

**Draft Massachusetts Integrated List of Waters for the  
Clean Water Act 2024/2026 Reporting Cycles**

**Appendix 14  
Hudson: Kinderhook River Basin  
Assessment and Listing Decision Summary**

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## **Watershed Planning Program**

The mission of the Watershed Planning Program (WPP) in the Massachusetts Department of Environmental Protection is to protect, enhance, and restore the quality and value of the waters of the Commonwealth. Guided by the federal Clean Water Act, WPP implements this mission statewide through five Sections that each have a different technical focus: (1) Surface Water Quality Standards; (2) Surface Water Quality Monitoring; (3) Data Management and Water Quality Assessment; (4) Total Maximum Daily Load; and (5) Nonpoint Source Management. Together with other MassDEP programs and state environmental agencies, WPP shares in the duty and responsibility to secure the environmental, recreational, and public health benefits of clean water for all people of the Commonwealth.

## **Acknowledgements**

The 2024/2026 Integrated Report (IR) could not have been produced without the dedicated efforts of program staff and input from other Executive Office of Energy and Environmental Affairs (EEA) staff, EPA colleagues, and stakeholder groups. Many thanks to WPP staff who worked directly on the assessments and supporting tasks (e.g., GIS support, data reviews, data analyses, ATTAINS and reports), including Mason Saleeba, Jenny Peet, Jenny Sheppard, Kari Winfield, Stephanie Figary, Bob Smith, Tim Gardner, Anna Mayor, Shervon De Leon, Matt Reardon, Richard Chase, and Richard Carey. Many thanks to WPP field sampling crews, WPP interns, laboratory staff at the Wall Experiment Station, and external data providers who all played important roles in generating the water quality data used to inform decisions.

## **Disclaimer**

References to trade names, commercial products, manufacturers, or distributors in this report constituted neither endorsement nor recommendation by MassDEP.

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## **Notice of Availability**

[This report is available on the Massachusetts Department of Environmental Protection website.](#)

## **Overview of Appendix Contents**

This Integrated Report (IR) Appendix functions as a watershed-based Assessment and Listing Decision Summary that catalogs the most recent assessment decisions for each assessment unit (AU) that was updated as part of the 2024/2026 IR cycle.

The appendix begins with 2024/26 Cycle Impairment Changes, a comprehensive table summarizing all impairments that were either added, removed, changed, or unchanged between the 2022 and 2024/2026 reporting cycles. This table presents the overall impairment status at the waterbody scale, across all designated uses. The table does not detail use-specific impairment changes; those details are provided in subsequent sections of the appendix.

Following 2024/26 Cycle Impairment Changes, the appendix provides an individual section for each AU updated during the 2024/2026 cycle. Each AU section details the supporting data and rationale for each designated use attainment determination, including any associated impairment removal decisions. Changes in impairment status at the designated use level are documented in full within the corresponding Designated Use Attainment Decision. AUs where no usable data were available for the 2024/2026 IR cycle are included, but with the assessment information from the 2022 cycle is carried forward.

The following abbreviations are used when referencing designated uses:

- ALU - Aquatic Life Use
- FC - Fish Consumption Use
- SH - Shellfish Harvesting Use
- AES - Aesthetic Use
- PCR - Primary Contact Recreation Use
- SCR - Secondary Contact Recreation Use

When listing an impairment, parentheses and an asterisk (\*) are utilized to denote “pollution” or non-pollutant impairments that do not require the development of a Total Maximum Daily Load (TMDL). Where applicable, further explanation of the ATTAINS impairment code is provided within square brackets [].

