44
PFOS	11	91%	< DL	502.00	38.70	211.00	304.00	403.00
8:2 FTS	11	64%	< DL	15.00	2.63	4.80	6.02	10.51

DL = Detection Limit.

The ratio of liver PFOS to muscle PFOS in turkeys was less variable than what was observed in deer. For the ten turkeys that had detectable levels of PFOS in both the liver and muscle tissue, the ratio of liver PFOS to muscle PFOS ranged from 11.75 to 24.73, with a mean of 17.2 ± 5.35. Though the turkey liver to muscle ratio is substantially less variable than observed for the deer liver to muscle ratio, the available turkey data is only for birds collected in the winter and it is not known to what extent the ratio would change for birds collected in the spring or fall when PFAS exposure could be different than the winter months.

4.5 Spatial Trends in PFOS Tissue Concentrations

Figure 12 shows the locations and PFOS concentrations of turkey samples collected throughout 2022. The spatial pattern of PFOS tissue results from 82 turkey samples collected in the Fairfield area shows a clustering of turkey samples with elevated PFOS tissue levels on the Eastern side of Route 104, similar to that seen for deer. Also similar to the observation with deer tissue, the clustering pattern for turkey tissue with PFOS levels >20 ng/g was in close proximity to fields with PFOS soil levels (>200 ng/g). Within the demarcated area (Figure 12) the Kaplan-Meier mean PFOS muscle tissue concentration in turkey was 24.07 ng/g with a 95th upper confidence limit on the mean of 43.66 ng/g.[8] Table 8 shows the summary statistics for the PFOS tissue levels of turkey collected inside and outside this demarcated area.

[8] Upper confidence limits (UCLs) were calculated using proUCL with the Kaplan-Meier method for estimating non-detects. UCLs presented in the text are the recommended UCLs based on the apparent distribution of the data.

Figure 12. Turkey muscle tissue sample locations and PFOS concentrations.

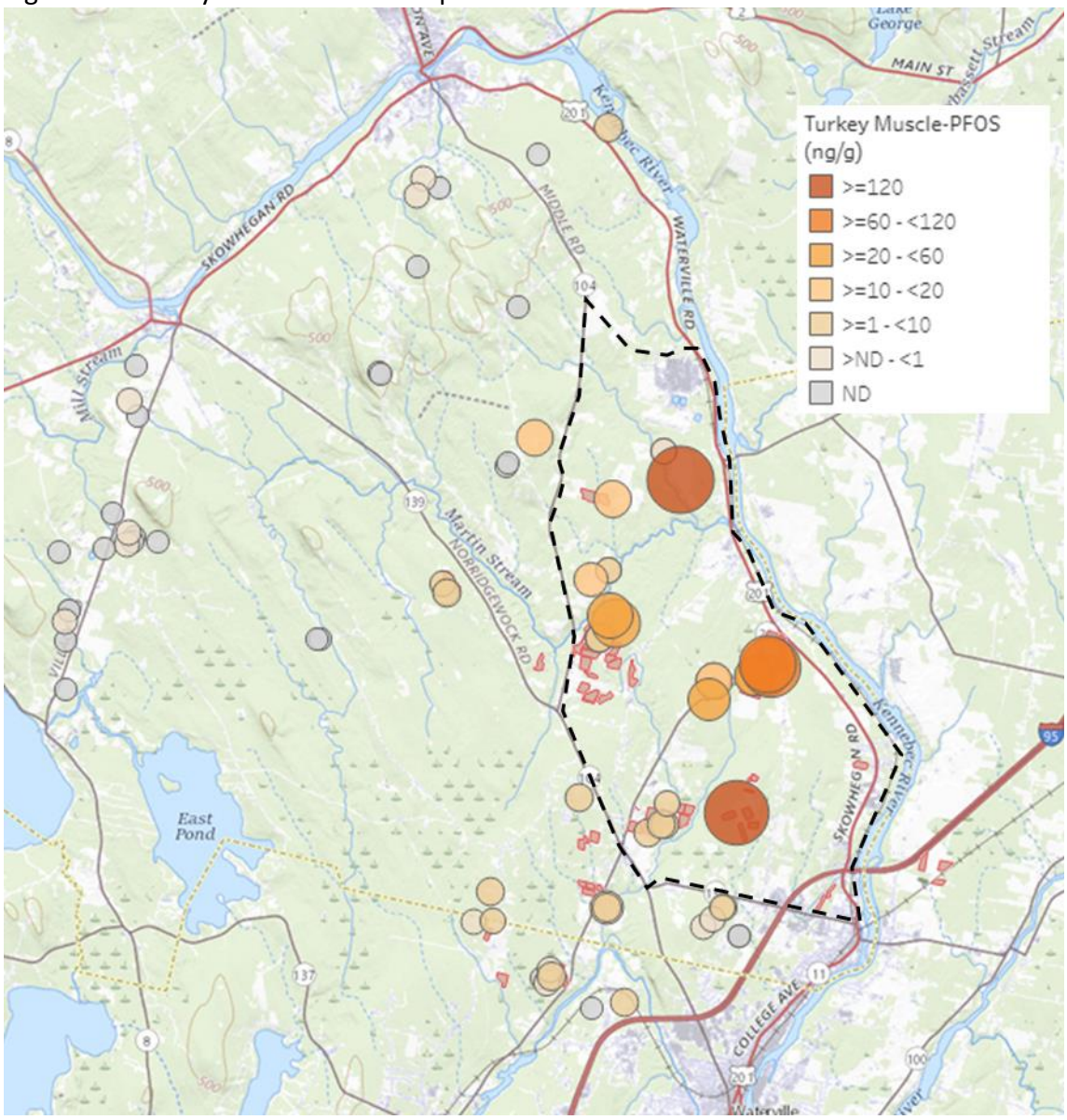


Table 8. Summary statistics for PFOS muscle tissue concentrations in turkey by area.

					Percentiles			
	N	% Detection	Min	Max	50th	75th	90th	95th
Inside Demarcated Area	29	97%	< DL	139.00	9.31	23.30	85.54	111.90
Outside Demarcated Area	53	47%	< DL	12.20	< DL	0.77	1.99	3.13

DL = Detection Limit.

While all the turkeys with PFOS tissue levels >20 ng/g fell within the demarcated area, unlike deer there were several turkeys >1 ng/g that also fell outside of the area. Eleven of the 53 turkeys collected outside the area had PFOS tissue concentrations >1 ng/g (Figure 12).

5 Assessment of an Updated PFOS Consumption Advisory for Wildlife

To assess the need for an updated consumption advisory, Maine CDC followed standard EPA risk assessment methods, as described in the 2022 deer advisory report (Maine CDC 2022) and described in detail in Appendix D. Briefly, Maine CDC applied general EPA risk assessment methodology (EPA 2000) to estimate the number of yearly meals of venison and wild turkey adults and young children (aged 1 to 6) could consume without exceeding the U.S. Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Level (MRL) for PFOS, and accounting for background exposure to PFOS estimated from typical serum PFOS levels in the U.S. population. Table 9 illustrates the relationship between tissue PFOS concentrations and associated consumption advice assuming a meal size of 8 oz for an adult and 3 oz for a young child.

