

Title: Calculating the Amount of PFAS Currently on the Ground due to the Land-Spreading of PFAS Contaminated Waste Treatment Sludge in Fairfield, Maine

Author: Nathan S. Saunders P.E.

ORCID URL: <https://orcid.org/0009-0005-0867-5373>

Email: nsaunders51508@roadrunner.com

Abstract: Between 1980 and 2003, 149,934 cubic yards of PFAS contaminated wastewater treatment sludge from the Kennebec Sanitary Treatment District (KSTD) were land-spread in Fairfield, Maine. This paper reports the amount of PFOS and PFOA, in pounds, which is currently on the ground in Fairfield, Maine, and the enormous potential that PFAS has to contaminate the drinking water aquifer below ground, beyond the EPA drinking water Maximum Contaminant Levels for PFOA and PFOS, for many years to come. The PFAS currently on the ground in Fairfield, Maine has the potential to contaminate a volume of water (1.422 trillion gallons) equal to the volume of water served to New York City over four years. In addition, the volume of PFAS contaminated wastewater treatment sludge spread in Fairfield, Maine is only 51% of the total amount of KSTD sludge that was land-spread. The remaining 49% was land-spread in 15 nearby communities. In total, 293,651 cubic yards of KSTD sludge were spread in Fairfield, Maine and 15 nearby communities. That amount is equivalent to 20,975 fourteen cubic yard dump-truck loads of land-spread wastewater treatment sludge. All data used in this report came from the Maine Department of Environmental Protection and other cited sources. All data and calculations are included in the report.

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Calculating the Amount of PFAS Currently on the Ground due to the Land-Spreading of PFAS Contaminated Waste Treatment Sludge in Fairfield, Maine

Nathan S. Saunders P.E.

10/23/25



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Acronyms/Definitions:

KSTD: Kennebec Sanitary Treatment District

MCL: Maximum Contaminant Level... of a contaminant in drinking water. The MCL specifies the maximum amount of a contaminant in drinking water that has been determined to be safe to drink by the US EPA.

MEDEP: Maine Department of Environmental Protection

MEDWP: Maine Drinking Water Program

PFAS6: Prior to the EPA MCL for PFAS adopted in April 2024, Maine had an enforceable limit of 20 ppt for a combination of six PFAS chemicals, which include PFOA, PFOS, PFHxS, PFNA, PFHpA, PFDA.

PFOA: Perfluorooctanoic Acid

PFOS: Perfluorooctanesulfonic Acid

ppt: parts per trillion

Preface 1: it takes only 0.00000000037 pounds² (37 trillionths of a pound) of either PFOA or PFOS to contaminate one gallon of water to exceed the maximum safe level for drinking, set by the US EPA.

Preface 2: When the term “has the capacity to contaminate” is used in this report, it **does not** mean that the contamination **will** occur. The term is used to describe the amount of potential the PFAS that is currently on the ground in Fairfield has to contaminate drinking water, in order to show the magnitude of the existing PFAS contamination in Fairfield, Maine.

Findings: Using data from the Maine Department of Environmental Protection (MEDEP) on volumes of Kennebec Sanitary Treatment District (KSTD) sludge that was land-spread, and spreading locations, along with PFOA and PFOS soil concentrations in specific fields in Fairfield, Maine, quantities of PFOA and PFOS that are currently on the ground in Fairfield were calculated. Less than ½ mile from the Howe Road in Fairfield, Maine, on approximately 113 acres¹, 16.61 pounds² of PFOA and PFOS are currently present in the soil. Considering the recently adopted Federal drinking water MCLs for PFOA and PFOS,

¹ ME DEP PFAS MAP, Planimeter Tool

² Calculations: Appendix A

both at 4 parts per trillion³ (ppt), the 16.61 pounds of PFOA and PFOS is capable of contaminating 442 BILLION (442,000,000,000) gallons² of drinking water to exceed the PFOA and PFOS Maximum Contaminant Levels.

Considering the entire land area of Fairfield, Maine, the 53.41 pounds² of PFOA and PFOS that are currently in the soils in specific Fairfield locations have the capacity to contaminate 1.422 TRILLION (1,422,000,000,000) gallons² of drinking water to exceed the PFOA and PFOS Maximum Contaminant Levels. It is important to note that this amount of PFAS is currently on the ground in Fairfield, Maine, and is continually seeping into the drinking water aquifer underground in Fairfield, Maine.

Consequences:

1. Regarding the 16.61 pounds of PFOA and PFOS that is currently on the ground within ½ mile of the Howe Road in Fairfield, Maine:
 - A local water utility provides approximately 1 billion gallons of drinking water per year to 22,000 customers. The amount of PFOA and PFOS on the ground near the Howe Road, currently seeping into the underground drinking water aquifer, has the capacity to contaminate the amount of water supplied to 22,000 customers for 442 years².
 - Has the capacity to contaminate the entire volume of China Lake 14 times², in exceedance of the Maximum Contaminant Levels for PFOA and PFOS. China Lake holds 31.7 billion (31,000,000,000) gallons of water⁴.
2. The 53.41 pounds of PFOA and PFOS that is currently on the ground in specific locations in Fairfield, Maine:
 - Has the capacity to contaminate the entire volume of water served to New York City for 4 years².
 - The amount of PFOA and PFOS on the ground near the Howe Road, currently seeping into the underground drinking water aquifer, has the capacity to contaminate the amount of water supplied to 22,000 customers for 1,422 years². Expanding on these numbers, the 53.41 pounds of PFOA and PFOS that is currently on the ground in Fairfield, Maine has the capacity to contaminate all of the water consumed by the entire State of Maine population (1.385 million people) for 23 years².

3. US EPA www.epa.gov

4. Wikipedia

- If the amount of water that could be contaminated by the PFOA and PFOS that is currently on the ground in Fairfield (1.422 trillion gallons) could be contained only on top of the Town of Fairfield, the water would be 125 deep² over the entire town. That is water 125 feet deep over an area of 54.58 square miles⁵.
- Has the capacity to contaminate the entire volume of Moosehead Lake in exceedance of the Maximum Contaminant Level for PFOA and PFOS. Moosehead Lake holds 1.371 trillion (1,371,000,000,000) gallons² of water.
- Has the capacity to contaminate the entire volume of China Lake 45 times², in exceedance of the Maximum Contaminant Levels for PFOA and PFOS.

5. Additional considerations:

- This report is based only on the KSTD sludge that was land spread in Fairfield, Maine, which is 51%² of the total amount of KSTD sludge that has been land-spread since 1980. This means that 49% (essentially half) of KSTD sludge has been land-spread in these other central Maine communities: Albion, Benton, Canaan, Chelsea, China, Clinton, Jackson, Knox, Palermo, Sydney, St. Albans, Unity, Unity Township, Waterville, and Whitefield⁶.
- The PFOA and PFOS that is currently on the ground in Fairfield, Maine will not contaminate Moosehead Lake or New York City's water supply, but it does have the capacity to contaminate 1.422 Trillion gallons of drinking water under the town of Fairfield, before the contaminated water migrates elsewhere, still contaminated.
- Consider that the calculations in this report and soil tests (generally completed in 2020-2021) were completed almost 20 years after that last Fairfield land-spreading of KSTD sludge in 2003, and the majority of KSTD sludge was spread in Fairfield in the 1980s, between 30 and 40 years ago⁷.
- Since land-spreading of PFAS contaminated sludge occurred between 20 and 40 years ago, the initial soil PFAS concentrations could only have reduced to get the levels measured in 2020 and 2021; soil PFAS concentrations could only have been higher years ago.

⁵ <https://en.m.wikipedia.org>

⁶ Appendix B

⁷ Appendix F

- In 2023, the average PFAS6 levels in twenty-one drinking water wells either on or next to the Howe Road in Fairfield was 12,851 ppt⁸. The majority of PFAS soils tests were taken in Fairfield in 2020 and 2021, and the majority of PFAS contaminated KSTD Sludge was land-spread in the 1980s, between 30 and 40 years ago, these drinking water wells have extraordinarily high PFAS levels as much as 30 to 40 years after the majority of the sludge was spread. On the Howe Road in Fairfield, our average drinking water well PFAS6 level in 2021 was 14,832 ppt, and in 2023 was 16,667 ppt⁹.
- Currently there is a PFAS “Do Not Eat Wildlife Consumption Advisory” for portions of Fairfield and seven other central Maine towns¹⁰. With the enormous future potential for PFAS water contamination in Fairfield, the same water that wildlife consumes and fish swim in, it is likely that these wildlife and fish consumption advisories will be in place for many years.
- There are about 15,000 different PFAS chemicals¹¹, yet the standard drinking water test for PFAS tests for 27 chemicals. This report only calculates the amount of PFOA and PFOS currently on the ground in Fairfield, only two of the 27 PFAS chemicals tested for in drinking water, and only 2 of the 9 PFAS chemicals¹² regulated by the EPA that have a set Maximum Contaminant Level. This report does not include calculations for seven other regulated PFAS chemicals.
- For PFOA and PFOS soil sample levels, some EGAD# (locations) have several test results involving different, specific fields at the same EGAD location. All samples for a given EGAD# were averaged in order to have conservative calculations; extreme values of PFAS concentrations of PFAS **were not** used. For example, the field with the highest concentration of PFOS in the State of Maine is in Fairfield and has a concentration of 1,080 parts per billion, (1,080,000 ppt)¹³. The average PFOS level used for this field and others around it, all having the same EGAD#, was 229 parts per billion (229,000 ppt)¹⁴.

8 Appendix J from ME DEP PFAS MAP

9 Appendix G

10 www.maine.gov, IFW, ME CDC

11 National Institute of Health (NIH)

12 www.epa.gov

13 Appendix I

14 Appendix E

- Since the numbers used in this report are so large, it can be difficult to understand how large they are. As stated earlier, it has been calculated that the amount of PFOA and PFOS that is currently on the ground in Fairfield, Maine has the capacity to contaminate 1.422 trillion gallons of drinking water. As a comparison, to help understand how large this number of gallons is:

A gallon of water can fit into a cube that has length, width, and height of 6.1 inches²... “a 6.1-inch cube”.

If each of the 1.422 trillion gallons of water that can be contaminated was put into a 6.1-inch cube, and 1.422 trillion of these cubes were lined up, the line of these cubes would go around the earth 5,500 times².

- An Olympic sized swimming pool holds 660,000 gallons¹⁵ of water. The PFOA and PFOS currently on the ground in Fairfield, Maine has the potential to contaminate enough water (1.4 trillion gallons) to fill 2,121,212 Olympic sized swimming pools, which if lined up in a row, would circumnavigate the earth 2.6 times²

Conclusion: To reduce the long-term consequences of existing PFAS contamination in Fairfield, serious consideration needs to be given to removing the soil that contains land-spread sludge that is highly contaminated with PFAS. When funds are available from sources other than Fairfield citizens, removal of the PFAS contaminated soils will reduce the long-term impact of PFAS in the Fairfield community by decades, possibly many decades. Right now, all of the PFAS calculated in this report to be on the ground is continually seeping underground and contaminating the drinking water under Fairfield, Maine, and it will continue to do so until it is removed.

¹⁵ Wikipedia

Appendices

Appendix A: Calculations

Appendix B: KSTD Land-Spread Sludge Volumes (Total)

Appendix C: KSTD Sludge Density

**Appendix D: PFOA and PFOS Soil Sample PFOA and PFOS Levels¹
from ME DEP PFAS MAP**

Appendix E: Calculations Spreadsheet

Appendix F: KSTD Sludge Spread Per Year

**Appendix G: Howe Road Home Average PFAS6 Well Test Results
2021, 2022, 2023, 2024, 2021-2025**

Appendix H: Highest Well PFAS6 Levels in Maine 8/27/23

Appendix I: Highest Land/Field PFAS6 Levels in Maine 8/27/23

**Appendix J: Average PFAS6 Level of 21 Wells On or Near Howe
Road, Fairfield, Maine 2023**

Appendix A
Calculations

4/30/24. APPENDIX A
 N.S. Calculations

1 cu yrd = 27 cu ft

1 g = 1000000000 ng
 1 gallon = 3.785 Liters
 1 lb = 453.592 grams

(307) cu yds sludge [FROM APPENDIX B]

[Example... 1st calculation on spreadsheet
 "Corrected Land Spreading Numbers for Near Home.xlsx"
 - EGAD # 30155

(307) cu yds sludge x $\frac{(27) \text{ cu ft}}{\text{cu yds}} = 82,917 \text{ cu ft}$

$(82,917) \text{ cu ft} \times \frac{(56.37) \text{ lbs}}{\text{cu ft}} = 4,674,031 \text{ lbs.}$

with a concentration of 5.01 ppb PFOA, the total pounds of PFOA is 4,674,031 lbs is:

$4,674,031 \text{ lbs} \times .00000005010 = .02341689531 \text{ lbs PFOA}$

with a concentration of 149 ppb PFOS, the total lbs of PFOS is 4,674,031 lbs is:

$4,674,031 \text{ lbs} \times .000000149000 = .696430619 \text{ lbs PFOS}$

KSTD sludge density (detefrom KSTD)
 = 56.37 lb/cu ft

[Appendix C]
 $(1522) \frac{\text{lb}}{\text{cu yd}} \times \frac{\text{cu yrd}}{(27) \text{ cu ft}} = 56.37 \frac{\text{lb}}{\text{ft}^3}$

Avg PFOA soil concentration
 [FROM APPENDIX D]
 5.01 ppb (parts per billion parts)
 $\frac{5.01 \text{ parts}}{1,000,000,000 \text{ parts}} = .00000005010$ unitless.