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## 2024/26 Cycle Impairment Changes

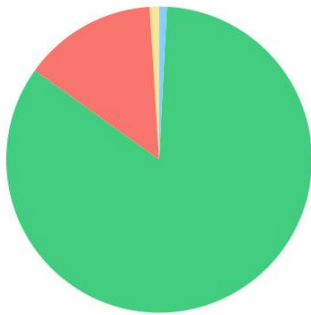
Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Bently Brook	MA12-02	2	2	None	--	Unchanged
Kinderhook Creek	MA12-01	5	5	Benthic Macroinvertebrates	--	Unchanged

## Bently Brook (MA12-02)

<b>Location:</b>	Headwaters, perennial portion, south of Brodie Mountain Road, Lanesborough to mouth at confluence with Kinderhook Creek, Hancock.
<b>AU Type:</b>	RIVER
<b>AU Size:</b>	2.1 MILES
<b>Classification/Qualifier:</b>	B

### Bently Brook (MA12-02)

Watershed Area: 2.82 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.82	2.82	0.67	0.67
Agriculture	1%	1%	1.3%	1.3%
Developed	14.1%	14.1%	19.6%	19.6%
Natural	84.1%	84.1%	75.9%	75.9%
Wetland	0.8%	0.8%	3.1%	3.1%
Impervious	3.6%	3.6%	6.8%	6.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

## Designated Use Attainment Decisions

### Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	NO

### 2024/26 Use Attainment Summary

The Fish Consumption Use for Bently Brook (MA12-02) was not assessed because fish toxics sampling was not conducted recently.

### Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

**2024/26 Use Attainment Summary**

No data are available to assess the status of the Aesthetics Use for Bently Brook (MA12-02), so it is Not Assessed.

**Primary Contact Recreation**

2024/26 Use Attainment	Alert
Not Assessed	NO

**2024/26 Use Attainment Summary**

No data are available to assess the status of the Primary Contact Recreation Use for Bently Brook (MA12-02), so it is Not Assessed.

**Secondary Contact Recreation**

2024/26 Use Attainment	Alert
Not Assessed	NO

**2024/26 Use Attainment Summary**

No bacteria or other indicator data for Bently Brook (MA12-02) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected E. coli bacteria samples in Bently Brook (MA12-02) at W1591 [unnamed Rd W of Corey Rd, Hancock] from Apr-Sep 2007 (n=5). Analysis of this historic single year limited frequency E. coli dataset from W1591 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 17 CFU/100ml. Historic E. coli data from W1591 were indicative of good water quality conditions. Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

**Monitoring Stations**

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1591	MassDEP	Water Quality	Bently Brook	[unnamed road west of Corey Road, Hancock]	42.557925	-73.296388

**Bacteria Data****Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)**

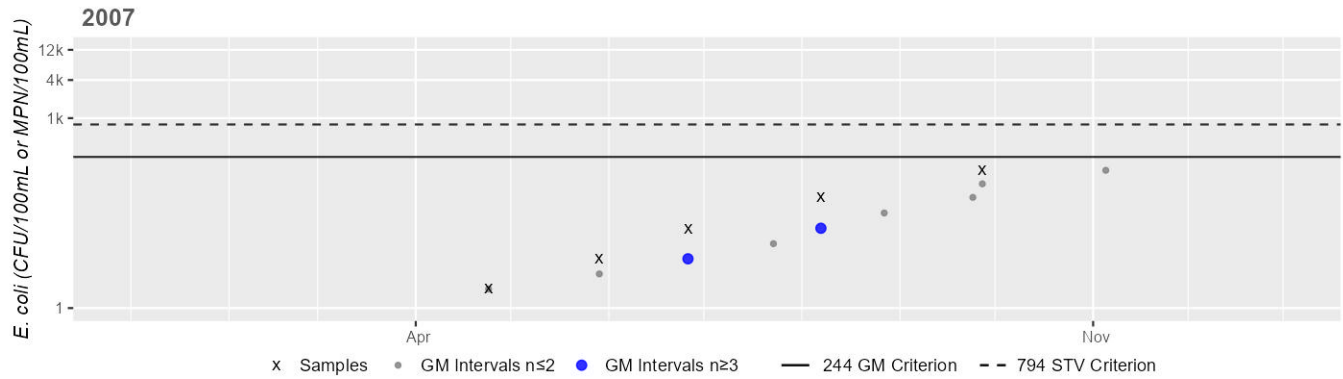
(MassDEP Undated 3) (MassDEP Undated 1)