Table 9. Levels of PFOS in tissue and corresponding meal advice categories.

Meal Consumption Rate	**Adult 8oz Meal Consumption and Corresponding Measured PFOS Muscle Level (ng/g)**	**Child 3oz Meal Consumption and Corresponding Measured PFOS Muscle Level (ng/g)**
Unlimited	Non-detect (ND)	Non-detect (ND)
1 meal per week	3.5	1.7
24 meals per year	7.5	3.75
12 meals per year	15	7.5
6 meals per year	30	15
3 meals per year	60	30
1 meal per year	180	90

Using these same methods, Maine CDC calculated meal advice based on the summary statistics of PFOS tissue levels for deer and turkey muscle tissue concentrations inside and outside the 25 square mile area from Table 5 and Table 8 that encompasses most of the wildlife with elevated tissue levels. Those estimates are presented in Table 10 as the number of deer or turkey meals per month a child or adult can consume without exceeding the PFOS toxicity value developed by ATSDR of 2 ng/kg/day. For inside the 25-mile square area, a consumption advisory of just a few meals per year would be warranted at the 50th percentile PFOS concentration for deer and at the 75th percentile concentration for turkey.

Table 10. Summary statistics and consumption advice for deer and turkey in the Fairfield area.

Inside Demarcated Area

Species	Percentile	PFOS Concentration (ng/g)	Adult Consumption (meals per year)	Child Consumption (meals per year)
Deer	50th	23.40	8	4
	75th	39.00	5	2
	90th	43.00	4	2
Turkey	50th	9.31	19	10
	75th	23.30	8	4
	90th	85.54	2	1

Outside Demarcated Area

Species	Percentile	PFOS Concentration (ng/g)	Adult Consumption (meals per year)	Child Consumption (meals per year)
Deer	50th	< DL	NC	NC
	75th	< DL	NC	NC
	90th	0.27	688	334
Turkey	50th	< DL	NC	NC
	75th	0.77	234	117
	90th	1.99	91	45

DL = Detection Limit. NC = Not Calculated.

Deer with elevated muscle tissue PFOS levels that would warrant consumption advice were spatially localized to the demarcated area highlighted in Figure 9. Elevated PFOS in turkey tissues were localized similarly to deer, however a few birds with elevated PFOS tissue levels (3.5 to 12 ng/g) were identified outside the 25-mile square area. As with deer, PFOS was the predominant PFAS present in tissues but several birds had appreciable levels of the PFAS precursor 8:2 FTS, including one bird outside the 25 mile square area (61 ng/g) and two birds inside the area that had high levels of this fluorotelomer sulfonate (29 and 119 ng/g). Little is known about the toxicity of 8:2 FTS or its toxicokinetics in wildlife, but this PFAS has been detected in soils from farm fields in this area and has been shown to move from soil into plants (Simones et al., manuscript in preparation) and from soils to chicken eggs (Maine CDC unpublished data). It was also more common to detect longer-chain perfluoroalkyl carboxylates (chain length of 11 – 14 carbons) in turkey tissue than in deer and this may be suggestive of a more direct soil related pathway. Nonetheless, at present, PFOS remains the most important PFAS contaminant in turkey tissue for the development of consumption advisory based on currently available toxicity

information. There is both a spring and fall hunting season, and while samples were collected in May and in October, additional differences in age of birds (adults vs poults), gender, and location (inside vs outside the cluster area) make seasonal comparisons difficult.

6 Revised Consumption Advisory

In April 2023, MDIFW, in conjunction with Maine CDC, reduced the size of the original 2021 Do Not Eat Advisory for deer by 80%, from ~125 square miles to ~25 square miles, and wild turkey were added to the advisory. The size of the area was reduced based on the expanded sampling of deer and turkeys collected throughout and just outside the 2021 Do Not Eat Advisory Area. The boundaries of the revised Do Not Eat advisory area were defined using readily identifiable land features such as roads or waterways that encompassed the area where most deer and turkeys with elevated muscle tissue PFOS levels were collected. The advice to not eat deer or turkey within that area was based on the Maine CDC risk assessment analyses that at the 50th percentile deer muscle tissue PFOS concentration and the 75th percentile turkey muscle tissue PFOS concentration within the revised advisory area would result in a recommended consumption rate of only a few meals per year for adults and children (Table 10).

The revised advisory area (Figure 1) extends from the center of Fairfield, where Bridge Street (Route 11/100/139) crosses the Kennebec River traveling upriver into Skowhegan, then travels west across the land from the Kennebec River to where the Varney Road terminates at Waterville Road (Route 201), then west on Varney Road until it intersects with Middle Road (Route 104), then south on Middle Road (Route 104) until it intersects with Norridgewock Road (Route 104/139), then southeast on Norridgewock Road (Route 104/139) until it intersects Center Road (Route 139), then east on Center Road (Route 139) / Western Avenue (Route 139) until it intersects with Main Street (Route 201/139), then south on Main Street (Route 201/139) until it intersects with Bridge Street (Route 11/100/139), then east on Bridge Street (Route 11/100/139) to the point of origin with the Kennebec River on Bridge Street (Route 11/100/139) in Fairfield.

The consumption advisory and supporting information were provided to the public via an MDIFW press release prior to the 2023 spring wild turkey hunting season. Targeted emails were sent to all 2022 licensed hunters and to all hunters that had already harvested a deer in a town impacted by the consumption advisory. Landowners of properties from which deer and turkey were sampled were contacted by phone regarding their wildlife PFAS results. The MDIFW PFAS website page, including frequently asked questions about PFAS, and the revised 2023 advisory map was updated. The dedicated email address for PFAS-related inquiries was monitored to handle the bulk of PFAS-related questions and information requests. An MDIFW staff meeting was held to ensure consistent messaging and knowledge of proper contacts for PFAS-related inquiries.

7 References

[ATSDR] Agency for Toxic Substances and Disease Registry. 2021. Toxicological profile for Perfluoroalkyls. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service. https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

Bangma, J., McCord, J., Giffard, N., Buckman, K., Petali, J., Chen, C., Amparo, D., Turpin, B., Morrison, G., Strynar, M. 2023. Analytical method interferences for perfluoropentanoic acid (PFPeA) and perfluorobutanoic acid (PFBA) in biological and environmental samples. Chemosphere. 315:137722.

Genualdi, S., Young, W., DeJager, L., Begley, T. 2021. Method Development and Validation of Per- and Polyfluoroalkyl Substances in Foods from FDA's Total Diet Study Program. J. Agric. Food Chem, 69: 5599-5606.