Avg PFOS soil concentration
 [FROM APPENDIX D]
 149 ppb
 $\frac{149 \text{ parts}}{1,000,000,000 \text{ parts}} = .000000149000$



For fields near the Howe Road, the amounts (lbs) of PFOA and PFOS were calculated for each EGAD# near the Howe Road (within 1/2 mile) with the following results:

PFOA	PFOS
0.544399431168 lbs	16.066917874800 lbs ← <u>Appendix E</u>

Since the new Federal MCL for both PFOA and PFOS is 4 ppt, these amounts were combined (added) to get: 16.611317305968 lbs Total PFOA and PFOS near Howe Rd

$$(16.611317305968) \text{ lbs} \times \frac{(453.592) \text{ grams}}{1 \text{ lb}} = 7534.760639448637 \text{ grams}$$

$$1 \text{ gram} = 1000,000,000 \text{ nanograms (ng)}$$

$$(7534.760639448637) \text{ grams} \times \frac{(1,000,000,000) \text{ ng}}{\text{gram}} = 7,534,760,639,448 \text{ ng}$$

To exceed the MCL for PFOA and PFOS, both having MCL = 4 ppt, the minimum exceedance lab sample would have to be 4.5 ppt (MCLDWQ)

$$1 \text{ ppt} = \frac{1 \text{ ng}}{\text{Liter}}$$

To determine how many liter of water can be contaminated to exceed the MCL for PFOA and PFOS, how many amounts of 4.5 ng are there in 7,534,760,639,448 ng.

$$\frac{7,534,760,639,448 \text{ ng}}{4.5 \text{ ng/L}} = 1,674,391,253,211 \text{ Liters}$$

$$(1,674,391,253,215) \text{ Liters} \times \frac{\text{gallon}}{(3,785) \text{ Liters}} = 442,375,496,225 \text{ gallons}$$

Result: The 16.61 lbs of PFOA and PFOS spread on fields within $\frac{1}{2}$ mile of the Howe Road have the capacity to contaminate 442 Billion gallons of water **Approx E** to exceed the PFOA and PFOS MCLs.

A nearby water utility produces approximately 1 Billion gallons of drinking water per year servicing 22,000 people. ^{near the Howe Rd, Fairfield}

The PFOA and PFOS currently on the ground, seeping into the underground drinking water aquifer, ^{below Fairfield} has the capacity to contaminate the amount of water used by 22,000 people for 442 years. $442 \text{ Billion gal} \times \frac{1 \text{ yr}}{1 \text{ Billion gal}} = 442 \text{ years}$

China Lake, near Augusta, Maine, has a volume of 31.7 Billion gallons.

The PFOA and PFOS currently on the ground, near the Howe Road, Fairfield, has the capacity of contaminating the volume of China Lake $\frac{442,375,496,225 \text{ gal}}{31,700,000,000 \text{ gal}} = 13.96 \approx 14 \text{ times}$ 14 times in exceedance of the PFOA and PFOS MCLs.

$$\frac{442,375,496,225 \text{ gal}}{31,700,000,000 \text{ gal}} = 13.96 \approx 14 \text{ times}$$

From DEP Records

The total volume of sludge spread in Fairfield Maine = 149,934 yds.
KSTD

Appendix F

$$1.422 \text{ Trillion} = 1422 \text{ Billion}$$

$$1422 \text{ Billion gal} \times \frac{1 \text{ yr}}{1 \text{ Billion gal}} = 1422 \text{ years}$$

Appendix E

For all of Fairfield, the 53.41 lbs of PFOA and PFOS spread on fields in Fairfield, Maine has the capacity to contaminate 1.422 Trillion gallons of water. $\rightarrow \frac{53.41 \times 419,375,496,285 \text{ gal}}{16.61}$

Appendix E

The PFOA and PFOS currently on the ground in Fairfield, Maine, currently seeping into the underground drinking water aquifer, has the capacity to contaminate the amount of water used by 22,000 people for 1,422 years, or the entire population of the State of Maine (1,385,000) for 23 years = $\left[\frac{22,000}{1,385,000} \times 1422 \right]$

China Lake, near Augusta, Maine has a volume of 31.7 Billion gallons.

The PFOA and PFOS currently on the ground in Fairfield has the capacity to contaminate the volume of China Lake forty five (45) times, in exceedance of the PFOA and PFOS MCLs.

$$\frac{1,422,316,815,283 \text{ gal}}{31,700,000,000 \text{ gal}} = 44.9 \Rightarrow 45$$



Moosehead Lake, Maine, has a volume of 1,371 Trillion gallons. The PFOA and PFOS currently on the ground in Fairfield, Maine has the capacity to contaminate the entire volume of Moosehead Lake in exceedance of the PFOA and PFOS MCLs.

$$\frac{1,422 \text{ Trillion gal}}{1,371 \text{ Trillion gal}} = 1.04 \sim 1 \text{ time}$$

The New York City water consumption in 2021 was 979 million gallons per day. In a year New York City uses $979,000,000 \text{ gal/day} \times \frac{365 \text{ days}}{\text{yr}} = 357,335,000,000 \text{ gallons per year}$

reference www.nyc.gov

The PFOA and PFOS on the ground in Fairfield, Maine has the capacity to contaminate the entire water supply for New York City for ~ 4 years, in exceedance of the PFOA and PFOS MCLs.

$$\frac{1,422,316,815,283}{357,335,000,000 \text{ gal/yr}} = 3.98 \sim 4 \text{ years}$$

(Appendix E)

The total volume of KSTD sludge spread in Fairfield = 149,934 cu yds.

The total amount of KSTD sludge that was land-spread = 293,651 cu yds.

The percent of KSTD sludge spread in Fairfield = $\frac{149,934 \text{ cu yd}}{293,651 \text{ cu yd}} \times 100 = 51.7\%$

The percent of KSTD sludge spread in areas other than Fairfield, in similar proximity to the KSTD plant = $\frac{293,651 - 149,934}{293,651} \times 100 = 49\%$

This report only covers (51%) of the KSTD sludge that was spread. [essentially half]

One can rightly argue that the PFOA and PFOS on the ground in Fairfield is not going to contaminate Mooshead Lake or New York City's water supply, but it does have the capacity to contaminate that much water under the town of Fairfield. If the amount of water that could be contaminated by the PFOA and PFOS currently on the ground in Fairfield (1.422 Trillion gallons) could be contained only on top of Fairfield, the contaminated water would cover the entire Town of Fairfield with a depth of 125 ft. That is an area of 54.58 square miles covered with 125 feet of contaminated water.

$$\Rightarrow 1.422 \text{ Trillion gallons} = \overset{\text{specifically}}{(1,422,316,815,283 \text{ gal})} \frac{\text{cu ft}}{(7.48 \text{ gal})} = 190,123,889,224 \text{ cu ft or ft}^3$$

$$\text{The area of Fairfield} = (54.58 \text{ sq mi}) \times \frac{(27,878,400 \text{ sq ft})}{\text{sq mi}} = 1,521,603,072 \text{ sq. ft.}$$

$$\text{Volume (ft}^3\text{)} = \text{Area (ft}^2\text{)} \times \text{Height (ft)}$$

$$\frac{\text{Volume (ft}^3\text{)}}{\text{Area (ft}^2\text{)}} = \text{Height (ft)}$$

$$\frac{190,123,889,224 \text{ (ft}^3\text{)}}{1,521,603,072 \text{ (ft}^2\text{)}} = 125 \text{ feet deep (over the entire Town of Fairfield)}$$

What does this tell us? It tells us that the water under and near the fields in Fairfield that were land-spread with PFA's contaminated sludge will be contaminated for a VERY LONG time. Consider that these calculations and recent soil tests were completed more than 20 years after the last Fairfield land-spreading in 2003. The majority of KSTD sludge was spread in Fairfield in the 1980's, forty years ago.

40 years
And the first
after the first
spreading in 1980
sludge

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- In 2023, the average PFAS6 of twenty ^{Appendix J} wells either on or next to the Howe Rd in Fairfield was 1885 ppt. Given the majority of PFAS soil ^{Appendix F} tests were taken in years 2020 and 2021, and the majority of PFAS contaminated NSTD sludge was land spread in the ^{ME DEP PFAS MAP} 1980s, between 30 and 40 years ago, drinking water wells have extraordinarily high PFAS levels as much as 30 to 40 years after the majority of sludge was spread. Given the ^{enormous} contamination potential of the PFOA and PFOS alone to contaminate drinking water as described, it is very likely that PFAS levels in drinking water in Fairfield, Maine will remain very high for tens if not hundreds of years. On the Howe Rd in Fairfield, our average PFAS6 level in 2021 was 1483 ppt and in 2023 was 16,667 ppt. There is certainly no ^{Appendix G} evidence of rapid reduction in those numbers.

- Since the land-spreading of PFAS contaminated sludge occurred between 20 and 40 years ago, the soil samples could only have reduced to get to the levels measured/sampled in 2020 and 2021; soil samples could only have been worse/higher years ago. With
- There are deer and fish consumption recommendation in the Fairfield area. The enormous potential for water contamination that the PFAS currently on the ground in Fairfield poses, it is likely that these wildlife consumption restrictions will be in place for many years, ^{www.maine.gov}
- There are about 15,000 different PFAS chemicals and the drinking water test only tests for 28 PFAS chemicals. This report only evaluates PFOA and PFO5, only two of the 28 PFAS tested for, and only two of nine PFAS ^{2epag.gov} the nine. ^{NIH} (National Institute for Health) ^{Pg 7 of 11}

- For PFOA and PFOS soil sample levels, some EGAD#s (locations) had several tests involving different specific fields at that EGAD#. All samples for a given EGAD# were averaged to have conservative calculations; extreme values were not used.

- Moosehead Lake volume = $(5,190,000,000 \text{ m}^3) \times \frac{(264,172 \text{ gal})}{\text{m}^3} = 1,371,052,680,000 \text{ gallons}$
 1.371 Billion gallons

- Since the numbers used in this report are so large, it is difficult to have perspective on how large they are. It has been calculated that the amount of PFOA and PFOS that is currently on the ground in Fairfield, Maine has the capacity to contaminate

1.422 trillion gallons of water. As a comparison:

$$(1,422,000,000,000 \text{ seconds}) \times \frac{\text{minute}}{(60) \text{ seconds}} \times \frac{\text{hr}}{(60) \text{ min}} \times \frac{\text{day}}{(24) \text{ hr}} \times \frac{\text{yr}}{(365) \text{ day}} = \frac{1,422,000,000,000}{31,536,000} = 45,091 \text{ years}$$

1.422 Trillion seconds = 45,091 years

$$\text{Moosehead Lake Volume} = (5.19 \times 10^9) \text{ m}^3 \times \frac{264,172 \text{ gal}}{\text{m}^3} = (1,371,052,680,000) \text{ gal}$$

$$\text{China Lake Volume} = 120,001,000 \text{ m}^3 \times \frac{264,172 \text{ gal}}{\text{m}^3} = 31,700,904,172 \text{ gal}$$

<https://en.m.wikipedia.org>

5/3/04
N.S.

How many pounds of PFOA or PFOS does it take to contaminate a gallon of water to exceed the MCL.

The MCLs for both PFOA and PFOS are 4 ppt

In order to exceed* the MCL, the lab sample must be at least 4.5, which rounds up to 5.