[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1591	MassDEP	E. coli	04/24/07	09/27/07	5	2	150	17

# Station MASSDEP\_W1591 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	17
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance

Historic (1997-2010)

0%

\*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exceedances;  
 %GMI Ex = % GMI Exceedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV;  
 "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

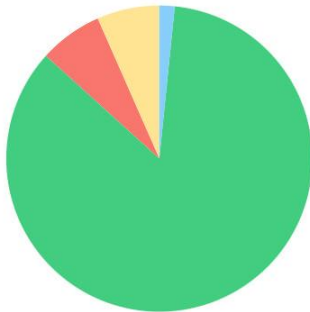


## Kinderhook Creek (MA12-01)

<b>Location:</b>	Whitman Road, Hancock to New York/Massachusetts border, Hancock.
<b>AU Type:</b>	RIVER
<b>AU Size:</b>	4.6 MILES
<b>Classification/Qualifier:</b>	B: CWF, HQW

### Kinderhook Creek (MA12-01)

Watershed Area: 14.08 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	12.83	6.72	3.14	1.64
Agriculture	6.6%	9.8%	10.2%	15.3%
Developed	6.7%	6.8%	10%	12.2%
Natural	85.1%	82%	74.3%	67.9%
Wetland	1.6%	1.3%	5.5%	4.6%
Impervious	2.2%	2%	3.6%	4.3%

\*Land cover analysis only includes watershed area within Massachusetts.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Benthic Macroinvertebrates	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Benthic Macroinvertebrates	Agriculture (N)	X	--	--	--	--
Benthic Macroinvertebrates	Highway/Road/Bridge Runoff (Non-construction Related) (N)	X	--	--	--	--

## Recommendations

2024/26 Recommendations
2024/2026 IR [Algae, Low Priority] Additional monitoring should be performed to determine the extent of filamentous algae growth in Kinderhook Creek (MA12-01). Dense filamentous algae was observed during site visits to Station W2256 (1675 feet upstream of Potter Mountain Road, Hancock) (W2256) in the summer of 2012. {W2256}

## Designated Use Attainment Decisions

### Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	NO
2024/26 Use Attainment Summary	
The Fish Consumption Use for Kinderhook Creek (MA12-01) was not assessed because fish toxics sampling was not conducted recently.	

### Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	YES
2024/26 Use Attainment Summary	
The Aesthetics use for Kinderhook Creek (MA12-01) is assessed as Fully Supporting based on the general lack of objectionable conditions (odors, deposits, or turbidity) observed by MassDEP staff at station W2256/MAP2-182 in summer 2012 (n=6). However, an Alert is being identified due to observations of dense filamentous algae during four of the site visits. MassDEP staff surveyed this Kinderhook Creek AU ~1675 feet upstream of Potter Mountain Road, Hancock (W2256) during the summer of 2012 as part of the MAP2 wadeable streams monitoring project. There were no objectionable odors, colors, deposits, or turbidity noted however there were observations of dense/very dense growths of filamentous algae during four of the six surveys.	

### Aesthetic Observations

#### Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 2)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2256	Kinderhook Creek	2012	6	The Aesthetics use for Kinderhook Creek is assessed as Fully Supporting based on the lack of objectionable conditions (odors, deposits, or turbidity) observed by MassDEP staff at station W2256/MAP2-182 in summer 2012 (n=6). However, an Alert is being identified due to observations of dense filamentous algae during 4 of the site visits.

#### Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 3) (MassDEP Undated 2)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2256	2012	6	6	4

#### MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 3)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2256	Kinderhook Creek	2012	Color	None	5	6
W2256	Kinderhook Creek	2012	Color	NR	1	6
W2256	Kinderhook Creek	2012	Objectionable Deposits	No	6	6
W2256	Kinderhook Creek	2012	Odor	None	6	6
W2256	Kinderhook Creek	2012	Scum	No	6	6
W2256	Kinderhook Creek	2012	Turbidity	None	5	6
W2256	Kinderhook Creek	2012	Turbidity	NR	1	6

#### Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

#### 2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Kinderhook Creek (MA12-01) continues to be assessed as Fully Supporting. MassDEP staff collected E. coli bacteria samples in Kinderhook Creek (MA12-01) at W2256 [~1675 ft upstream of Potter Mountain Rd, Hancock] from May-Sep 2012 (n=6). Analysis of the single year limited frequency E. coli dataset from W2256 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 33 CFU/100ml. E. coli data from W2256 meet 2024 CALM guidance.

#### Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

#### Bacteria Data

##### Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

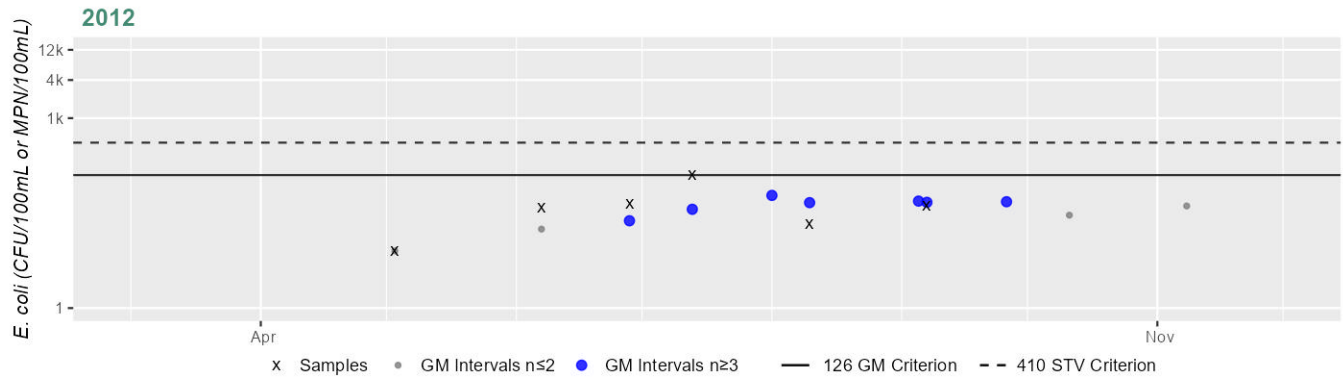
(MassDEP Undated 3) (MassDEP Undated 2)

[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2256	MassDEP	E. coli	05/02/12	09/06/12	6	8	127	33

### Station MASSDEP\_W2256 - *Escherichia coli*

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	33
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance

Current (2011-2022)

0%

\*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exceedances; %GMI Ex = % GMI Exceedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

### Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

#### 2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Kinderhook Creek (MA12-01) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in Kinderhook Creek (MA12-01) from 2007-2012 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: W2256 [~1675 ft upstream of Potter Mountain Rd, Hancock] from May-Sep 2012 (n=6), W1557 [downstream at Potter Mountain Rd, Hancock] from Apr-Sep 2007 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2256 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 33 CFU/100ml. *E. coli* data from W2256 meet 2024 CALM guidance.

### Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1557	MassDEP	Water Quality	Kinderhook Creek	[downstream at Potter Mountain Road, Hancock]	42.542337	-73.317058