[Maine CDC] Maine Center for Disease Control and Prevention. 2017. Action levels for PFOS in cow's milk. Memorandum to the Department of Agriculture, Conservation and Forestry. March 28, 2017. https://www.maine.gov/dep/spills/topics/pfas/Derivation-of-Action-Levels-for-PFOS-in-Cows-Milk-03.28.17.pdf

[Maine CDC] Maine Center for Disease Control and Prevention. 2020. Action levels for PFOS in beef for use in determining whether beef at a farm is adulterated. Memorandum to the Department of Agriculture, Conservation and Forestry. August 24, 2020. https://www.maine.gov/dep/spills/topics/pfas/PFOS-Action-Levels-for-Beef-Derivation-Memo-08.04.20.pdf

[Maine CDC] Maine Center for Disease Control and Prevention. 2022. PFAS in Deer Harvested in the Fairfield Area, Maine – Fall 2021 Targeted Sampling and Advisory Summary Report. February 8, 2022. https://www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/documents/MainePFASDeerStudyReport2.8.22_FINAL.pdf

[EPA] U.S. Environmental Protection Agency. 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories: Volume 2 Risk Assessment and Fish Consumption Limits: Second Edition. Washington, DC: Office of Water. EPA 823-B-97-008.

[EPA] U.S. Environmental Protection Agency. 2023. 4th Draft Method 1633. Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. Washington, DC: Office of Water. EPA 821-D-23-001.

Appendix A – Names, Abbreviations, and CAS Registry Numbers for Analyzed PFAS.

Analyte	Common Abbreviation[1]	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA (PFUnDA)	2058-94-8
Perfluorododecanoic acid	PFDoA (PFDoDA)	307-55-1
Perfluorotridecanoic acid	PFTrDA (PFTriA)	72629-94-8
Perfluorotetradecanoic acid	PFTeDA (PFTA)	376-06-7
Perfluoroalkyl sulfonic acids		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroundecanesulfonic acid[2]	PFUnS (PFUnDS)	749786-16-1
Perfluorododecanesulfonic acid	PFDoS (PFDoDS)	79780-39-5
Perfluorotridecanesulfonic acid[2]	PFTrDS (PFTRiS)	791563-89-8
Fluorotelomer sulfonic acids		
1H, 1H, 2H, 2H-Perfluorohexane sulfonate	4:2 FTS	757124-72-4
1H, 1H, 2H, 2H-Perfluorooctane sulfonate	6:2 FTS	27619-97-2
1H, 1H, 2H, 2H-Perfluorodecane sulfonate	8:2 FTS	39108-34-4
1H, 1H, 2H, 2H-Perfluorododecane sulfonate[2]	10:2 FTS	108026-35-3
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA (FOSA)	754-91-6

Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9

[1]Maine CDC follows the abbreviations listed in the U.S. EPA's 3rd Draft Method 1633 for the Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS (Dec. 2022). For PFAS that have common alternative abbreviations, the alternative is listed in parentheses.
[2]Not included as target analytes in U.S. EPA's Draft Method 1633 but have been included in recent FDA PFAS analyses.

Appendix B – 2022 Deer and Turkey Tissue Results for all PFAS Measured.

Table B1. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD1	WSFD2	WSFD3	WSFD4	WSFD5	WSFD6	WSFD7	WSFD8	WSFD9	WSFD10
Age, Sex			Adult, Female	Adult, Female	Fawn, Female	Adult, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	**MDL[a]**	**LOQ[b]**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	3.04	2.02	< MDL	13.8	1.45	1.11	1.76	4.26	3.49	1.38
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.861	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	0.219 (J)	0.263 (J)	< MDL	< MDL	0.278 (J)	< MDL	< MDL	2.54	1.72	0.235 (J)
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.997 (J)	< MDL
6:2 FTS	0.41	1.61	13.1 (B)	160	11.8 (B)	6.62 (B)	12.7 (B)	13.6 (B)	10.9 (B)	7.61 (B)	34.5 (B)	36.6 (B)
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ). (B) qualified results indicate that the analyte was detected in the Procedural Blank above 1/2 the LOQ and was found in the sample at a concentration <10x the level found in the Procedural Blank.

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B1 cont. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD11	WSFD12	WSFD13	WSFD14	WSFD15	WSFD16	WSFD17	WSFD18	WSFD19	WSFD20
Age, Sex			Fawn, Male	Adult, Male	Adult, Male	Adult, Female	Fawn, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	**MDL**	**RL**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	1.13	< MDL	0.566 (J)	2.56	1.42	1.82	1.49	2.43	5.18	1.36
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	0.993	< MDL	1.08	1.25	1.43	1.85	1.01	1.31	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	0.228 (J)	25	43.8	30.3	27.3	39.7	54.3	35	23.1	0.397 (J)
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	27.8 (B)	14.2 (B)	11.5 (B)	24.4 (B)	5.75 (B)	13.3 (B)	< MDL	11.2 (B)	6.59 (B)	14.3 (B)
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ). (B) qualified results indicate that the analyte was detected in the Procedural Blank above 1/2 the LOQ and was found in the sample at a concentration <10x the level found in the Procedural Blank.

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B1 cont. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD21	WSFD22	WSFD23	WSFD24	WSFD25	WSFD26	WSFD27	WSFD28	WSFD29	WSFD30
Age, Sex			Adult, Female	Adult, Female	Adult, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Male	Adult, Female	Adult, Female
PFAS	**MDL**	**RL**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	0.303 (J)	1.26	2.86	0.631 (J)	0.36 (J)	0.753 (J)	0.706 (J)	0.897	1.3	1.03
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	0.7	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	0.317 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	3.53	2.66	4.55	3.06	2.31	2.58	5.38	2.91	3.21
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B1 cont. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD31	WSFD32	WSFD33	WSFD34	WSFD35	WSFD36	WSFD37	WSFD38	WSFD39	WSFD40
Age, Sex			Adult, Female	Adult, Male	Adult, Female	Adult, Female	Fawn, Female	Adult, Female	Adult, Male	Adult, Female	Adult, Female	Adult, Female
PFAS	**MDL**	**RL**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	0.898	0.345 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	0.375 (J)	0.473 (J)	0.488 (J)
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	< MDL	5.15	< MDL	< MDL	23.7	< MDL	0.242 (J)	< MDL	< MDL	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	4.41	2.66	2.55	2.24	3.47	2.42	2.13	2.22	1.95	3.6
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B1 cont. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD41	WSFD42	WSFD43	WSFD44	WSFD45	WSFD46	WSFD47	WSFD48	WSFD49	WSFD50
Age, Sex			Fawn, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Male	Adult, Male	Adult, Male	Adult, Female	Adult, Female
PFAS	**MDL**	**RL**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	< MDL	< MDL	< MDL	0.838	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B1 cont. Fall 2022 Deer Hindquarter Muscle Tissue Results.

Sample ID			WSFD51	WSFD52	WSFD53	WSFD54	WSFD55	WSFD56	WSFD57	WSFD58	WSFD59	WSFD60
Age, Sex			Adult, Female	Male,	Adult, Male	Fawn, Male	Fawn, Female	Adult, Male	Adult, Female	Adult, Female	Adult, Male	Adult, Male
PFAS	**MDL**	**RL**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.269 (J)	< MDL	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B2. Fall 2022 Deer Tenderloin Muscle Tissue Results.

Sample ID			WSFD1	WSFD2	WSFD3	WSFD4	WSFD5	WSFD6	WSFD7	WSFD8	WSFD9	WSFD10
Age, Sex			Adult, Female	Adult, Female	Fawn, Female	Adult, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	**MDL[a]**	**LOQ[b]**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	2.43	1.68	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B2 cont. Fall 2022 Deer Tenderloin Muscle Tissue Results.