1 ppt = 1 mg/L so 4.5 ng grams of PFOA or PFOS will contaminate a liter of water

$$(4.5 \text{ ng}) \times \frac{(3.785 \text{ L})}{\text{gallon}} = 17.0325 \frac{\text{ng}}{\text{gallon}} = .000000170325 \frac{\text{grams}}{\text{gallon}}$$

$$.000000170325 \frac{\text{g}}{\text{gallon}} \times \frac{\text{lb}}{(453.592 \text{ g})} = .000000003755 \frac{\text{lb}}{\text{gallon}} = 3.755 \times 10^{-11} \frac{\text{lb}}{\text{gallon}}$$

So, it takes .000000003755 pounds of PFOA or PFAS to contaminate one gallon of water to exceed the maximum safe level set by the USEPA.

* 4 ppt is the Maximum Contaminant Level, or the maximum amount of PFOA or PFAS that can be in drinking water and be considered safe to drink. Any measurement that is less than 4.5 ppt is considered safe to drink by the USEPA.

$$1 \text{ gallon} = .13368 \text{ ft}^3$$

what length are the side of a cube having a volume of $.13368 \text{ ft}^3$
- all sides of a cube are the same $X=Y=Z$ or cube volume = X^3
- so a cube that holds one gallon volume has sides of:

$$X^3 = .13368 \text{ ft}^3 \quad (.5113) \text{ ft} \quad \frac{(12) \text{ inches} = 6.14 \text{ inches}}{1 \text{ ft}}$$

$$X = \sqrt[3]{.13368} = .5113 \text{ ft}$$

If 1,422 trillion cube of water holding one gallon each were lined up next each other to go around the earth, how many times around the earth would these lined up cubes go?

The number of gallons that PFOA and PFOS currently in the ground in Fairfield, Maine has the capacity to contaminate is: 1,422,316,815,283 gallons.

Since each cube has a length of .5113 ft, the total length of these

$$1,422,316,815,283 \text{ cubes holding a gallon of water would be } 727,230,587,654 \text{ ft}$$

$$1,422,316,815,283 \times .5113 \text{ ft} = 727,230,587,654 \text{ ft}$$

The circumference of the earth is $(24,901 \text{ mi}) \times \frac{(5280 \text{ ft})}{\text{mile}} = 131,477,280 \text{ ft}$

www.space.com

$$\frac{727,230,587,654 \text{ ft}}{131,477,280 \text{ ft}} = 5531 \text{ times} \approx 5500 \text{ times}$$

The 1,422 Trillion gallon of water that can be contaminated by the amount of PFOA and PFOS currently on the ground in Fairfield, Maine, lined-up in cubes holding one gallon each would circumnavigate the globe 5500 times.

Conversion of Sludge Volume and PFAS concentration to gallons contaminated.
 (OUTLINE CALCULATIONS)

sludge volume (cu yds) \rightarrow $\frac{\text{cuyd}^3 \times \text{density}}{\text{sludge}} \times \text{PF OA or PF OS concentration} =$

- = PF OA or PF OS pounds for that amount of sludge
- add PF OA and PF OS pounds, since both PF OA and PF OS have the same MCL of 4 ppt
- exceedance of MCL occurs a 4.5 ppt = 4.5 mg/L

Pounds \rightarrow grams \rightarrow nanograms
 PF OA + PF OS
 To find liters of water that can be contaminated by that weight of PF OA + PF OS,
 $\frac{\text{nanograms}}{4.5 \text{ mg/L}} = \text{Liters} \rightarrow \text{gallons}$

This outline show the calculations from Sludge volume to the number of gallons of water that could be contaminated to exceed the drinking water MCL for PF OA or PF OS.

An olympic sized swimming pool holds 660,000 gallons of water. (how many olympic sized swimming pools will 1.4 trillion gallons of water fill up?)
 $\frac{1,400,000,000 \text{ gal}}{660,000 \text{ gal/pool}} = 2,121,212$ olympic sized swimming pools

Swimming pools will 1.4 trillion gallons of water fill up?
 Olympic Pool: 50m x 25m, minimum depth 2 meters
 Pools lined up end to end: $2,121,212 \times 50\text{m} = 106,060,600\text{m}$
 $\frac{106,060,600\text{m}}{1609.33\text{m/mile}} = 65,917\text{miles}$
 $\frac{65,917\text{miles}}{24,901\text{miles/around globe}} = 2.6\text{ times}$ around globe 11/27/11

Appendix B

KSTD Land-Spread Sludge Volumes (Total)

From DEP Email 4/16/24

Licensee	Year	Site	EGAD #'s	Town	Field	Volume in Cubic Yards	Comments	License Number(s)
Kennebec Sanitary TD	1996	Perkins	27772	Albion	2-1	100	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1996	Perkins	27772	Albion	2-2	130	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1996	Perkins	27772	Albion	2-3	130	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1996	Perkins	27772	Albion	3N	120	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1996	Perkins	27772	Albion	3S	120	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1997	Perkins	27772	Albion	2	270	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1997	Perkins	27772	Albion	6	440	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1997	Perkins	27772	Albion	1-1	143	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1997	Perkins	27772	Albion	2-2	77	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1997	Perkins	27772	Albion	3	180	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1998	Perkins	27772	Albion	6	260	From Scanned Facility Reports at KSTD	S-021622-SI-A-N
Kennebec Sanitary TD	1985	Takacs	27825	Albion		1,494	From Scanned Facility Reports at KSTD	W006731-56-A-N
Kennebec Sanitary TD	1986	Takacs	27825	Albion		1,197	From Scanned Facility Reports at KSTD; P	W006731-56-A-N
Kennebec Sanitary TD	1999	Dusoe	33494	Albion		1,674	Topsoil Manufacturing	S-021992-SI-A-N
Kennebec Sanitary TD	1997	Pearson	33499	Albion	1A	566	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1997	Pearson	33499	Albion	1B	566	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1997	Pearson	33499	Albion	1C	424	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1998	Pearson	33499	Albion	1A	314	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1998	Pearson	33499	Albion	1B	314	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1998	Pearson	33499	Albion	1C	314	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1999	Pearson	33499	Albion	1a	304	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1999	Pearson	33499	Albion	1b	304	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1999	Pearson	33499	Albion	1c	305	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1999	Pearson[R]	33499	Albion	2-1	192	From Scanned Facility Reports at KSTD	S-021920-SI-A-N
Kennebec Sanitary TD	1999	Pearson[R]	33499	Albion	2-2	193	From Scanned Facility Reports at KSTD	S-021920-SI-A-N
Kennebec Sanitary TD	2000	Pearson	33499	Albion	1A	246	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2000	Pearson	33499	Albion	1B	246	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2000	Pearson	33499	Albion	1C	246	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2000	Pearson[R]	33499	Albion	2	496	From Scanned Facility Reports at KSTD	S-021920-SI-A-N
Kennebec Sanitary TD	2001	Pearson	33499	Albion	1A	216	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2001	Pearson	33499	Albion	1B	216	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2001	Pearson	33499	Albion	1C	216	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2001	Pearson[R]	33499	Albion	2	435	From Scanned Facility Reports at KSTD	S-021920-SI-A-N
Kennebec Sanitary TD	2002	Pearson	33499	Albion	1A	143	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2002	Pearson	33499	Albion	1B	143	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2002	Pearson	33499	Albion	1C	143	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2002	Pearson[R]	33499	Albion	2	296	From Scanned Facility Reports at KSTD	S-021920-SI-A-N
Kennebec Sanitary TD	2003	Pearson	33499	Albion	1A	160	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2003	Pearson	33499	Albion	1B	160	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	2003	Pearson	33499	Albion	1C	160	From Scanned Facility Reports at KSTD	S-021691-SI-A-N
Kennebec Sanitary TD	1997	Doore	146547	Albion	1A	376	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1997	Doore	146547	Albion	1B	376	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1997	Doore	146547	Albion	1C	188	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1998	Doore	146547	Albion	1A	187	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1998	Doore	146547	Albion	1B	187	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1998	Doore	146547	Albion	1C	186	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1999	Doore	146547	Albion	1a	200	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1999	Doore	146547	Albion	1b	200	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1999	Doore	146547	Albion	1c	200	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2000	Doore	146547	Albion	1A	263	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2000	Doore	146547	Albion	1B	263	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2000	Doore	146547	Albion	1C	263	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2001	Doore	146547	Albion	1A	226	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2001	Doore	146547	Albion	1B	226	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2001	Doore	146547	Albion	1C	226	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2002	Doore	146547	Albion	1A	143	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2002	Doore	146547	Albion	1B	143	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	2002	Doore	146547	Albion	1C	143	From Scanned Facility Reports at KSTD	S-021689-SI-A-N
Kennebec Sanitary TD	1997	Belfast Landfil	29402	Belfast		880	Topsoil Manufacturing with KSTD & Brewe	S-021759-SK-A-P
Kennebec Sanitary TD	1995	Woodworth	30564	Benton	1-1	50	From Scanned Facility Reports at KSTD	S-021153-SI-A-N

Kennebec Sanitary TD	1996	Street	30518	Chelsea	1-5	406	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1996	Street	30518	Chelsea	1-6	309	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-2	504	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-3	156	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-5	500	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-6	380	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-1	156	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-4	48	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-7	96	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Street	30518	Chelsea	1-8	60	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1998	Street	30518	Chelsea	1-2	314	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1998	Street	30518	Chelsea	1-3	78	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1998	Street	30518	Chelsea	5	268	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1998	Street	30518	Chelsea	1-6A	116	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1998	Street	30518	Chelsea	1-6B	116	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-2	368	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-6	207	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-8	37	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-1a	93	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-1b	93	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-4	71	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-7	134	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-8	59	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1999	Street	30518	Chelsea	1-9	16	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-1	149	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-4	60	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-7	120	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-8	30	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-2	554	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-5	193	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2000	Street	30518	Chelsea	1-6	215	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-1	210	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-2	53	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-5	111	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-6	220	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-1	81	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-4	68	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-5	73	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-7	99	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2001	Street	30518	Chelsea	1-8	71	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2002	Street	30518	Chelsea	1-1	193	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	2002	Street	30518	Chelsea	1-6	141	From Scanned Facility Reports at KSTD	S-021564-SI-A-N
Kennebec Sanitary TD	1997	Haskell	146316	China	1A	405	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD	1997	Haskell	146316	China	2A	240	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD	1998	Haskell	146316	China	1-A	198	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD	1998	Haskell	146316	China	2-A	132	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD	1999	Haskell	146316	China	1a	215	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD	1999	Haskell	146316	China	2a	139	From Scanned Facility Reports at KSTD	S-021708-SI-A-N
Kennebec Sanitary TD		Caverly		Clinton			No spreading records found	S-021829-SI-A-N
Kennebec Sanitary TD	1980	Tozier #2	29494	Fairfield		1,405	From Application File	00-W005
Kennebec Sanitary TD	1981	Tozier #2	29494	Fairfield		6,225	From Scanned Facility Reports at KSTD; (1	00-W005
Kennebec Sanitary TD	1982	Tozier #2	29494	Fairfield		5,162	From Scanned Facility Reports at KSTD; (1	00-W005
Kennebec Sanitary TD	1983	Tozier #2	29494	Fairfield		5,725	From Scanned Facility Reports at KSTD	00-W005
Kennebec Sanitary TD	1984	Tozier #2	29494	Fairfield		6,021	From Scanned Facility Reports at KSTD	00-W005
Kennebec Sanitary TD	1985	Tozier #2	29494	Fairfield		891	From Scanned Facility Reports at KSTD	00-W005
Kennebec Sanitary TD	1981	Julia #1	30053	Fairfield		880	From Scanned Facility Reports at KSTD; (11/1980 - 11/1981)	
Kennebec Sanitary TD	1982	Julia #1	30053	Fairfield		2,330	From Scanned Facility Reports at KSTD; (11/1982 - 11/1982)	
Kennebec Sanitary TD	1982	Julia #1	30053	Fairfield		1,080	From Scanned Facility Reports at KSTD; (11/1982 - 12/1982)	
Kennebec Sanitary TD	1983	Julia #1	30053	Fairfield		1,748	From Scanned Facility Reports at KSTD	
Kennebec Sanitary TD	1984	Julia #1	30053	Fairfield		1,080	From Scanned Facility Reports at KSTD	
Kennebec Sanitary TD	1985	Julia #1	30053	Fairfield		2,925	From Scanned Facility Reports at KSTD	
Kennebec Sanitary TD	1986	Julia #1	30053	Fairfield		2,205	From Scanned Facility Reports at KSTD; Possibly includes some	
Kennebec Sanitary TD	1996	MacKay	30055	Fairfield	1-2, 3	660	From Scanned Facility Reports at KSTD	S-021550-SI-A-N

