Table 6-2
Potential Chemical-Specific Applicable or Relevant and Appropriate Requirements (ARARs) and Criteria To Be Considered (TBCs)

PFAS CERCLA Remedial Investigation Site Characterization Summary Report
Former Loring Air Force Base
Limestone, Maine

Media	Chemicals	Regulation	Summary of Regulatory Requirement	Potential Substantive Requirement
Groundwater	PFOA PFOS PFNA PFHxS HFPO-DA (Gen-X) Hazard Index of Mixture	United States Environmental Protection Agency (USEPA) - Per- and Polyfluoroalkyl Substances (PFAS) National Primary Drinking Water Regulation 89 FR 32532, April 26, 2024, Vol. 89, No. 82	MCLs have been promulgated for five different per- and polyfluoroalkyl substances and a unitless hazardous index based on a mixture of per- and polyfluoroalkyl substances. They are considered relevant and appropriate for community water systems and non-transient non-community water systems.	Specific to public supply drinking water: PFOA: 0.004 µg/L PFOS: 0.004 µg/L PFHxS: 0.010 µg/L HFPO-DA (Gen-X): 0.010 µg/L PFNA: 0.010 µg/L Hazard Index of Mixture: 1 unitless
Drinking Water	Sum of 6 compounds PFOA PFOS PFHpA PFNA PFDA PFHxS	State of Maine. Maine Department of Environmental Protection Remedial Action Guidelines November 15, 2023. Pursuant to Resolve 2021, chapter 82. 130th Maine Legislature as L.D. 129 Resolve to Protect Consumers of Public Drinking Water by Establishing Maximum Contaminant Levels for Certain Substances and Contaminants	Maine adopted an emergency interim drinking water standard of 20 ng/L for the sum of six (6) PFAS compounds on June, 21st, 2021. The 6 compounds include PFOA, PFOS, PFHpA, PFHxS, PFNA, and PFDA. The standard is considered relevant and appropriate for drinking water and residential groundwater receptors.	Specific to drinking water and residential groundwater receptors in Maine: Sum of 6 compounds 20 ng/L
Drinking Water	PFOS PFOA	USEPA 40 Code of Federal Regulations (CFR) Parts 141 National Primary Drinking Water Regulations and 40 CFR Parts 142 National Primary Drinking Water Regulations Implementation	The USEPA National Primary Drinking Water Regulations and Implementation (40 CFR Parts 141 and 142) set standards for drinking water quality in the United States. These regulations require that public water systems monitor and treat water to ensure it meets specific health-based standards for contaminants.	PFOA: 4 parts per trillion (ppt) PFOS: 4 ppt
Surface Water	PFOS PFOA	USEPA Office of Water, Office of Science and Technology, Health and Ecological Criteria Division -Acute Freshwater Aquatic Life Criteria (Criterion Maximum Concentration [CMC]); September 2024	Acute aquatic life criteria (CMC) represent the highest concentration of a pollutant in surface water that an aquatic organism can be exposed to briefly without adverse effects. CMCs are based on a 1-hour average exposure and should not be exceeded more than once every three years, on average. Freshwater criteria for PFOA and PFOS may also be expressed as concentrations in invertebrate whole-body tissues, fish whole-body tissues, or fish muscle	PFOA – 3,100 µg/L PFOS – 71 µg/L