Sample ID			WSFD11	WSFD12	WSFD13	WSFD14	WSFD15	WSFD16	WSFD17	WSFD18	WSFD19	WSFD20	WSFD21
Age, Sex			Fawn, Male	Adult, Male	Adult, Male	Adult, Female	Fawn, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	**MDL[a]**	**LOQ[b]**	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	2.46
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	2.52	< MDL	1.47	1.81	1.69	1.19	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	< MDL	22	49.7	53.9	35.6	50.6	50.4	36	31.4	0.384 (J)	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	2.77
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.399	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B3. Fall 2022 Deer Liver Tissue Results.

Sample ID			WSFD1	WSFD2	WSFD3	WSFD4	WSFD5	WSFD6	WSFD7	WSFD8	WSFD9	WSFD10
Age, Sex			Adult, Female	Adult, Female	Fawn, Female	Adult, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	6.47	7.41	< MDL
PFDA	0.19	0.40	< MDL	< MDL	0.808	< MDL	< MDL	< MDL	< MDL	27.1	23	0.399 (J)
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	4.54	10.3	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.629	2.81	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	4.78[c]	10[c]	14.3	9.59	7.8	14.1	20.1	7.67	2.75	150	94.3	17.8
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	0.728 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	2.28	5.05	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

c. The highest reported MDL and LOQs are from a dilution run (the concentration of PFOS in the sample was outside the initial calibration range of the laboratory instrumentation), and the MDL/LOQ were adjusted upwards by the dilution factor (25x). The MDL and LOQ in the undiluted runs of deer liver tissue were approximately 0.19 and 0.40, respectively.

Table B3 cont. Fall 2022 Deer Liver Tissue Results.

Sample ID			WSFD11	WSFD12	WSFD13	WSFD14	WSFD15	WSFD16	WSFD17	WSFD18	WSFD19	WSFD20
Age, Sex			Fawn, Male	Adult, Male	Adult, Male	Adult, Female	Fawn, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	24.2	32.9	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	1.13	5.06	4.25	2.44	3.62	3.38	2.18	4.94	1.52
PFDA	0.19	0.40	< MDL	28.1	41.5	50.7	36.9	45.4	65.5	40.8	61	15.3
PFUnA	0.15	0.40	< MDL	6.22	4.54	4.71	5.56	7.73	11.6	7.29	6.13	2.74
PFDoA	0.12	0.40	< MDL	2.58	3.11	2.08	4.24	3.36	3.53	2.83	2.78	0.737
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	3.04	3.34	2.64	< MDL	< MDL
PFOS	4.78[c]	10[c]	3.78	508	787	876	498	938	1260	684	714	15.8
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	1.68	2.03	1.05 (J)	4.56	6.82	6.03	2.95	27.4	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.761	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

c. The highest reported MDL and LOQs are from a dilution run (the concentration of PFOS in the sample was outside the initial calibration range of the laboratory instrumentation), and the MDL/LOQ were adjusted upwards by the dilution factor (25x). The MDL and LOQ in the undiluted runs of deer liver tissue were approximately 0.19 and 0.40, respectively.

Table B3 cont. Fall 2022 Deer Liver Tissue Results.

Sample ID			WSFD21	WSFD22	WSFD28	WSFD31	WSFD36	WSFD38	WSFD40	WSFD42	WSFD43	WSFD44
Age, Sex			Adult, Female	Adult, Female	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Male	Adult, Female	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	0.998	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	8.78	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	6.25
PFDA	0.19	0.40	37	< MDL	0.558	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	18.1
PFUnA	0.15	0.40	5.3	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.84
PFDoA	0.12	0.40	1.53	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	4.78[c]	10[c]	23.6	1.36	9.48	1.53	2.07	1.92	1.98	2.84	2.25	68.3
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.40	1.61	1.09 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

c. The highest reported MDL and LOQs are from a dilution run (the concentration of PFOS in the sample was outside the initial calibration range of the laboratory instrumentation), and the MDL/LOQ were adjusted upwards by the dilution factor (25x). The MDL and LOQ in the undiluted runs of deer liver tissue were approximately 0.19 and 0.40, respectively.

Table B3 cont. Fall 2022 Deer Liver Tissue Results.

Sample ID			WSFD48	WSFD50	WSFD51	WSFD52	WSFD55	WSFD57	WSFD59	WSFD60
Age, Sex			Adult, Male	Adult, Female	Adult, Female	Male, Unknown	Fawn, Female	Adult, Female	Adult, Male	Adult, Male
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	0.553	< MDL	< MDL
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	4.78[c]	10[c]	2.3	3.43	2.05	1.71	4.91	1.07	1.91	22.2
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	0.712 (J)	< MDL	< MDL	0.723 (J)	< MDL	0.755 (J)	< MDL	< MDL
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

c. The highest reported MDL and LOQs are from a dilution run (the concentration of PFOS in the sample was outside the initial calibration range of the laboratory instrumentation), and the MDL/LOQ were adjusted upwards by the dilution factor (25x). The MDL and LOQ in the undiluted runs of deer liver tissue were approximately 0.19 and 0.40, respectively.

Table B4. Fall 2022 Deer Heart Tissue Results.

Sample ID			WSFD1	WSFD2	WSFD3	WSFD4	WSFD5	WSFD6	WSFD7	WSFD8	WSFD9	WSFD10
Age, Sex			Adult, Female	Adult, Female	Fawn, Female	Adult, Male	Adult, Male	Adult, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.693
PFDA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.68
PFUnA	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	0.491	0.473	0.423	< MDL	0.506	0.358 (J)	< MDL	5.67	0.288 (J)	4.03
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	4.43	3.66	2.95	3.14	2.66	3.28	3.42	3.51	3.23	2.83
8:2 FTS	0.40	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B5. Winter 2022 Turkey Muscle Tissue Results.

Sample ID			189669	189670	189671	189672	189673	189674	189675	189676	189677	189678	189679
Age, Sex			Juvenile, Male	Adult, Female	Juvenile, Female	Juvenile, Male	Juvenile, Male	Juvenile, Male	Juvenile, Male	Juvenile, Female	Juvenile, Male	Juvenile, Male	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.06	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.50	< MDL	0.3 (J)	< MDL	0.351 (J)	0.398 (J)	0.246 (J)	0.364 (J)	< MDL	< MDL	< MDL	0.178 (J)
PFDA	0.05	0.50	0.472 (J)	0.68	< MDL	0.87	1.3	0.772	1.09	< MDL	< MDL	< MDL	< MDL
PFUnA	0.04	0.50	< MDL	< MDL	< MDL	< MDL	1.8	0.743	1.27	< MDL	< MDL	< MDL	< MDL
PFDoA	0.08	0.50	0.52	< MDL	< MDL	0.974	5.15	1.18	1.92	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.12	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.03	0.50	< MDL	< MDL	< MDL	< MDL	4.3	0.337 (J)	0.796	< MDL	< MDL	< MDL	< MDL
PFBS	0.02	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.09	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.50	0.127 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.50	1.71	2.68	1.43	15	20.3	10.2	23.3	< MDL	< MDL	< MDL	< MDL
PFNS	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.16	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.04	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B6. Winter 2022 Turkey Liver Tissue Results.