Kennebec Sanitary TD	1990	HR	30143	Unity Twp.	Means 2	303	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	1A	660	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	1A	80	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	4	840	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	4	100	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	5	88	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6A	420	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6A	50	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6C2	420	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6C2	50	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6C3	110	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	6C3	920	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	7	420	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	9	420	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	Woods 1	228	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	Means 1	690	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1991	HR	30143	Unity Twp.	Means 2	250	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	1A	680	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	4	850	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	5A	448	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	6C2	448	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	6C3	985	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1992	HR	30143	Unity Twp.	Means 1	810	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1993	HR	30143	Unity Twp.	1A	550	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1993	HR	30143	Unity Twp.	4	690	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1993	HR	30143	Unity Twp.	5A & 5C	1,460	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1993	HR	30143	Unity Twp.	Means	600	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	1A	520	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	4	650	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	6C-2	330	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	6C-3	726	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	8	560	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1995	HR	30143	Unity Twp.	5	264	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1996	HR	30143	Unity Twp.	5	232	From Scanned Facility Reports at KSTD	W007571-61-A-N
Kennebec Sanitary TD	1997	Waterville Landf	27715	Waterville		1,312		
Kennebec Sanitary TD	1998	Waterville Landf	27715	Waterville		910	Topsoil Manufacturing	
Kennebec Sanitary TD	1998	Fenderson	33495	Whitefield	1-1	89	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	1998	Fenderson	33495	Whitefield	1-2	89	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	1998	Fenderson	33495	Whitefield	1-6	89	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	1998	Fenderson	33495	Whitefield	1-7	89	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	1999	Fenderson	33495	Whitefield	1-1	10	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	2001	Fenderson	33495	Whitefield	S-1	74	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	2001	Fenderson	33495	Whitefield	S-2	74	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	2001	Fenderson	33495	Whitefield	S-7	46	From Scanned Facility Reports at KSTD	S-021900-SI-A-N
Kennebec Sanitary TD	1979					4,327	Total reported by KSTD per DEP request for info.	
Kennebec Sanitary TD	1987					0	No annual report found	
Kennebec Sanitary TD	1994					14,119	Total Reported - No breakdown by field	

293,651

Total land-spread
KSTD sludge = 293,651 cu. yds.

Appendix C

KSTD Sludge Density

From DEP Email 4/16/24.

KENNEBEC SANITARY TREATMENT DISTRICT

401 WATER STREET
P.O. BOX 805
WATERVILLE, MAINE 04901
SUMMARY
SLUDGE ANALYSIS REPORT

Sample I.D. number 12 Month Average

Date Collected Jan 2 to Dec 16, 1985

Collected by Operators

Date Reported _____

SAMPLE DESCRIPTION: Average of samples taken Jan. 2 to Dec. 16, 1985.
Sludge Filter Cake Grab Samples
RECEIVED FROM: Coil Filters
ANALYZE FOR:

PARAMETERS	RESULTS	COMMENTS
pH	12.2	
% Solids	19.2%	
Total Ammonia Nitrogen	Ave. = 1,006 Mg/Kg Dry Weight	
Total Organic Nitrogen	Ave. = 19,076 " " "	
Total Kjeldahl Nitrogen	Ave. = 20,082 " " "	
Total Phosphorus	Ave. = 4,308 " " "	

Analysis performed by Janet Abrahamson

Serving Waterville, Fairfield, Winslow, and Benton

1986

SLUDGE UTILIZATION

Data from 1985 Analysis Summary:

To include January 1985 through December 1985

% Solids = 19.2 %
 Ave. Tot K-N = 2.01%
 Ave. Tot. Organic N = 1.91%
 Ave. Tot. Ammonia = .10%

K.S.T.D. Sludge: 60% Primary @ .25 = .15
 40% Secondary @ .40 = .16

31% Release Rate

Sludge Weight in Trucks:

Aug. 21, 1985 10 cy weighs 15,060#

Oct. 2, 1980 10 cy weighs 15,493#

May 9, 1980 10 cy weighs 15,100#Average Weight 15,217#/10 cy = 1,522#/cy

Organic = 1.91 x .31 = .592

Ammonia = .10 x 1.0 = .100

.692% dry weight

2,000# x .192 = 384# dry wt.

384# x .69 = 2.65# N/wet ton

$$\frac{1522}{2000} = .76 \times 2.65 = 2.0 \# \text{ N/cy sludge}$$

200# N = 100 c.y./acre

100# N = 50 c.y./acre

50# N = 25 c.y./acre

KENNEBEC SANITARY TREATMENT DISTRICT

401 WATER STREET
 P.O. BOX 805
 WATERTVILLE, MAINE 04901

SUMMARY SLUDGE ANALYSIS REPORT

Sample I.D. number 12 Month A

Date Collected Jan 2 to Dec 27, 1

Collected by Operators

Date Reported _____

SAMPLE DESCRIPTION: Averages January 1985 to December 1985

RECEIVED FROM:

ANALYZE FOR:

PARAMETERS	RESULTS	COMMENTS
Cadmium	1.31	All results are reported as mg/kg dry wt.
Calcium	57,167	
Chromium	31	
Copper	417	
Iron	9,683	
Lead	145	
Magnesium	1,882	
Mercury	0.97	
Nickel	14	
Potassium	1,131	
Zinc	246	
Sodium	394	

1985

Analysis performed by Frost AB, Inc.
 Serving Waterville, Fairfield, Winslow, and Boston

1985
CUMULATIVE

Jan 6, 86

As of Dec. 31, 85	delivered To sites in 85	Actually spread at	In Stockpile	Ha.	
Julia #1	2925 ✓	720 ✓	2205	40.5	
Julia #2	3569 ✓ (same)	500 ✓	3069	14.6	
Julia #3	1269 ✓	1269 ✓	-	12.14	
Togier #1	261	261	-	20.2	
Togier #2	891 ✓	891	-	110.4	no limit on storage.
Togier #3	891 ✓	-	-		
Togier #4	1848 ✓	-	1848	17.0	
Wood.	4701 ✓ (same)	-	4701	29.3	no limit on storage.
Hagworth #1	3492	2472	1020	10.9	
Hagworth #1-A	784	784	-	6.9	
Takacs #12 6 acres	1494	297	1197	2.42	
	<u>21,234</u>	<u>7,194</u>	<u>14,040</u>		~ 21,234

Cumulative Loadings 1985
Based on Vol. Sludge Spread.

Basis:

sludge wt. 1522 #/cy @ 19.2%

is this formula correct Janet? Yes

formula? = cy x .192 x 1,000,000 x mg/kg = Hg.?

1985

Appendix D

PFOA and PFOS Soil Sample PFOA and PFOS Levels from
ME DEP PFAS MAP

SITE_DESCR	MAP_REFERENCE	SITE_NUMBER	SITE_NAME	MCD	PFOA	PFOS	SAMPLE_POINT_NUMBER	SAMPLE_POINT_WEB_NAME	SAMPLE_DATE
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	29494	PER DEP USE EGAD# 141361 PFOA AND PFOS #S	FAIRFIELD	12.8	229.01			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	29454	FAIRFIELD MUNI LANDFILL	FAIRFIELD	1.95	82.2	148350	FAIRFIELD LANDFILL SOIL N	7/14/2022
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	29454	FAIRFIELD MUNI LANDFILL	FAIRFIELD	2.22	69.5	148351	FAIRFIELD LANDFILL SOIL S	7/14/2022
					AVERAGE IN BOLD =	75.85			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30053	JULIA SITE 1	FAIRFIELD	7.8	235	143362	CS-101	2/19/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30053	JULIA SITE 1	FAIRFIELD	8.81	227	143363	CS-101	2/19/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30053	JULIA SITE 1	FAIRFIELD	4.23	147	143363	CS-101	2/19/2021
					AVERAGE IN BOLD =	203.00			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30055	MACKAY & WOOD SITE 2	FAIRFIELD	14.4	14.3	145164	MAKI-2	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30055	MACKAY & WOOD SITE 2	FAIRFIELD	38.6	46.1	145163	MAKI-1	6/29/2021
					AVERAGE IN BOLD =	30.2			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30124	SAMPSON_KSTD	FAIRFIELD	58.4	649	142582	SAMPSON-F2-1	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30124	SAMPSON_KSTD	FAIRFIELD	31	395	142581	SAMPSON-3	10/29/2020
SEPTAGE DISPOSAL/STORAG	PFAS SOIL SAMPLE AREA	30124	SAMPSON_KSTD	FAIRFIELD	1.09	3.4	142526	HIGGINS RASPBERRY FIELDS	10/29/2020
					AVERAGE IN BOLD =	349.13			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30155	TOZIER SITE 3	FAIRFIELD	4.89	139	147929	TOZIER FIELD 2-3	6/7/2022
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30155	TOZIER SITE 3	FAIRFIELD	5.13	159	147928	TOZIER FIELD 1	6/7/2022
					AVERAGE IN BOLD =	149			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30156	H P WOOD SITE	FAIRFIELD	9.07	242	142637	WOOD B1	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30156	H P WOOD SITE	FAIRFIELD	6.27	180	142636	WOOD A1	10/29/2020
					AVERAGE IN BOLD =	211			
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369	MIDDLE ROAD-FAIRFIELD	FAIRFIELD	0.512	0.91	145173	MOSHER FIELD	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369	MIDDLE ROAD-FAIRFIELD	FAIRFIELD	7.21	70.9	142493	P-1	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369	MIDDLE ROAD-FAIRFIELD	FAIRFIELD	12.3	232	142491	5-1-5-2	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369	MIDDLE ROAD-FAIRFIELD	FAIRFIELD	0.469	1.05	142797	CROCKET 24A	12/3/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369	MIDDLE ROAD-FAIRFIELD	FAIRFIELD	1.75	4.39	142802	CROCKET P2-3	12/3/2020

SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	11.1	33.5	142801 CROCKET 5-3-4-5	12/3/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	2.45	86.2	142799 CROCKET 4-1-5	12/3/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	7.92	155	142800 CROCKET 4-6	12/3/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	5.97	68	142798 CROCKET 3A	12/3/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	2.73	43.6	143513 D-8	2/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	6.84	29.3	143511 D-13	2/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	3.48	62.2	143512 D-4N	2/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30369 MIDDLE ROAD-FAIRFIELD	FAIRFIELD	1.08	3.1	143510 D-104-9	2/4/2021

AVERAGE IN BOLD = 4.91 60.78

SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30409 CROCKET SITE 6	FAIRFIELD	20	31	145172 CROCKET6-1	6/29/2021
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SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30613 HAPWORTH SITE FLD 1A	FAIRFIELD	6.3	92	145162 HAPWORTH-4	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30613 HAPWORTH SITE FLD 1A	FAIRFIELD	3.29	29.5	145159 HAPWORTH-1A	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30613 HAPWORTH SITE FLD 1A	FAIRFIELD	0.46	0.974	145160 HAPWORTH-2A	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30613 HAPWORTH SITE FLD 1A	FAIRFIELD	2.21	19.8	145161 HAPWORTH-3A	6/29/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	30613 HAPWORTH SITE FLD 1A	FAIRFIELD	1.6	25.4	145259 HAP2A FULL	8/10/2021

AVERAGE IN BOLD = 2.77 33.53

SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	4.6	33.07	141916 TRIANGLE	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	49.6	1080	141574 RIDGE-4	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	10.8	302	141573 RIDGE-3	11/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	16.7	536	141571 RIDGE-1	11/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	3.86	15.58	141559 FIELD 1	7/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	3.18	27.22	141561 NO SPREAD 1	7/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	48.75	45.62	141560 FIELD 2	7/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	21	104	142065 P-2-CUTOFF	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	22.85	150.3	141562 P2	7/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.94	23.29	141557 CS-BARN-1	7/24/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	0.44	4.33	141558 CS-BARN-2	7/24/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	18.4	283	141567 201-3	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	16.8	544	141568 201-4	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	0.506	1.92	142063 G-7	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.7	8.44	142062 G-5	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.38	12.6	142061 G-4	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.91	11.2	142060 G-2	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	0.453	0.762	142114 DR-2	10/16/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	2.34	12.2	142116 PELL-2	10/16/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	2.34	12.2	142116 PELL-2	10/16/2020

SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.75	8.16	142115 PELL-1	10/16/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	1.15	2.66	141915 SISTER FIELD 1	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	25.59	311.11	141914 DENNY 2	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	11.91	144.6	141913 DENNY 1	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	4.44	479	141565 201-1	11/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	3.76	368	141566 201-2	11/9/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	16.4	422	141569 201-5	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	20.2	571	141570 201-6	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	30.6	553	141576 RIDGE-6	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	8.67	202.66	141912 BELOW TRIANGLE 1	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	42.5	1010	141575 RIDGE-5	7/31/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	2.13	331	141572 RIDGE-2	11/4/2021
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	13.9	71.4	142064 LOWER FIELD	10/8/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 OHIO HILL RD-FAIRFIELD	FAIRFIELD	21	104	142065 P-2-CUTOFF	10/8/2020
			AVERAGE IN BOLD =	12.75	229.01		
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 TOZIER #4	FAIRFIELD	25.59	311	141913	8/28/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	141361 TOZIER #4	FAIRFIELD	11.91	145	141913	8/28/2020
			AVERAGE IN BOLD =	18.8	228		
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142099 JULIA 2	FAIRFIELD	13.3	337	142496 JULIA 2A	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142099 JULIA 2	FAIRFIELD	11.4	451	142497 JULIA 2C	10/29/2020
			AVERAGE IN BOLD =	12.4	394		
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142112 WEEKS FIELDS	FAIRFIELD	4.66	7.94	142640 C-3	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142112 WEEKS FIELDS	FAIRFIELD	2.97	5.32	142641 C-4	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142112 WEEKS FIELDS	FAIRFIELD	2.7	4.64	142642 C-5	10/29/2020
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	142112 WEEKS FIELDS	FAIRFIELD	2.3	4.47	142643 C-6	10/29/2020
			AVERAGE IN BOLD =	3.16	5.59		
SLUDGE UTILIZATION SITE	PFAS SOIL SAMPLE AREA	153554 JULIA SITE 3	FAIRFIELD	16.2	376	FIELD J3	11/30/2023

Nathan Saunders

From: [REDACTED]@maine.gov>
Sent: Monday, April 29, 2024 3:31 PM
To: nsaunders51508
Cc: DEP, PFAS
Subject: RE: Missing PFAS numbers for four EGAD#s in Fairfield...
Attachments: Pages from Fairfield W103 and W104 Tozier 3 and 4.pdf; Pages from Fairfield W135 Sludge Storage Wood Tozier4 Julia2.pdf

See responses in blue below.

use PFOA PFOS Avg from 141361 $\frac{PFoA}{12.75} \frac{PFOS}{229.01}$

EGAD#

29494 – Data for this site was put under EGAD # 141361. Some of the EGAD #'s predated our investigation and we have tried to consolidate them. I can ask staff if it makes sense for # 29494 to be deleted to avoid confusion as there is no data associated with this number.

30053 – This site was sampled by a consultant and it appears we don't have the GPS coordinates in EGAD but we are looking into this. The data is as follows:
Take Avg

SITE_NUMBER	SITE_NAME	SAMPLE_POINT_NUMBER	SAMPLE_POINT_NAME	SAMPLE_DATE	PFDA	PFHXS	PFNA	PFOA	PFHpA
30053	JULIA SITE 1	143362	CS-101	2/19/2021 10:30	50.9	ND UJ	8.12	7.8	2.13
30053	JULIA SITE 1	143363	CS-102	2/19/2021 10:45	53.5	ND UJ	9.25	8.81	2.22
30053	JULIA SITE 1	143364	CS-103	2/19/2021 11:00	35.7	ND U	6.82	4.23	1.75

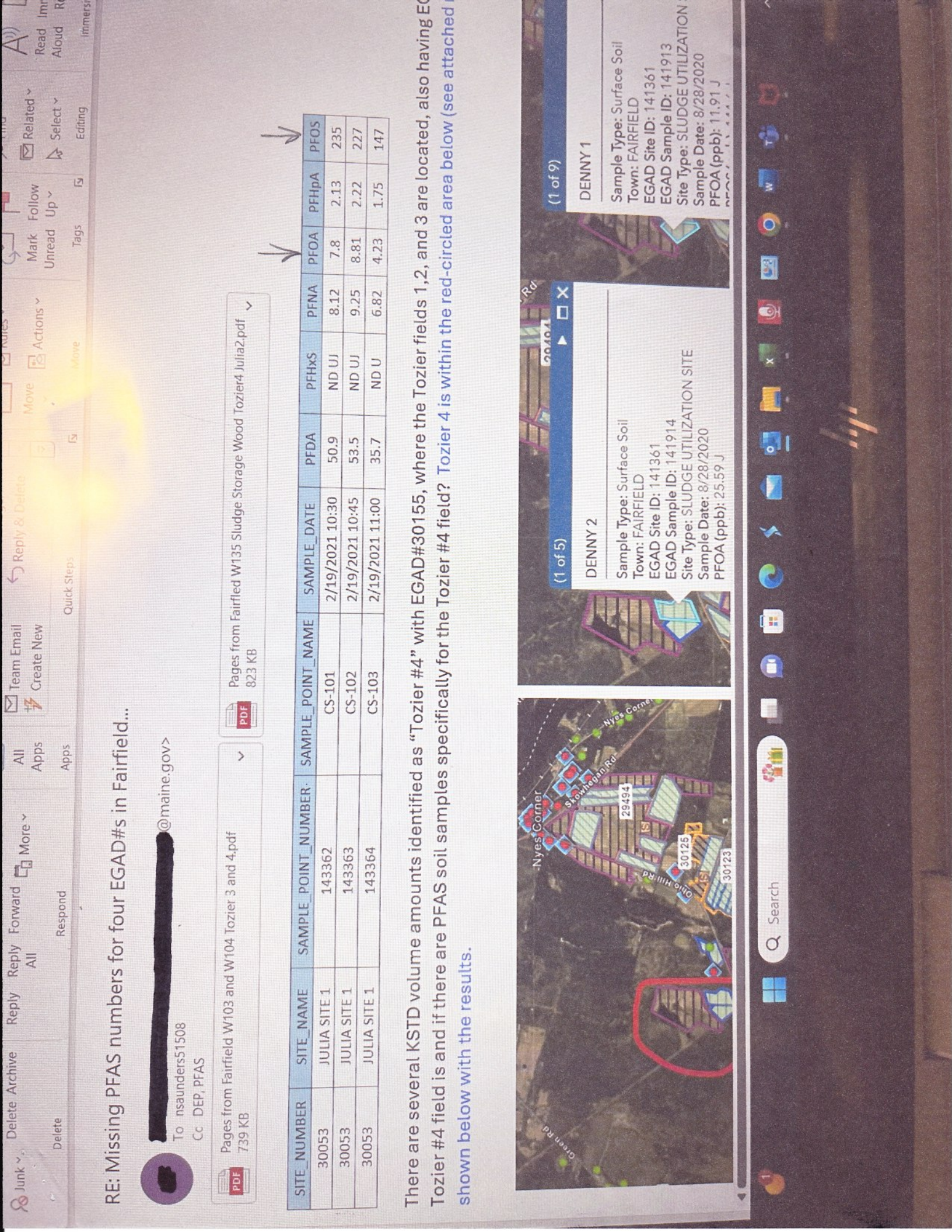
There are several KSTD volume amounts identified as "Tozier #4" with EGAD#30155, where the Tozier fields 1,2, and 3 are located, also having EGAD# 30155. Can you tell me where the Tozier #4 field is and if there are PFAS soil samples specifically for the Tozier #4 field? Tozier 4 is within the red-circled area below (see attached maps also). The areas we sampled are shown below with the results.

Print was forwarded the following column is of email on e-mail and photo of email.

PFOS
235
227
147

$3 \times 20.84 = 6.95 \text{ ppb}$
PFOA

$3 \times 609 = 203 \text{ ppb}$
PFOS



RE: Missing PFAS numbers for four EGAD#s in Fairfield...

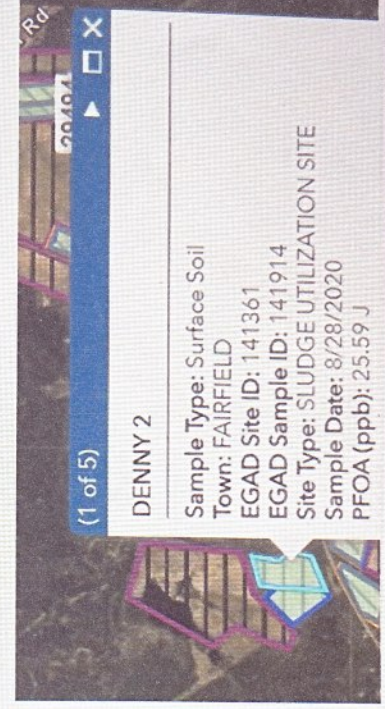
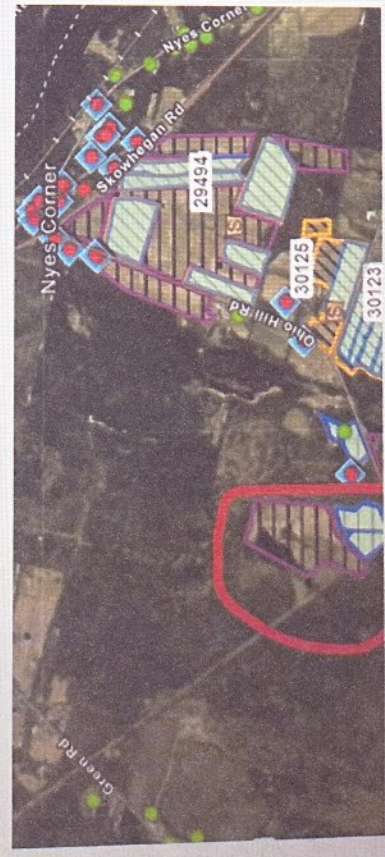
To: [redacted]@maine.gov
Cc: DEP, PFAS

Pages from Fairfield W103 and W104 Tozier 3 and 4.pdf
739 KB

Pages from Fairfield W135 Sludge Storage Wood Tozier4 Julia2.pdf
823 KB

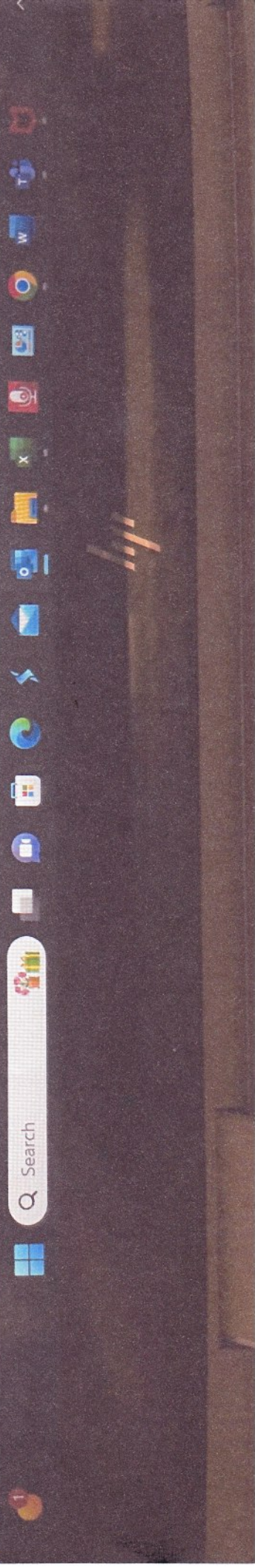
SITE_NUMBER	SITE_NAME	SAMPLE_POINT_NUMBER	SAMPLE_POINT_NAME	SAMPLE_DATE	PFDA	PFHxS	PFNA	PFOA	PFHpA	PFOS
30053	JULIA SITE 1	143362	CS-101	2/19/2021 10:30	50.9	ND UJ	8.12	7.8	2.13	235
30053	JULIA SITE 1	143363	CS-102	2/19/2021 10:45	53.5	ND UJ	9.25	8.81	2.22	227
30053	JULIA SITE 1	143364	CS-103	2/19/2021 11:00	35.7	ND U	6.82	4.23	1.75	147

There are several KSTD volume amounts identified as "Tozier #4" with EGAD#30155, where the Tozier fields 1, 2, and 3 are located, also having EGAD Tozier #4 field is and if there are PFAS soil samples specifically for the Tozier #4 field? Tozier 4 is within the red-circled area below (see attached shown below with the results.