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Surface Water	PFBA PFHxA PFNA PFDA PFBS PFHxS 8:2 FTUCA 7:3 FTCA	USEPA Office of Water, Office of Science and Technology, Health and Ecological Criteria Division -Acute Freshwater Aquatic Life Benchmarks, September 2024	Acute aquatic life benchmarks were developed to protect aquatic organisms from short term exposure to PFAS. These benchmarks are used when there is insufficient data to derive formal water quality criteria under standard EPA methods. Acute benchmarks are based on 1-hour average concentrations and are not to be exceeded more than once every three years, on average.	PFBA – 5,300 µg/L PFHxA – 4,800 µg/L PFNA – 650 µg/L PFDA – 500 µg/L PFBS – 5,000 µg/L PFHxS – 210 µg/L 8:2 FTUCA – 37 µg/L 7:3 FTCA – 12 µg/L
Surface Water	PFOS PFOA	USEPA Office of Water, Office of Science and Technology, Health and Ecological Criteria Division - Chronic Freshwater Aquatic Life Criteria (Criterion Continuous Concentration [CCC])	The Chronic Freshwater Aquatic Life Criteria (CCC) represents the highest concentration of a pollutant an aquatic organism can be exposed to continuously over a 4-day period without long term adverse effects. The CCC are based on a 4-day average duration and should not be exceeded more than once every three years, on average. Freshwater aquatic life criteria for PFOA and PFOS can also be expressed as concentrations in invertebrate whole-body tissues, fish whole-body tissues, or fish muscle.	PFOA – 100 µg/L PFOS – 0.250 µg/L
Soil	PFOA PFOS PFHxA PFNA PFBA PFBS PFHxS	State of Maine. Maine Department of Environmental Protection Remedial Action Guidelines November 15, 2023. Pursuant to Resolve 2021, chapter 82. 130th Maine Legislature as L.D. 129 Resolve to Protect Consumers of Public Drinking Water by Establishing Maximum Contaminant Levels for Certain Substances and Contaminants	As part of adopting the emergency interim drinking water standard of 20 ng/L, Maine issued soil leaching standards for the protection of groundwater for 7 PFAS related compounds including 4 of the sum of 6 PFAS compounds. These standards are considered relevant for the protection of groundwater, recreators in sediment, and construction workers.	Specific to soil in the State of Maine: Leaching to Groundwater PFOA: 0.017 mg/kg PFOS 0.001 mg/kg PFHxA 0.13 mg/kg PFNA: 0.0046 mg/kg PFHxS: 0.00047 mg/kg PFBA: 0.36 mg/kg PFBS 0.11 mg/kg Maintenance Working Direct Contact Risk-Based Concentration PFOA: 1.3 mg/kg PFNA: 0.9 mg/kg PFHxS: 0.9 mg/kg PFOS: 0.6 mg/kg
Sediment	PFAS	Not Applicable	The USEPA and the State of Maine have not established standards for sediment. Currently a risk-based evaluation.	Not Applicable

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Fish Tissue	PFOS	Maine Center for Disease Control and Preventiion (MRSA 22 §1696 I)	The concentration at which the Maine Center for Disease Control and Prevention considers the need to issue a fish consumption advisory. Guidelines are specific to individual waterbodies and species.	PFOS 3.5 ng/g
Investigation Derived Waste	PFAS	DoD Policy USEPA OSWER Publication 9345.3-03 FS	PFAS is not a RCRA hazardous waste yet, however during the RI DoD required that PFAS impacted waste be disposed at a subtitle C landfill.	PFAS
Air	PFBE PFIB APFO	American Conference of Governmental Industrial Hygienists, Threshold Limit Values for PFAS in Air.	ACGIH TLVs are health-based guidelines derived from scientific and toxicological data. TLVs are bare based on an 8-hour workday and a 40-hour work week. The USEPA and State of Maine have not established standards for air emissions.	Threshold Limit Value – Time Weighted Average PFBE:1,023 µg/m3 PFIB: 0.01 µg/m3 APFO: 0.01 µg/m3

Acronyms:
7:3 FTCA – 2H,2H,3H,3H-Perfluorodecanoic acid
8:2 FTUCA - 2H,-Perfluoro-2-decenoic acid
µg/L – microgram per liter
µg/m^3 – microgram per cubic meter
MCLG – Maximum Contaminant Level Goal
PFAS – Per- and Polyfluoroalkyl Substances
PFBA – Perfluorobutanoic Acid
PFBS – Perfluorobutanesulfonic Acid
PFBE – Perfluorobutyl Ether
PFDA – Perfluorodecanoic Acid
PFHxA – Perfluorohexanoic Acid
PFHxS – Perfluorohexanesulfonic Acid
PFIB – Perfluoroisobutylene
PFNA – Perfluorononanoic Acid
PFOA – Perfluorooctanoic Acid
PFOS – Perfluorooctanesulfonic Acid
TLV – Threshold Limit Value
See Table 1-1 for additional notes.

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