Sample ID			189669	189670	189671	189672	189673	189674	189675	189676	189677	189678	189679
Age, Sex			Juvenile, Male	Adult, Female	Juvenile, Female	Juvenile, Male	Juvenile, Male	Juvenile, Male	Juvenile, Male	Juvenile, Female	Juvenile, Male	Juvenile, Male	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.06	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.50	3.65	3.84	2.46	4.69	10.6	5.21	4.64	< MDL	< MDL	< MDL	5.46
PFDA	0.05	0.50	8.52	7.7	4.53	11.1	26.7	13	13.3	0.234 (J)	0.109 (J)	0.12 (J)	9.26
PFUnA	0.04	0.50	5.65	4.91	2.68	8.45	23.7	9.77	10.5	0.341 (J)	0.25 (J)	0.293 (J)	4.79
PFDoA	0.08	0.50	4.44	3.63	2.13	8.99	49.4	12.5	16.1	0.139 (J)	0.161 (J)	0.101 (J)	3.16
PFTrDA	0.12	0.50	0.891	0.663	0.409 (J)	2.38	15.2	1.95	3.55	0.138 (J)	0.146 (J)	0.112 (J)	0.493 (J)
PFTeDA	0.03	0.50	1.12	0.943	0.577	2.19	27.7	2.71	5.34	0.215 (J)	0.191 (J)	0.156 (J)	0.723
PFBS	0.02	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.09	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	0.232 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.50	< MDL	< MDL	< MDL	< MDL	1.9	0.882	0.984	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.50	38.7	31.5	18.9	210	502	212	304	< MDL	1.83	1.33	43.3
PFNS	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.16	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.50	< MDL	4.88	2.63	2.46	15	2.89	4.71	< MDL	< MDL	< MDL	6.02
PFOSA	0.04	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.50	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B7. Spring 2022 Turkey Muscle Tissue Results.

Sample ID			FT1	FT2	FT3	FT4	FT5	FT6	FT7	FT8	FT9	FT10
Age, Sex			Adult, Male	Adult, Male	Adult, Male	Adult, Male	Adult, Female	Adult, Male	Juvenile, Female	Juvenile, Male	Adult, Male	Adult, Male
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.07	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.52	0.67	0.34 (J)	0.121 (J)	0.213 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.05	0.52	2.72	1.7	0.991	1.03	< MDL	< MDL	< MDL	1.69	0.89	1.56
PFUnA	0.04	0.52	4.55	2.14	1.15	1.34	< MDL	< MDL	< MDL	0.92	1.34	0.787
PFDoA	0.08	0.52	7.09	2.4	1.44	1.67	< MDL	< MDL	< MDL	2.83	1.78	3.13
PFTrDA	0.12	0.52	4.34	1.99	1.03	0.651	< MDL	< MDL	< MDL	1.8	1.45	< MDL
PFTeDA	0.03	0.52	5.25	0.853	< MDL	< MDL	< MDL	< MDL	< MDL	1.28	1.01	< MDL
PFBS	0.02	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.52	26.7	13.8	9.31	8.48	< MDL	1.85	< MDL	0.993	2.02	1.16
PFNS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.17	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.52	6.27	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	3.81	< MDL
PFOSA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B7 cont. Spring 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT11	WSFT12	WSFT13	WSFT14	WSFT15	WSFT16	WSFT17	WSFT18	WSFT19	WSFT21
Age, Sex			Juvenile, Female	Adult, Male	Adult, Male	Adult, Male	Adult, Male	Juvenile, Female	Adult, Female	Adult, Male	Juvenile, Male	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.07	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	0.247 (J)	< MDL	< MDL	0.155 (J)	< MDL	< MDL
PFNA	0.06	0.52	0.393 (J)	0.176 (J)	< MDL	0.0899 (J)	0.539	0.444 (J)	0.684	0.964	< MDL	< MDL
PFDA	0.05	0.52	0.558	< MDL	< MDL	< MDL	0.745	1.68	4	4.17	0.143 (J)	< MDL
PFUnA	0.04	0.52	0.485 (J)	0.607	< MDL	< MDL	0.437 (J)	1.35	3.23	7.65	0.111 (J)	< MDL
PFDoA	0.08	0.52	0.511 (J)	1.07	< MDL	0.804	< MDL	2.93	12.8	12	0.282 (J)	< MDL
PFTrDA	0.12	0.52	< MDL	0.675	< MDL	< MDL	1.74	1.6	3.32	5.1	0.341 (J)	< MDL
PFTeDA	0.03	0.52	< MDL	1.13	< MDL	< MDL	1.02	2.05	5.89	5.42	< MDL	< MDL
PFBS	0.02	0.52	< MDL	< MDL	< MDL	< MDL	0.0847 (J)	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	0.285 (J)	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.09	0.52	< MDL	< MDL	< MDL	0.0915 (J)	0.357 (J)	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.52	0.0956 (J)	< MDL	< MDL	< MDL	0.099 (J)	< MDL	< MDL	0.191 (J)	< MDL	< MDL
PFOS	0.05	0.52	3.62	3.45	1.18	2.81	7.45	11.4	36.9	47.5	0.531	< MDL
PFNS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.17	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.52	< MDL	1.12	< MDL	< MDL	< MDL	5.87	119	14	< MDL	< MDL
PFOSA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	1.49	4.06	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B7 cont. Spring 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT22	WSFT23	WSFT24	WSFT25	WSFT26	WSFT27	WSFT28	WSFT29	WSFT110	WSFT111
Age, Sex			Adult, Male	Juvenile, Female	Adult, Male	Adult, Female	Adult, Male	Adult, Female	Adult, Male	Adult, Male	Juvenile, Male	Juvenile, Male
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.07	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.48 (J)	< MDL
PFDA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	2.73	< MDL
PFUnA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.57	0.141 (J)
PFDoA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	3.43	0.332 (J)
PFTrDA	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.31	0.435 (J)
PFTeDA	0.03	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	1.06	< MDL
PFBS	0.02	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.52	< MDL	< MDL	12.2	< MDL	0.252 (J)	< MDL	< MDL	< MDL	14.7	0.945
PFNS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.17	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.52	< MDL	< MDL	61.3	< MDL	< MDL	< MDL	< MDL	< MDL	11.4	< MDL
PFOSA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B7 cont. Spring 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT112	WSFT113	WSFT114	WSFT115	WSFT116	WSFT117	WSFT118	WSFT119	WSFT210	WSFT211
Age, Sex			Adult, Female	Adult, Female	Adult, Male	Adult, Female	Adult, Male	Juvenile, Female	Adult, Female	Adult, Male	Juvenile, Male	Juvenile, Male
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.07	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.52	< MDL	< MDL	< MDL	0.0532 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.52	< MDL	< MDL	0.439 (J)	0.201 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.05	0.52	< MDL	< MDL	3.68	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.04	0.52	< MDL	< MDL	6.19	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.08	0.52	< MDL	< MDL	21.2	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.12	0.52	< MDL	< MDL	9.51	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.03	0.52	< MDL	< MDL	8.15	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.02	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.52	< MDL	< MDL	0.193 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.52	1.07	1.19	123	2.08	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.09	0.52	< MDL	< MDL	0.351 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.17	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.52	< MDL	< MDL	29.3	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.52	< MDL	< MDL	20.2	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B7 cont. Spring 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT212	WSFT213	WSFT214	WSFT215	WSFT216	WSFT217	WSFT218	WSFT219	WSFT220	WSFT221	WSFT222
Age, Sex			Adult, Female	Adult, Female	Adult, Male	Juvenile, Male	Juvenile, Male	Adult, Male	Juvenile, Female	Adult, Female	Adult, Female	Adult, Female	Adult, Male
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.06	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.07	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.05	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.06	0.52	< MDL	< MDL	0.399 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.05	0.52	< MDL	< MDL	3.22	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.04	0.52	< MDL	< MDL	4.19	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.08	0.52	< MDL	< MDL	14.7	< MDL	< MDL	< MDL	< MDL	1.78	< MDL	< MDL	< MDL
PFTrDA	0.12	0.52	< MDL	< MDL	7.81	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.03	0.52	< MDL	< MDL	7.58	< MDL	< MDL	< MDL	< MDL	2.35	< MDL	< MDL	< MDL
PFBS	0.02	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.09	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.09	0.52	< MDL	< MDL	0.406 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.05	0.52	< MDL	< MDL	139	< MDL	< MDL	1.47	< MDL	0.767	< MDL	< MDL	0.491 (J)
PFNS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.09	0.52	< MDL	< MDL	0.442 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.17	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.08	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.115 (J)	< MDL	< MDL	< MDL
8:2 FTS	0.04	0.52	< MDL	< MDL	16.9	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.04	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.11	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.16	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.12	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.10	0.52	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Department of Defense QSM method. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B8. Fall 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT52	WSFT53	WSFT54	WSFT55	WSFT56	WSFT57	WSFT58	WSFT59	WSFT60	WSFT61
Age, Sex			Poult, Male	Poult, Female	Adult, Male	Poult, Female	Adult, Male	Adult, Female	Adult, Female	Poult, Male	Adult, Female	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	0.406	0.573	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	2.1	2.54	< MDL	< MDL	< MDL	< MDL	0.284 (J)	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	2.71	2.57	< MDL	< MDL	< MDL	< MDL	0.311 (J)	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	4.78	3.95	< MDL	< MDL	< MDL	0.518	0.895	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	0.807	0.586	< MDL	< MDL	< MDL	0.285 (J)	0.237 (J)	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	1.14	1.13	< MDL	< MDL	< MDL	1.1	1.21	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	0.492	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	83.1	95.3	0.291 (J)	0.665	0.342 (J)	1.33	0.895	0.272 (J)	0.241 (J)	< MDL
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	< MDL	7.49	2.4	2.7	2.82	2.68	2.45	2.4	2.58	2.46
8:2 FTS	0.40	1.61	< MDL	1.25 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Table B8 cont. Fall 2022 Turkey Muscle Tissue Results.