(1 of 5)
DENNY 2
Sample Type: Surface Soil
Town: FAIRFIELD
EGAD Site ID: 141361
EGAD Sample ID: 141914
Site Type: SLUDGE UTILIZATION SITE
Sample Date: 8/28/2020
PFOA (ppb): 25.59 J

(1 of 9)
DENNY 1
Sample Type: Surface Soil
Town: FAIRFIELD
EGAD Site ID: 141361
EGAD Sample ID: 141913
Site Type: SLUDGE UTILIZATION
Sample Date: 8/28/2020
PFOA (ppb): 11.91 J





(1 of 5)

DENNY 2

Sample Type: Surface Soil
 Town: FAIRFIELD
 EGAD Site ID: 141361
 EGAD Sample ID: 141914
 Site Type: SLUDGE UTILIZATION SITE
 Sample Date: 8/28/2020
 PFOA (ppb): 25.59 J
 PFOS (ppb): 311.11 J
 PFBS (ppb): ND UJ

Zoom to

(1 of 9)

DENNY 1

Sample Type: Surface Soil
 Town: FAIRFIELD
 EGAD Site ID: 141361
 EGAD Sample ID: 141913
 Site Type: SLUDGE UTILIZATION SITE
 Sample Date: 8/28/2020
 PFOA (ppb): 11.91 J
 PFOS (ppb): 144.6 J
 PFBS (ppb): ND UJ

Zoom to

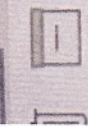
Tozier #4
 PFOA
 2559
 + 11.91
 2 | 3750
 = 18.75

PFOS
 311.11
 144.6
 2 | 455.71
 = 228

153554 – This data is being reviewed by our Chemistry Unit and will be posted in the near future.

Does soil sample data (specifically PFOA and PFOS data) exist for these EGAD#s, and can you tell me anything about the “Tozier #4” field?

Message Developer Help



Archive



Reply



Reply All



Forward



Forward All



All Apps



Archive



To Manager



Team Email

ete

Respond

Apps

Quick Steps

Move

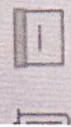
Tags

Editing

Immersive

Language

Zoom



Archive



Reply



Reply All



Forward



Forward All



All Apps



Archive



To Manager



Team Email



Move



Move



Mark Unread



Follow Up



Follow Up



Immersive Reader



Immersive Reader



Immersive Reader



Immersive Reader



Translate



Zoom

Missing PFAS numbers for four EGAD#s in Fairfield...

[Redacted]@maine.gov on behalf of

To: nsaunders51508

Cc: DEP, PFAS

This message has been replied to or forwarded.

Here are the soil results for Julia 3. They should appear on our map in the near future.

NUMBER	SITE_NAME	SAMPLE_POINT_NUMBER	SAMPLE_POINT_NAME	SAMPLE_DATE	PFDA	PFHxS	PFNA	PFOA	PFHpA	PFOS
554	JULIA SITE 3	156615	FIELD J3	11/30/2023	113 J	0.126 J	24.4 J	16.2 J	12.2	376

Nathan Saunders <nsaunders51508@roadrunner.com>

Monday, April 29, 2024 8:30 PM

[Redacted]@maine.gov

PFAS <PFAS.DEP@maine.gov>

RE: Missing PFAS numbers for four EGAD#s in Fairfield...

CAUTION: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and



SLUDGE UTILIZATION SITE

TOZIER # 4

Owner: Marilyn B. Tozier

Scale 1" = 660' - March 1982

(Joins sheet 73)



(Joins sheet 80)

K.S.T.D.
 SLUDGE UTILIZATION
 WINTER STORAGE
 Tozier # 4
 #00 - W103
 Fairfield, Sept. 1982

Appendix E

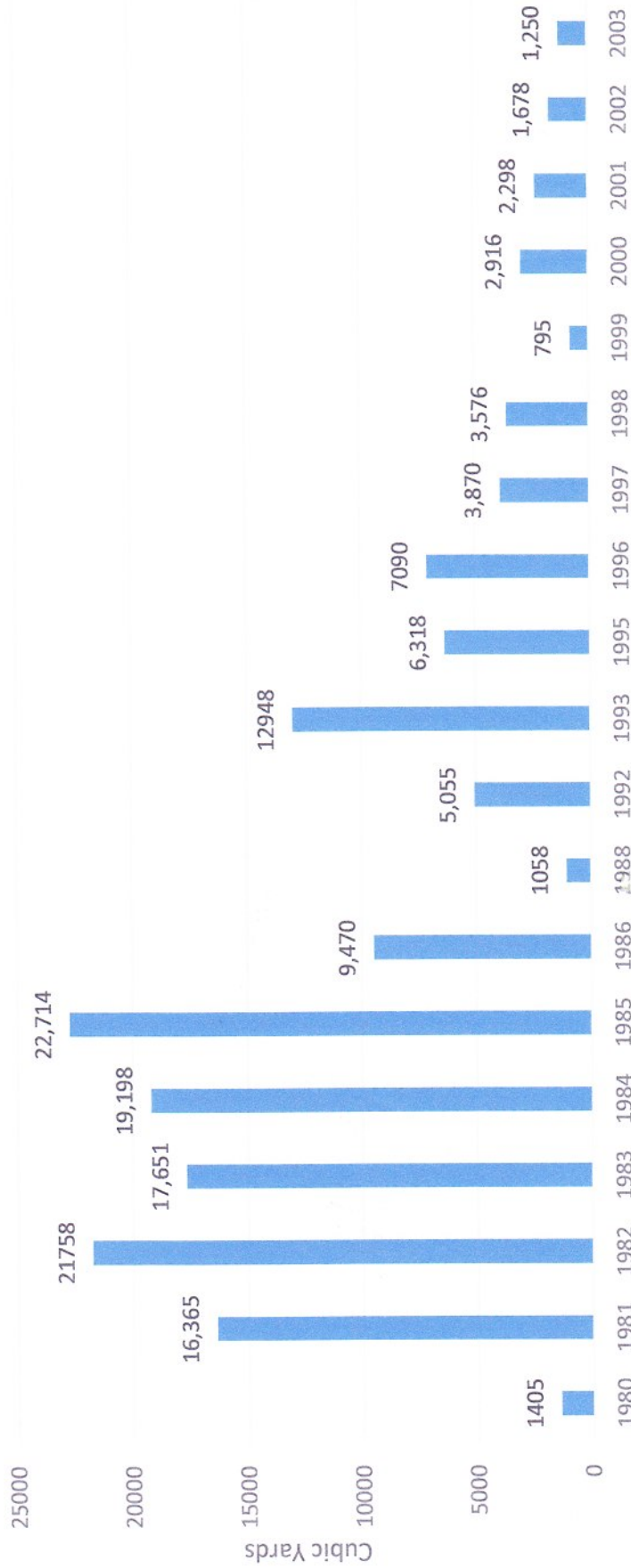
Calculations Spreadsheet

Kennebec Sanitary TD	1997	Sampson	30124	Fairfield	2-2	154								
Kennebec Sanitary TD	1998	Sampson	30124	Fairfield	1-1	381								
Kennebec Sanitary TD	1998	Sampson	30124	Fairfield	1-2	381								
Kennebec Sanitary TD	1998	Sampson	30124	Fairfield	3	154								
Kennebec Sanitary TD	2000	Sampson	30124	Fairfield	F-1A	588								
Kennebec Sanitary TD	2000	Sampson	30124	Fairfield	F-1B	588								
Kennebec Sanitary TD	2000	Sampson	30124	Fairfield	F-3	580								
Kennebec Sanitary TD	2000	Sampson	30124	Fairfield	F-2-1	125								
Kennebec Sanitary TD	2000	Sampson	30124	Fairfield	F-2-2	125								
Kennebec Sanitary TD	2001	Sampson	30124	Fairfield	F-1A	256								
Kennebec Sanitary TD	2001	Sampson	30124	Fairfield	F-1B	256								
Kennebec Sanitary TD	2001	Sampson	30124	Fairfield	F-3	315								
Kennebec Sanitary TD	2001	Sampson	30124	Fairfield	F-2-1	96								
Kennebec Sanitary TD	2001	Sampson	30124	Fairfield	F-2-2	96								
Kennebec Sanitary TD	2002	Sampson	30124	Fairfield	F-3	207								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	P-1	700								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	5-1	452								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	5-2	388								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	4-4	540								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	4-6	660								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	P2	99								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	P3	99								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	P4	26								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	5-3	60								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	5-4	42								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	5-5	42								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	6-1	517								
Kennebec Sanitary TD	1995	Emery	30369	Fairfield	6-2	523								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	P-1	610								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-1&2	690								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-3	146								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-3	180								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-4	146								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-4	135								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-5	135								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	5-5	239								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	6-1	458								
Kennebec Sanitary TD	1996	Emery	30369	Fairfield	6-2	442								
Kennebec Sanitary TD	1997	Emery	30369	Fairfield	6-1	520								
Kennebec Sanitary TD	1997	Emery	30369	Fairfield	6-2	520								
Kennebec Sanitary TD	1998	Emery	30369	Fairfield	6-1	270								
Kennebec Sanitary TD	1998	Emery	30369	Fairfield	6-2	270								
Kennebec Sanitary TD	1999	Emery	30369	Fairfield	5-3	265								
Kennebec Sanitary TD	1999	Emery	30369	Fairfield	5-4	265								
Kennebec Sanitary TD	1999	Emery	30369	Fairfield	5-5	265								
Kennebec Sanitary TD	2000	Emery	30369	Fairfield	4A	535								
Kennebec Sanitary TD	2000	Emery	30369	Fairfield	4B	535								
Kennebec Sanitary TD	1984	Hapworth #1	30613	Fairfield	4B	2,065								
Kennebec Sanitary TD	1985	Hapworth #1	30613	Fairfield	3,402	784								
Kennebec Sanitary TD	1985	Hapworth #1-A	30613	Fairfield		1,691								
Kennebec Sanitary TD	1986	Hapworth #1-A	30613	Fairfield		624								
Kennebec Sanitary TD	1981	Totter #1	141361	Fairfield		2,705								
Kennebec Sanitary TD	1982	Totter #1	141361	Fairfield		3,660								
Kennebec Sanitary TD	1983	Totter #1	141361	Fairfield		3,600								
Kennebec Sanitary TD	1984	Totter #1	141361	Fairfield		1,699								
Kennebec Sanitary TD	1985	Totter #1	141361	Fairfield		261								
Kennebec Sanitary TD	1992	Totter	141361	Fairfield	1	720								
Kennebec Sanitary TD	1992	Totter	141361	Fairfield	1A	900								
Kennebec Sanitary TD	1992	Totter	141361	Fairfield	1A	240								
Kennebec Sanitary TD	1992	Totter	141361	Fairfield	1A	280								
Kennebec Sanitary TD	1992	Totter	141361	Fairfield	3	1,325								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	3	1,160								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	1	420								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	1	255								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	1	260								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	1A	244								
Kennebec Sanitary TD	1993	Totter	141361	Fairfield	1A	240								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	1-1	76								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	1-8	44								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	1A-1	86								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	1A-5	34								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	2A	97								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	2B	162								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	2C	91								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	2D	97								
Kennebec Sanitary TD	1995	Totter	141361	Fairfield	2E	129								
12,460						336,470	56.37	18,963,995	30.16	0.000000030163	349.13	0.000000049133	0.572017314582	6.6209562927320
10,773						290,871	56.37	16,396,398	4.91	0.000000004909	60.78	0.000000060781	0.086482351539	0.996585699465
8,656						233,712	56.37	13,174,345	2.77	0.000000002772	38.53	0.000000038535	0.096519285560	0.441799039461

Appendix F

KSTD Sludge Spread Per Year

VOLUME OF KSTD SLUDGE SPREAD IN FAIRFIELD, MAINE PER YEAR

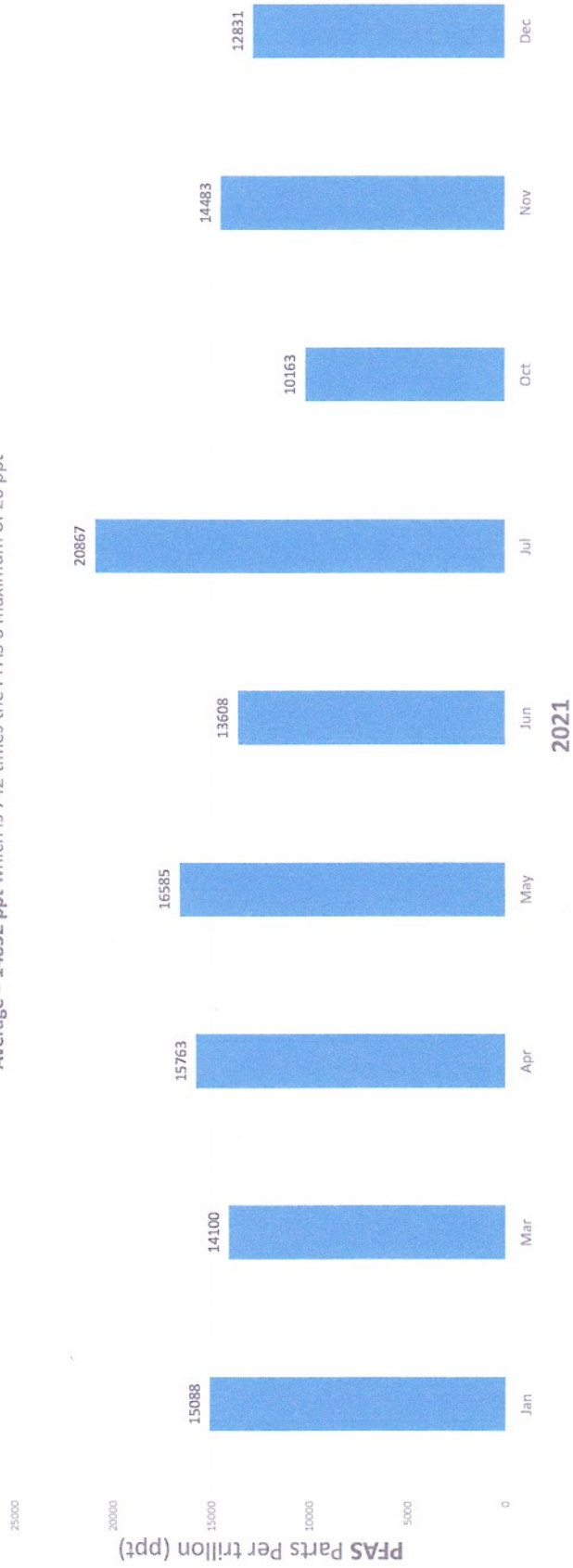


Majority occurred in the 1980s.