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

## Bacteria Data

### Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

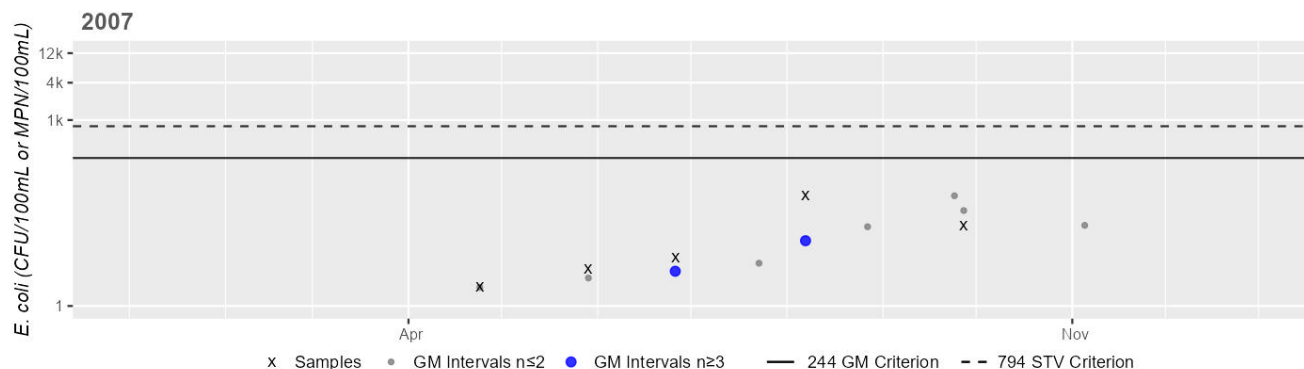
(MassDEP Undated 3) (MassDEP Undated 1)

[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1557	MassDEP	E. coli	04/24/07	09/27/07	5	2	60	8
W2256	MassDEP	E. coli	05/02/12	09/06/12	6	8	127	33

#### Station MASSDEP\_W1557 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	8
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

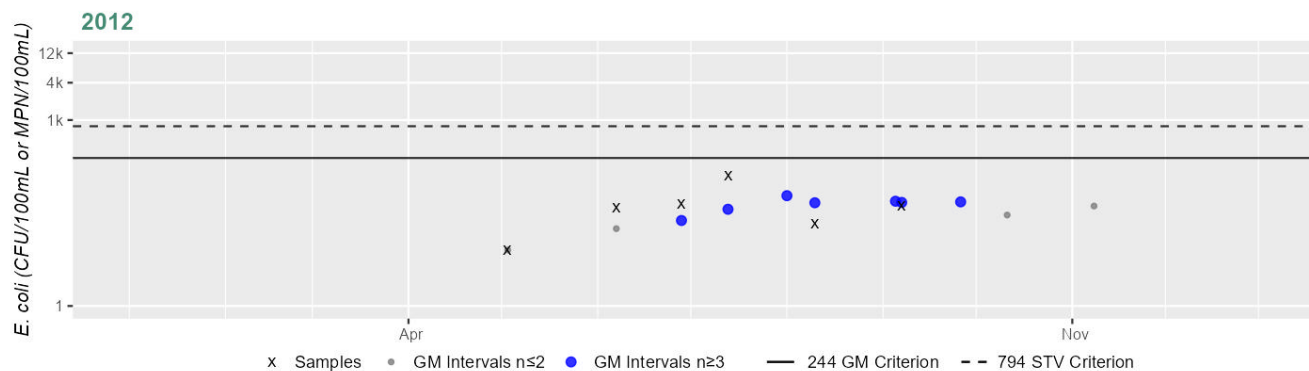
Cumulative %GMI Exceedance  
Historic (1997-2010)

0%

\*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exceedances;  
%GMI Ex = % GMI Exceedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV;  
"Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

# Station MASSDEP\_W2256 - *Escherichia coli*

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	33
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

## Cumulative %GMI Exceedance

Current (2011-2022)

0%

\*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exceedances;  
 %GMI Ex = % GMI Exceedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV;  
 "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

## **Data Sources**

MassDEP. "Open file analysis of MassDEP WPP water quality data collected between 1997 and 2020 using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 1.

MassDEP. "Open file analysis of MassDEP WPP water quality data collected between 2011 and 2020 using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 2.

MassDEP. "Open files of unpublished, validated water quality monitoring data, field sheet data, and GIS datalayers in development." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 3.