Sample ID			WSFT62	WSFT63	WSFT64	WSFT65	WSFT66	WSFT67	WSFT68	WSFT69	WSFT70	WSFT71
Age, Sex			Adult, Female	Poult, Unknown	Adult, Male	Adult, Male	Poult, Unknown	Poult, Unknown	Poult, Unknown	Poult, Unknown	Poult, Unknown	Adult, Female
PFAS	MDL[a]	LOQ[b]	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.28	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.27	0.80	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.13	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFNA	0.18	0.40	0.337 (J)	0.438	0.352 (J)	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDA	0.19	0.40	0.657	1.56	0.927	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFUnA	0.15	0.40	0.833	2.07	0.917	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDoA	0.12	0.40	1.02	2.16	1.1	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDA	0.20	0.40	0.405	0.513	0.427	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTeDA	0.16	0.40	1.85	1.1	1.17	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFBS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.10	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.15	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOS	0.19	0.40	1.54	2.1	2.12	0.706	< MDL	< MDL	0.197 (J)	0.777	0.738	0.518
PFNS	0.20	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFDS	0.17	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2 FTS	0.66	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2 FTS	0.41	1.61	2.47	2.68	2.93	2.64	2.52	2.42	2.07	2.33	2.06	2.36
8:2 FTS	0.40	1.61	1.35 (J)	2.03	1.95	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOSA	0.08	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NMeFOSAA	0.18	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NEtFOSAA	0.19	0.40	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.58	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
ADONA	0.45	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF 3ONS	0.63	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF 3OUdS	0.60	1.61	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL

All results analyzed using Draft EPA Method 1633. (J) qualified results indicate the analyte was detected below the Limit of Quantitation (LOQ).

a. Method Detection Limit. Value reported in table corresponds to the highest reported MDL across all laboratory analyses.

b. Limit of Quantitation; often referred to as Reporting Limit. Value reported in table corresponds to the highest reported LOQ across all laboratory analyses.

Appendix C – Deer and Turkey Results from FDA's CFSAN Lab.

Sample ID		186993	186944	186995	186996	186997	186998	186999	187000	WSFD13	WSFD17	WSFD21	WSFD44	WSFD60	WSFT18	WSFT114	WSFT214	WSFT52	WSFT53
Species		Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Deer	Turkey	Turkey	Turkey	Turkey	Turkey
Season		Fall 2021	Fall 2021	Fall 2021	Fall 2021	Fall 2021	Fall 2021	Fall 2021	Fall 2021	Fall 2022	Fall 2022	Fall 2022	Fall 2022	Fall 2022	Spring 2022	Spring 2022	Spring 2022	Fall 2022	Fall 2022
		Tenderloin	Tenderloin	Tenderloin	Tenderloin	Tenderloin	Tenderloin	Tenderloin	Tenderloin	Hindquarter	Hindquarter	Liver	Liver	Liver	Muscle	Muscle	Muscle	Muscle	Muscle
PFAS	MDL	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)	(ng/g)
PFBA	0.345	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeA	0.207	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxA	0.030	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHpA	0.015	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.029	0.029	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFOA	0.015	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.081	0.055	0.935	0.400	< MDL	0.228	0.179	< MDL	0.068	0.055
PFNA	0.027	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.344	0.179	8.854	6.661	0.061	1.258	0.521	0.507	0.350	0.443
PFDA	0.023	< MDL	1.213	0.213	< MDL	1.048	0.563	0.449	0.974	2.180	1.979	38.884	17.591	1.001	5.486	3.420	3.549	2.214	2.957
PFUdA	0.017	< MDL	0.191	< MDL	< MDL	0.182	< MDL	< MDL	0.112	0.229	0.425	5.906	1.950	0.204	9.063	6.865	5.998	2.869	3.146
PFDoA	0.019	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.235	0.168	1.786	0.189	0.048	13.759	19.395	16.420	4.626	4.002
PFTrDA	0.043	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.099	< MDL	< MDL	3.186	5.130	5.029	0.777	0.777
PFTeDA	0.014	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.025	< MDL	0.061	< MDL	< MDL	6.345	9.251	9.515	0.900	0.980
PFBS	0.004	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFPeS	0.021	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFHxS	0.015	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.079	< MDL	0.067	0.046	0.072
PFHpS	0.011	< MDL	0.111	< MDL	< MDL	0.090	0.090	0.071	0.131	0.133	0.165	0.096	0.365	< MDL	0.223	0.167	0.629	0.301	0.437
PFOS	0.016	3.01	41.006	5.460	1.280	45.171	40.084	37.101	41.342	48.690	64.480	26.903	62.340	24.659	60.226	106.716	159.425	84.920	113.890
PFNS	0.010	NT	NT	NT	NT	NT	NT	NT	NT	< MDL	< MDL	< MDL	< MDL	< MDL	0.052	0.079	0.172	0.066	0.072
PFDS	0.009	NT	NT	NT	NT	NT	NT	NT	NT	< MDL	< MDL	0.035	< MDL	< MDL	0.175	0.201	0.660	0.138	0.165
PFUdS	0.016	NT	NT	NT	NT	NT	NT	NT	NT	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.065	< MDL	< MDL
PFDoS	0.013	NT	NT	NT	NT	NT	NT	NT	NT	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
PFTrDS	0.008	NT	NT	NT	NT	NT	NT	NT	NT	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
HFPO-DA	0.019	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
NaDONA	0.002	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
9Cl-PF3ONS	0.009	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
11Cl-PF3OUdS	0.022	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
4:2FTS	0.023	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL
6:2FTS	0.015	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.022	< MDL	< MDL	< MDL	< MDL	< MDL
8:2FTS	0.009	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.037	0.092	1.172	0.149	< MDL	30.404	33.144	19.347	1.327	1.328
10:2FTS	0.011	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	< MDL	0.113	0.209	0.408	0.069	< MDL	153.514	366.210*	134.136	7.735	4.885
PFOSA	0.031	NT	NT	NT	NT	NT	NT	NT	NT	0.056	0.102	< MDL	< MDL	< MDL	< MDL	2.328	< MDL	0.513	0.490