Appendix G

Howe Road Home Average PFAS6 Well Test Results 2021, 2022,
2023, 2024, 2021-2025

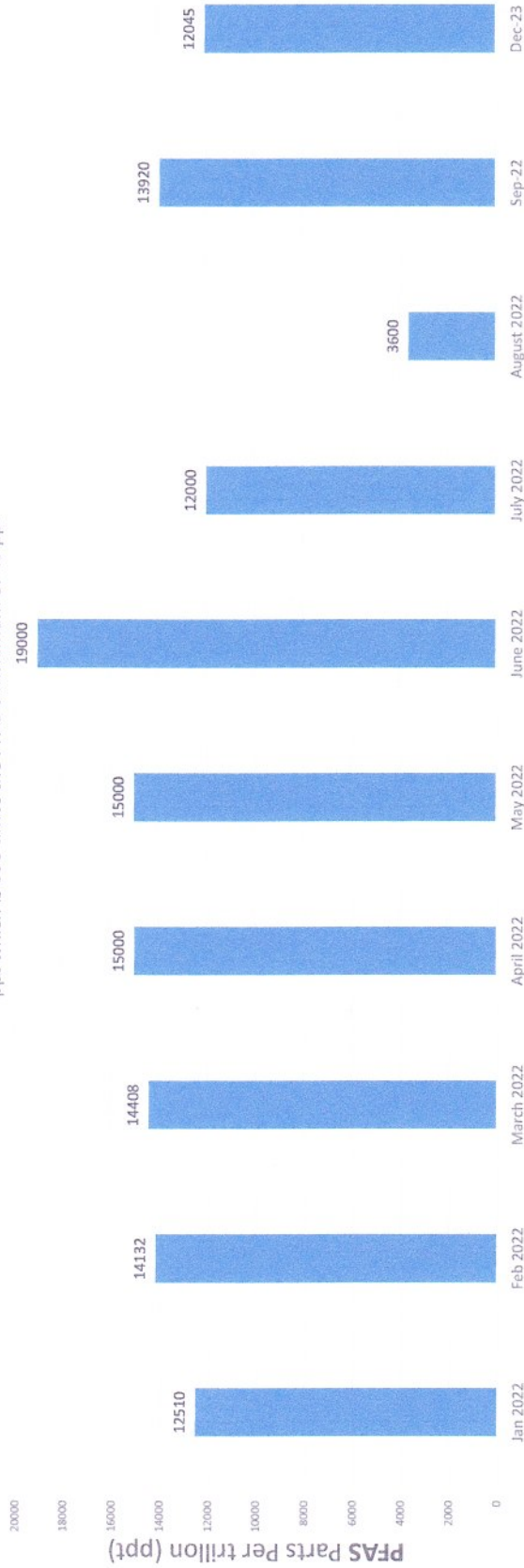
Howe Road, Fairfield, Maine - Raw Well Water
Six PFAS Compounds Total - Monthly vs. Maine's 20 ppt Limit
Average = 14832 ppt which is 742 times the PFAS 6 maximum of 20 ppt



Howe Road, Fairfield, Maine - Raw Well Water
Six PFAS Compounds Total - Monthly vs. Maine's 20 ppt Limit

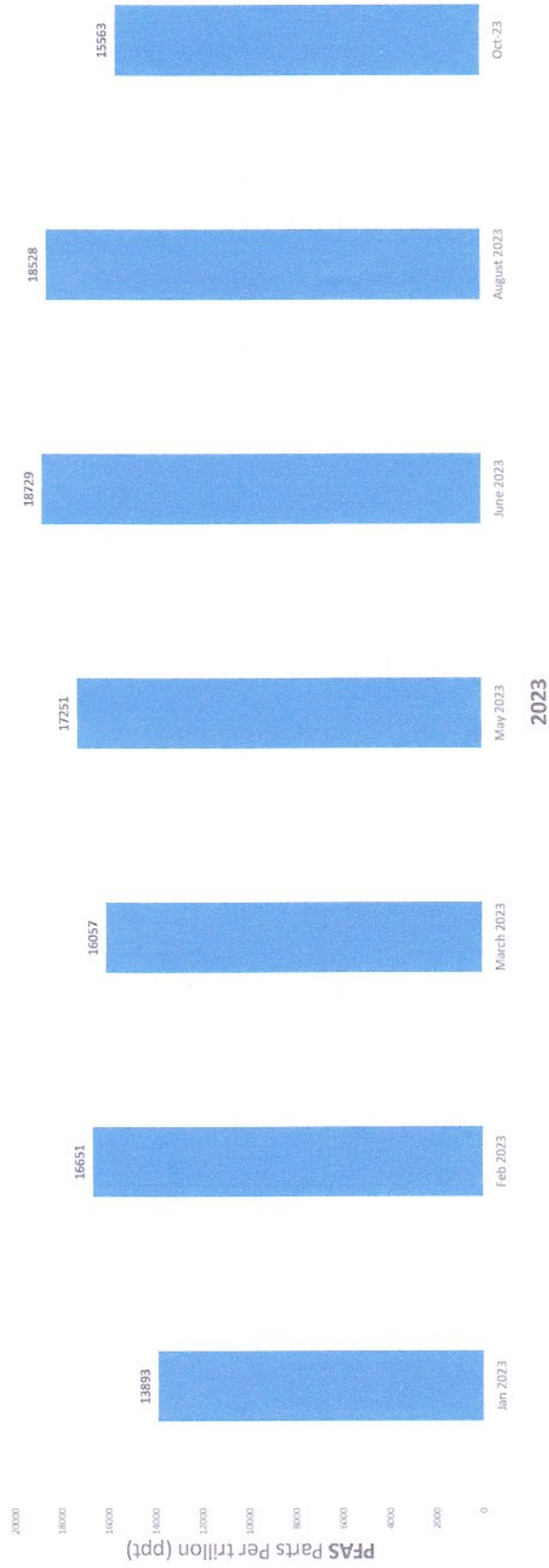
Average = 13162

ppt which is 658 times the PFAS 6 maximum of 20 ppt



2022

Howe Road, Fairfield, Maine - Raw Well Water
Six PFAS Compounds Total - Monthly vs. Maine's 20 ppt Limit
Average = **16,667 ppt**
which is 833 times the PFAS 6 maximum of 20 ppt




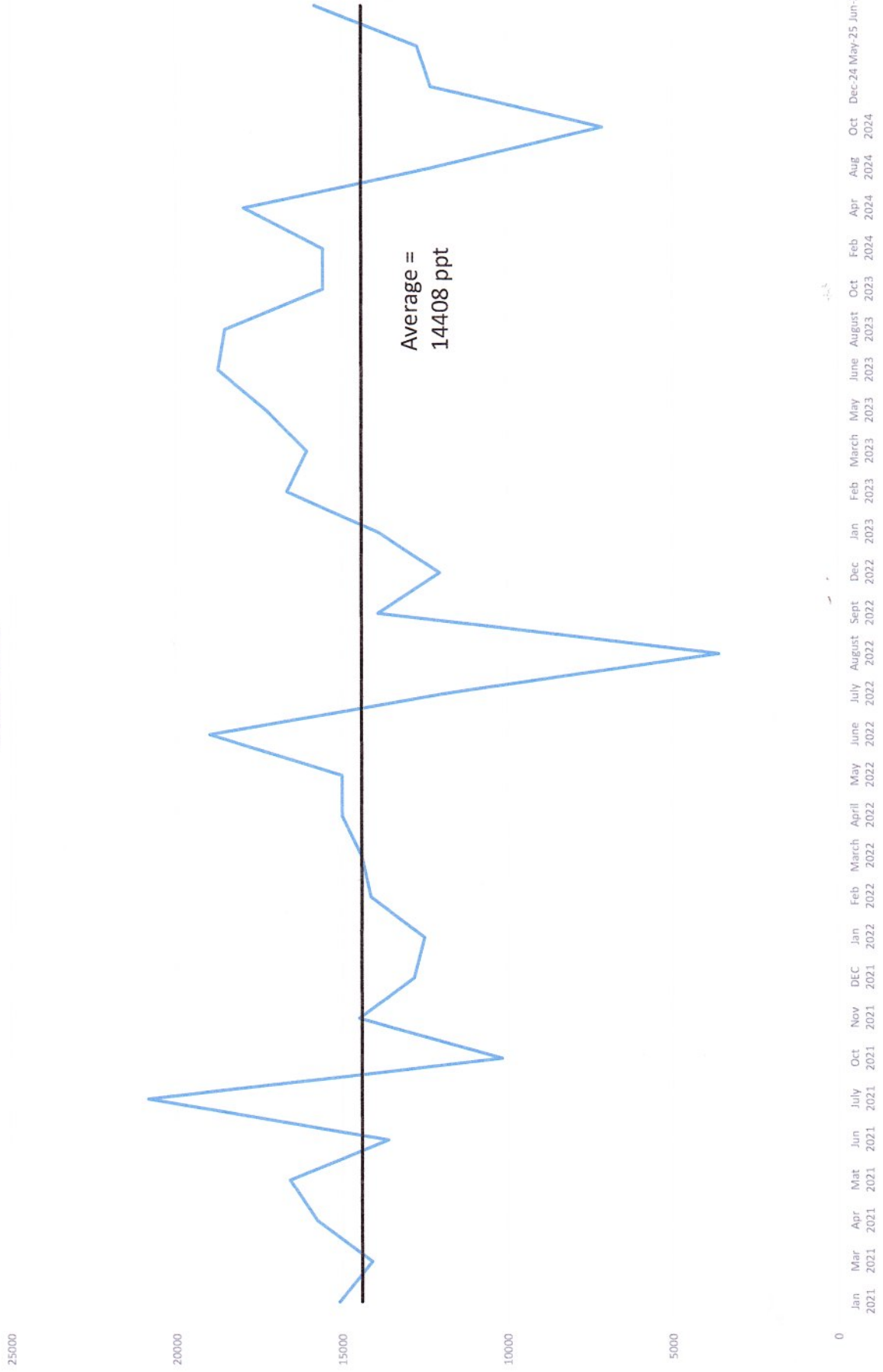
2023

Howe Road, Fairfield, Maine - Raw Well Water
Six PFAS Compounds Total - Monthly vs. Maine's 20 ppt Limit
Average = 13038
ppt which is 652 times the PFAS 6 maximum of 20 ppt



2024

Maine PFAS6 Levels at  Howe Road
Fairfield, Maine
2021-2025



Appendix H

Highest Well PFAS6 Levels in Maine 8/27/23

8/17/23 Out of 1156 wells tested by the ME DEP for PFA56, 17 out of the top 20 most contaminated wells are in Fairfield; 14 of which are right around the Howe Road. 8 of the 10 Nathan Summers P.F. highest contaminated wells in the state are on or near the Howe Rd in Fairfield. *Not A Actual*