MDL = Method Detection Limit; NT = Not Tested. *Concentrations above the calibration curve. Values estimated assuming a linear calibration curve.

Appendix D - Meal Frequency Estimates.

To assess the need for a deer and/or turkey consumption advisory, Maine CDC developed population-specific (i.e., children and adults) risk calculations using the measured PFOS concentrations in muscle tissue following standard EPA risk assessment methods. Maine CDC used a slightly modified version of EPA's equation for the calculation of daily consumption limits in grams per day (EPA 2000). Maine CDC modified this equation by converting grams to meals using an assumed deer or turkey meal size (see below) and months to days. The general equation used to determine the number of deer or turkey meals is:

$$CR\ (meals/month) = \frac{RfD\ (ng/kg/day) \times BW\ (kg) \times 30.4\ (days/month)}{Meal\ size\ (g/meal) \times C_D\ (ng/g)} \times RSC \qquad (Equation\ 1)$$

Equation 1 calculates a consumption rate (CR), which is the maximum allowable consumption rate, expressed in meals per month. In Equation 1, the reference dose (RfD), measured in nanograms of PFOS per kg of body weight per day, is a toxicity value that provides an estimate of daily PFOS exposure below which there is likely to be minimal risk of any deleterious health effects. Body weight (BW) is a population-specific term that accounts for the body weight of the population of interest (i.e., young children or adults). Multiplying the RfD by BW results in a population specific daily PFOS exposure estimate. In the denominator of Equation 1, meal size is another population-specific term that accounts for the estimated deer or turkey meal size for either children or adults. The population-specific meal size is multiplied by the measured PFOS concentration in deer or turkey muscle tissue (C_D), which gives an estimated PFOS concentration per meal. The Relative Source Contribution (RSC) term in Equation 1 is a value used to account for additional background sources of PFOS to help ensure that the daily dose of PFOS from deer and other sources combined does not exceed the RfD. Specific values for the RfD, BW, meal size, and RSC, and the basis for their selection, are listed below in Table 11 and discussed in further detail in below.

Table 11. Inputs for consumption rate calculations in Equation 1.

Equation Parameter	Input Values for Adults	Input Values for Children	Units	Source
Reference Dose (RfD)	2	2	ng/kg/day	ATSDR MRL (2021)
Body Weight (BW)	80	15	kg	USEPA (2011)
Meal Size	8 (227)	3 (85)	oz (g)	Maine CDC (2020)
Relative Source Contribution (RSC)	0.7	0.7	Unitless	NHANES (2017-2018) Serum Levels

Reference Dose

In selecting an RfD, Maine CDC typically relies on toxicity values developed by federal agencies, e.g., the EPA or the Agency for Toxic Substances and Disease Registry (ATSDR). In May 2021, the ATSDR released their final Minimal Risk Levels (MRLs) for four PFAS, including PFOS (ATSDR, 2021). Similar to an RfD, an MRL is an estimate of the daily human exposure to a substance that is likely to be without appreciable risk of adverse health effects over a specified duration of exposure. The ATSDR's PFOS MRL is an "intermediate" MRL, meaning that the duration of exposure is assumed to be less than one year. This is appropriate for use in estimating yearly meal frequencies for the consumption of deer and turkey. The ATSDR's PFOS MRL is 2 ng/kg/day. EPA recently released their Maximum Contaminant Levels (MCLs) for public drinking water supplies for six PFAS, including PFOS. As a part of this assessment, EPA released an updated RfD for PFOS of 0.1 ng/kg/day. Maine CDC is reviewing this new RfD and is awaiting information from EPA on their applicability to consumption advisories for fish and game. In the interim Maine CDC will continue to rely on the 2 ng/kg/day MRL derived by the ATSDR.

Body Weight

Maine CDC developed separate risk estimates for adults and children to account for differences in bodyweight and meal size. EPA standard bodyweights were used for adults (80 kg) and young children aged 1 to <6 years old (15 kg) (USEPA 2011). These standard adult and child body weights are the weights used in both DEP and Maine CDC risk assessments.

Meal Size

Limited data are available for venison consumption rates or average meal sizes among consumers in the U.S. or in the state of Maine. In lieu of venison-specific meal sizes, Maine CDC used an 8 oz (227 g) meal size for adults, which is consistent with the meal size used in fish consumption advisories. For children Maine CDC assumed a 3 oz (85 g) meal size, which roughly equates to the 90th percentile beef consumption intake for a child aged 1 to 6 years (MECDC, 2020).

Relative Source Contribution

The purpose of the relative source contribution (RSC) factor is to account for additional PFOS exposure sources to ensure that the daily exposure from all sources does not exceed the RfD (USEPA 2000). It is clear from U.S. CDC biomonitoring programs that exposure to PFOS is ubiquitous, as it is present in the blood of most individuals tested in recent samplings of Americans 12 years and older (USCDC 2021). The presence of PFOS, as well as several other PFAS, in the general U.S. population is the result of exposure from multiple sources, including dietary sources, house dust, drinking water, and indoor and outdoor air (ATSDR 2021; Egeghy and Lorber 2011; Gebbnik et al. 2015; Trudel et al. 2008). PFOS levels measured in blood may also reflect some contribution of exposure to PFOS precursors that have undergone biotransformation to PFOS within the body (Gebbnik et al. 2015 and Vestergren et al. 2008). When there is no known exposure source, e.g., contaminated community drinking water, studies estimating daily PFOS exposures from various media suggest that the largest contributor to overall PFOS exposure is likely the diet for adults, and diet and house dust for young children (Egeghy and Lorber 2011; Tittlemier et al. 2007; Trudel et al. 2008). However, the magnitude and relative

contribution of these external daily exposure estimates from various individual sources, such as diet, indoor dust or drinking water, are uncertain and may not be entirely representative of current exposures for the general U.S. population.

A measured PFOS serum level in an individual represents a comprehensive exposure metric as serum integrates all external exposures and absorption from diet, water, hand-to-mouth activities, inhalation etc. Measured PFAS serum levels from U.S. CDC National Health and Nutrition Examinations Surveys (NHANES) biomonitoring studies, which are designed to be nationally representative of the general U.S. population, reflect exposure to PFAS, including PFOS, from all sources for the general population. Thus, measured PFAS serum levels from NHANES biomonitoring can be viewed as representative of background exposure for the general U.S. population and utilized to estimate an RSC factor.

To derive a PFOS-specific RSC factor using recent NHANES PFOS serum levels, Maine CDC utilized a one-compartment pharmacokinetic model (Equation C1). This is the same pharmacokinetic model EPA and ATSDR applied in their PFOS RfD and minimum risk level (MRL) derivations, respectively, to convert a dose on a serum level basis to an oral intake dose (USEPA 2016; ATSDR 2021). The pharmacokinetic model converts a measured serum to an oral equivalent dose, i.e., the ingested dose on a body weight basis that is required to result in the measured serum level.

$$Background\ exposure\ (ng/kg/day) = Cp \times kp \times Vd \qquad (Equation\ C1)$$

where:

Cp = PFOS serum concentration (4.25 ng/mL, NHANES 2017-2018 Total population geometric mean)

kp = first-order elimination rate (0.00056 day^{-1}, 1241-day half-life, Li et al. 2018)

Vd = volume of distribution (230 mL/kg-body weight adults, Thompson et al. 2010)

The calculated background PFOS exposure on a ng/kg/day basis using the geometric mean serum level of 4.25 ng/mL for the total population ages 12 years and older is 0.55 ng/kg/day. The geometric mean was selected to represent the central tendency PFOS serum level, as it is EPA guidance to use central tendencies for RSC intake estimates (USEPA 2000).

Considering this oral equivalent dose to represent average, general background PFOS exposure, the remaining dose which could be allocated to other sources is calculated by subtracting the background exposure from the 2 ng/kg/day PFOS RfD. Here the selected PFOS RfD is the ATSDR PFOS MRL. The RSC is derived by dividing the remaining dose by the PFOS RfD (Equation C2).

$$RSC = \frac{PFOS\ RfD\ (ng/kg/day) - Background\ exposure\ (ng/kg/day)}{PFOS\ RfD\ (ng/kg/day)} \times 100 \qquad (Equation\ C2)$$

Using the 0.55 ng/kg/day background exposure estimate in comparison to the ATSDR PFOS MRL of 2 ng/kg/day produces an RSC of 73%. The rounded value of 70% is used as the RSC for PFOS.

Given that there is also exposure to other PFAS, such as PFOA, PFNA, and PFHxS where there may be a potential for additive toxicities, RSC values were calculated for PFHxS, PFOA, and PFNA based on ATSDR MRLs and NHANES 2017-2018 geometric mean serum levels. Using a toxicity value-weighted approach, the sum of the average daily exposure to PFOS, PFOA, PFNA, and PFHxS results in an RSC of approximately 60%. The 60% RSC is largely dominated by PFOS and PFOA which have higher background serum levels than PFNA and PFHxS. As levels for these four PFAS have continued to decrease based on NHANES biomonitoring from 1999-2018, it's expected that current serum levels are lower than 2017-2018 years. Lower background serum levels would result in a calculated RSC of greater than 60%. The use of a 70% RSC for PFOS is therefore considered generally protective of potential additive effects of background exposure to other PFAS for which toxicity values and serum data are available.

References

ATSDR. 2021. Agency for Toxic Substances and Disease Registry. Toxicological profile for Perfluoroalkyls. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service. https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

Egeghy, P.P., and Lorber, M. 2011. An assessment of the exposure of Americans to perfluorooctane sulfonate: a comparison of estimated intake with values inferred from NHANES data. J Expo Sci Environ Epidemiol. 21(2):150-68. DOI: https://dx.doi.org/10.1038/jes.2009.73

Gebbink, W.A., Berger, U., Cousins, I.T. 2015. Estimating human exposure to PFOS isomers and PFCA homologues: the relative importance of direct and indirect (precursor) exposure. Environ Int. 74:160-9. DOI: https://dx.doi.org/10.1016/j.envint.2014.10.013

Li, Y., Fletcher, T., Mucs, D., Scott, K., Lindh, C.H., Tallving, P., Jakobsson, K. 2018 Half-lives of PFOS, PFHxS and PFOA after end of exposure to contaminated drinking water. Occup Environ Med. 75(1):46-51. DOI: 10.1136/oemed-2017-104651

MECDC. 2020. Action levels for PFOS in beef for use in determining whether beef at a farm is adulterated. Memorandum to the Department of Agriculture, Conservation and Forestry. August 24, 2020.

Tittlemier, S.A., Pepper, K., Seymour, C., Moisey, J., Bronson, R., Cao, X.L., Dabeka, R.W. 2007. Dietary exposure of Canadians to perfluorinated carboxylates and perfluorooctane sulfonate via consumption

of meat, fish, fast foods, and food items prepared in their packaging. J Agric Food Chem. 55(8):3203-10. DOI: https://dx.doi.org/10.1021/jf0634045

Trudel, D., Horowitz, L., Wormuth, M., Scheringer, M., Cousins, I.T., Hungerbühler, K. 2008. Estimating consumer exposure to PFOS and PFOA. Risk Anal. 28(2):251-69. DOI: https://dx.doi.org/10.1111/j.1539-6924.2008.01017.x

USCDC. 2021. Center for Disease Control and Prevention. National Report on Human Exposure to Environmental Chemicals. Early Release: Per- and Polyfluorinated Substances (PFAS) Tables, NHANES 2011-2018. https://www.cdc.gov/exposurereport/pfas_early_release.html (last accessed 01.25.22)

USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). Office of Water, Office of Science and Technology. EPA-822-B-00-004. https://nepis.epa.gov/Exe/ZyPDF.cgi/P1005EZQ.PDF?Dockey=P1005EZQ.PDF

USEPA. 2011. Exposure Factors Handbook 2011 Edition (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/052F, 2011.

USEPA. 2016. Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS). Office of Water. EPA 822-R-16-004. https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf

Vestergren, R., Cousins, I.T., Trudel, D., Wormuth, M., Scheringer, M. 2008. Estimating the contribution of precursor compounds in consumer exposure to PFOS and PFOA. Chemosphere. 73(10):1617-24. DOI: https://doi.org/10.1016/j.chemosphere.2008.08.011