FILTERED_STATUS	GREATER_THAN_20_PPT	MCD	SITE_NAME	SUM_OF_6_PFA56_CONCENTRATION	FILTRATION_SYSTEM
NOT FILTERED	YES	FAIRFIELD	MACKAY & WOOD SITE 2	34400	YES
UNKNOWN	YES	FAIRFIELD	JULIA 2	32500	NO
NOT FILTERED	YES	FAIRFIELD	JULIA 2	29600	YES
NOT FILTERED	YES	ALBION	PEARSON FIELD	28300	YES
NOT FILTERED	YES	FAIRFIELD	MACKAY & WOOD SITE 2	27800	YES
NOT FILTERED	YES	UNITY TWP	JULIA 2	26600	YES
NOT FILTERED	YES	FAIRFIELD	GINN SITE FLD 1	24600	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	24000	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	20500	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	20200	YES
NOT FILTERED	YES	FAIRFIELD	MACKAY & WOOD SITE 2	19000	YES
NOT FILTERED	YES	FAIRFIELD	OHIO HILL RD-FAIRFIELD	18800	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	17600	YES
NOT FILTERED	YES	ALBION	PERKINS SITE FIELDS - ALBION	17000	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	16800	YES
NOT FILTERED	YES	FAIRFIELD	OHIO HILL RD-FAIRFIELD	16500	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	13600	YES
NOT FILTERED	YES	FAIRFIELD	MACKAY & WOOD SITE 2	13000	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	12300	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	22200	YES
NOT FILTERED	YES	FAIRFIELD	JULIA 2	16200	YES
NOT FILTERED	NO	WATERVILLE	WATERVILLE LANDFILL		NO
NOT FILTERED	NO	PLYMOUTH	SOIL PREP INC COMPOST-SEPTAGE-SPRAY IRRIGATION		NO
NOT FILTERED	NO	PLYMOUTH	SOIL PREP INC COMPOST-SEPTAGE-SPRAY IRRIGATION		NO
NOT FILTERED	NO	CANAAN	SWAIN SITES		NO
UNKNOWN	NO	ABBOT	ABBOT LANDFILL		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	UNITY	HUNTER SITE FIELDS		NO
NOT FILTERED	NO	CANAAN	JERRY LONGSTREET SEPTAGE SITE		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO
NOT FILTERED	NO	CORINNA	SMITH SITE HOME FIELDS		NO

Ppt.
parts per trillion

Data from ME DEP PFAS MAP online

WELL TYPE	WELL ID	LOCATION_A	LOCATION_M	DATA_SOURCE	LATITUDE	LONGITUDE	MCD	SITE_NUMBER	SITE_NAME	SAMPLE_POINT_NAME	SAMPLE_POINT_WEB	SAMPLE_POINT_TYPE	FILTERED STATUS	SUM_OF_B_PAS_COP	FILTRATION_SYSTEM	K	Y
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6071	-89.6689	FAIRFIELD	30055	MACKAY & WOOD SITE	144306 DW-2	PRIVATE WATER SUPPLY	NOT FILTERED	39600	YES	448071.3079000004	4938032.26100001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6184	-89.6654	FAIRFIELD	142099	JULIA 2	142099 DW-2	PRIVATE WATER SUPPLY	NOT FILTERED	35600	YES	450351.984099996	4940661.18099999	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6181	-89.6638	FAIRFIELD	30143	GRN SITE FLD 1	143341 DW-2	PRIVATE WATER SUPPLY	NOT FILTERED	35500	YES	457006.279199999	4940019.761	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6144	-89.6636	FAIRFIELD	142099	JULIA 2	145147 DW-2	PRIVATE WATER SUPPLY	UNKNOWN	35500	NO	450522.2393000003	4940004.67510001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6203	-89.6625	FAIRFIELD	30055	MACKAY & WOOD SITE	143984 DW-2	PRIVATE WATER SUPPLY	NOT FILTERED	29400	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6214	-89.6625	FAIRFIELD	142099	JULIA 2	142099 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	26000	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6118	-89.6624	FAIRFIELD	30055	MACKAY & WOOD SITE	142099 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	26000	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6118	-89.6624	FAIRFIELD	142099	JULIA 2	142099 DW-2	PRIVATE WATER SUPPLY	NOT FILTERED	21000	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.5849	-89.6581	ALBION	142099	JULIA 2	142099 DW-1	PRIVATE WATER SUPPLY	NOT FILTERED	21000	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6111	-89.6581	ALBION	27772	PERKINS SITE FIELDS	146554 DW-4	PRIVATE WATER SUPPLY	NOT FILTERED	20700	YES	443014.1907000004	4940560.897	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6032	-89.6177	FAIRFIELD	142099	JULIA 2	142099 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	20000	YES	450266.441399999	4938038.95	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6113	-89.6136	ALBION	142099	JULIA 2	142099 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	19600	YES	451023.0034999994	4944611.0271000005	
DOMESTIC WELL	DUG	WITHIN 1M	DIGITIZED	NDSP PFAS INVESTIG	44.6176	-89.6116	ALBION	33469	PEARSON FIELD	147033 DW-4	PRIVATE WATER SUPPLY	NOT FILTERED	19300	YES	450326.9639000004	4940148.102700001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6109	-89.6095	FAIRFIELD	30055	MACKAY & WOOD SITE	144599 DW-18	PRIVATE WATER SUPPLY	NOT FILTERED	18000	YES	464117.506099999	4929451.153	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6177	-89.6051	FAIRFIELD	142099	JULIA 2	142099 DW-31	PRIVATE WATER SUPPLY	NOT FILTERED	18000	YES	447154.8484000004	4939442.467	
DOMESTIC WELL	DUG	WITHIN 1M	BAD ELF GPS	NDSP PFAS INVESTIG	44.6186	-89.6116	FAIRFIELD	146316	HARSELL SITE	146597 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	17200	YES	404040.034	4940072.146700001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6124	-89.6035	FAIRFIELD	142099	JULIA 2	142099 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	15500	YES	469898.549	4919560.318	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.60	-89.6158	FAIRFIELD	141921	OHIO HILL RD-FAIRFIELD	141921 DW-3	PRIVATE WATER SUPPLY	NOT FILTERED	14100	YES	451170.962	4944264.42940001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6187	-89.6238	FAIRFIELD	142099	JULIA 2	142099 DW-34	PRIVATE WATER SUPPLY	NOT FILTERED	13400	YES	450317.700899999	4940504.056	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6181	-89.6248	FAIRFIELD	142099	JULIA 2	142776 DW-6	PRIVATE WATER SUPPLY	NOT FILTERED	13400	YES	450347.6232000003	4942961.15800001	
DOMESTIC WELL	DUG	WITHIN 1M	GRS MAPPING GRADE	NDSP PFAS INVESTIG	44.6183	-89.6251	FAIRFIELD	142099	JULIA 2	143880 DW-74	PRIVATE WATER SUPPLY	NOT FILTERED	10100	YES	450306.5447000004	4940736.79770001	

SAMMERS

1/17/25
 of 2835 well tests taken by the DEP.
 V 10 of the 20 most PFAS contaminated wells in the state are on the Howe Rd.
 Our well is 21st most PFAS contaminated in the state

Appendix I

Highest Land/Field PFAS6 Levels in Maine 8/27/23

8/27/23 Out of 513 sites that MDEP has sampled soil for PFAS, 9 out of the ten most highly contaminated sites (also 15 out of the top 20) are in Fairfield, spread with Kenesec Sanitary Treatment District sludge. The most highly contaminated site

MCD	SITE_NUMBER	SITE_NAME	SAMPLE_POINT_SAMPLE_POINT_NAME	SAMPLE_POINT_WE_SAMPLE_DATE	PFBS	PFOA	PFOS
HAMPDEN	147006	HAMPDEN FIRE TRAINING AREA	147012 COMPOSITE	4/4/2022	2.59 J	195	4150
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141574 RIDGE-4	7/31/2020	0.424 J	49.6	1080
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141575 RIDGE-5	7/31/2020	ND U	42.5	1010
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141573 RIDGE-3	7/31/2020	ND U	38.7	981
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141572 RIDGE-2	7/31/2020	0.301 J	30.3	792
FAIRFIELD	30124	SAMPSON_KSTD	SAMPSON-F2-1	10/29/2020	ND U	58.4 J	649
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141571 RIDGE-1	7/31/2020	ND U	21.4	579
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141570 201-6	7/31/2020	ND U	20.2	571
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141576 RIDGE-6	7/31/2020	ND U	30.6	553
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141568 201-4	7/31/2020	ND U	16.8	544
UNITY TWP	30143	GINN SITE FLD 1	HR GINN 4	10/29/2020	ND U	26.1 J	493
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141566 201-2	7/31/2020	ND U	31.3	479
FAIRFIELD	142099	JULIA 2	JULIA 2C	10/29/2020	ND U	11.4 J	451
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141569 201-5	7/31/2020	ND U	16.4	422
FAIRFIELD	30124	SAMPSON_KSTD	SAMPSON 3	10/29/2020	0.141 J	31 J	395
UNITY	29202	BARDEN SITE FIELDS	FIELD 9A	5/17/2022	ND UJ	13.4	350
FAIRFIELD	142099	JULIA 2	JULIA 2A	10/29/2020	0.092 J	13.3 J	337
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141914 DENNY 2	8/28/2020	ND UJ	25.59 J	311
BRIDGTON	30759	FRANK SNOW SEPTAGE SITE	SNOW SEPTAGE	7/14/2022	0.415 J	24.3 J	305
CANAAN	30245	SWAIN SITES	FIELD 2-1	4/13/2022	ND UJ	18.9	304
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141565 201-1	7/31/2020	ND U	11.7	294
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141567 201-3	7/31/2020	0.712	18.4	283
FAIRFIELD	30143	GINN SITE FLD 1	MEANS 1	11/18/2021	ND UJ	17	275
FAIRFIELD	30369	MIDDLE ROAD-FAIRFIELD	5-1_5-2	10/29/2020	ND U	12.3 J	232
UNITY TWP	30143	GINN SITE FLD 1	HR GINN 5	10/29/2020	0.102 J	34.1 J	206
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	141912 BELOW TRIANGLE 1	8/28/2020	ND UJ	8.67 J	203
UNITY	29202	BARDEN SITE FIELDS	FIELD 6A + 6B	5/17/2022	0.104 J	6.41	199
CANAAN	30245	SWAIN SITES	FIELD 8	5/17/2022	ND UJ	2.9	189
BENTON	30564	WOODWORTH SITE	FIELD 2-2	4/13/2022	ND U	27.9	183
FAIRFIELD	30156	H P WOOD SITE	WOODWORTH 1B	6/29/2021	0.074 J	58	181
ALBION	27825	TAKACS SITE FIELDS	WOOD A1	10/29/2020	ND U	6.27 J	180
UNITY	29202	BARDEN SITE FIELDS	T-12	5/3/2022	ND U	8.39 J	175
CANAAN	30245	SWAIN SITES	FIELD 11	5/17/2022	ND UJ	3.72	169
FAIRFIELD	30155	TOZIER SITE 3	FIELD 3-2	7/6/2022	0.1 J	21 J	165
FAIRFIELD	30369	MIDDLE ROAD-FAIRFIELD	TOZIER FIELD 1	6/7/2022	ND U	5.13 J	159
SIDNEY	30016	KRAMER SITE FIELDS	CROCKET 4-6	12/3/2020	ND U	7.92 B	155
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	FIELD 2	4/29/2022	0.122 J	40.6	155
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	P2	7/28/2020	0.12 J	22.85	150
ALBION	27825	TAKACS SITE FIELDS	DENNY 1	8/28/2020	ND UJ	11.91 J	145
FAIRFIELD	30155	TOZIER SITE 3	T-2	5/3/2022	ND U	6.15 J	143
WATERVILLE	27715	WATERVILLE LANDFILL	TOZIER FIELD 2-3	6/7/2022	ND U	4.89 J	139
FAIRFIELD	141361	OHIO HILL RD-FAIRFIELD	COMPOSITE SITE C	9/28/2022	ND UJ	30.5 J	107
WATERVILLE	27715	WATERVILLE LANDFILL	P-2-CUTOFF	10/8/2020	0.065 J	21	104
BALDWIN	27216	BALDWIN SEPTIC WASTE DISPOSAL	COMPOSITE SITE D	9/28/2022	ND UJ	10.1 J	100
			150476 N WILDERNESS 10_2	8/1/2022	ND UJ	0.245 J	ND UJ

* was in Hampden where fire fighting teams was used. Note that KSTP receives 40-50% of it's wastewater from Hahkmaki. Nathan Saunders PE. Matt Adams * ppb points per billion ppt = ppb x 1000 ppt = ppb x 1000 ppt = ppb x 1000 ppt = ppb x 1000 ppt

Data from ME DEP PFAS MAP online.

Appendix J

Average PFAS6 Level of 21 Wells On or Near Howe Road, Fairfield,
Maine 2023

Average PFAS on Howe and Joy Roads - Fairfield Maine 2023

22,000		
25000		
3240		
7810		
536		
13600		
117		
39		
122		
17600		
7460		
16800		
20200		
32500		
29600		
20500		
16200		
12300		
207		
24000		
49		
12,851	269,880	12,851