



**GROWING AREA WW
Owls Head to Cape Jellison**

Annual Report for the year 2007

Final Report Date: June 10, 2008

Fran Pierce

APPROVAL

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The attached draft is for your evaluation and comment. Suggested changes should be concise and reasons specific. Return to sender.

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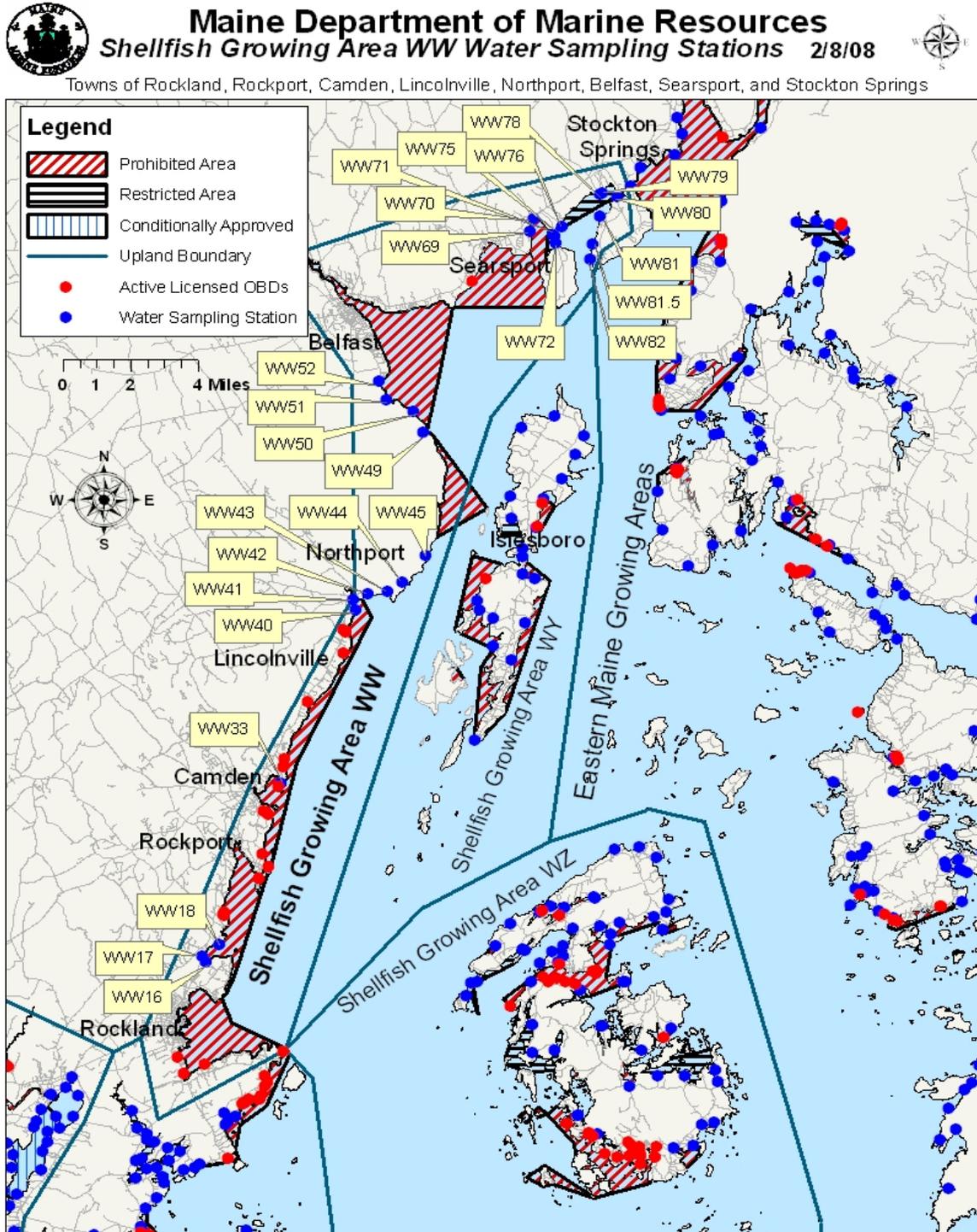
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Figure 1. Sampling Station Locations and Growing Area Classifications





Executive Summary

Shellfish growing area WW covers portions of the shoreline in the towns of Owls Head, Rockland, Rockport, Camden, Lincolnville, Northport, Belfast, Searsport and Stockton Springs (Figure 1). Shellfish Growing Area WW starts at the tip of Owls Head, at Owls Head Lighthouse and then continues north to the southern tip of Cape Jellison. A detailed description of the upland boundary can be found in central files. There are very few areas open for shellfish harvest in this growing area. The towns of Rockland, Rockport, Camden and Belfast have busy harbors with either large mooring areas and/or marina operations. All of these towns have large closures around their harbors with no shellfish harvesting areas nearby.

The shoreline in shellfish Growing Area WW contains few coves or mudflat areas and has a rocky and cobbled surface that does not provide a good habitat for soft-shelled clams. There are however, a few small coves in this area that do have suitable habitat for clams, ocean quahogs and mussels.

Major pollution sources in area WW include municipal treatment facilities and marinas. The towns of Rockland, Camden, Northport, Belfast and Searsport all have municipal treatment facilities. All of these facilities are located in areas with large closure zones around their outfalls. None of these facilities have had treatment plant review forms or dilution calculations done in the past due to the large closure areas around the outfalls. Marinas and/or mooring areas can be found in Rockland Harbor, Rockport Harbor, Camden Harbor and Belfast Harbor. None of these areas have ever had marina calculations done because these areas are inside of large closure zones around treatment plant outfalls. There are no approved shellfish resource areas anywhere nearby these harbors. There were no major changes in pollution sources during the review period.

Several of the towns in shellfish growing area WW are served by municipal treatment facilities. None of these municipal treatment facilities are located nearby shellfish growing areas that are classified as approved for shellfish harvest.

The next triennial review of this area will be due in 2010 for the years 2007-2009. Shoreline survey work will be conducted in Lincolnville and Northport in 2008. This survey is being conducted to try to determine the cause of elevated water quality in the Ducktrap River.

Activity During Review Period

- August 31, 2007 legal notice No 33 Searsport, The west side of the causeway to Sears Island is reclassified from approved to restricted.

Sampling stations WW71 and WW72 were reclassified as restricted as a result of the August 31, 2007 legal notice change.



Current Classification(s)

Shellfish growing area WW has 12 prohibited stations, 6 restricted stations and 8 approved stations. There are no conditional areas in this growing area. All of the stations in area WW have water quality scores that meet their current classification. No changes in classification are being recommended.

Shellfish growing area WW has areas classified as:

Approved, 8 stations

- 4 stations in Ducktrap
- 4 stations in Stockton Springs harbor

Restricted, 6 stations

- Closed Area 33, Searsport,

Prohibited, 12 stations,

- Closed Area 31A, Rockport Harbor to Ducktrap River, 6 stations
- Closed Area 32, Belfast Bay, 6 stations

For a complete list of Legal Notices, please visit DMR website:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#W

Review of Water Quality

Table 1 displays the geomean and P90 values for all active stations in the WW growing area for the latest 30 data points; Appendix A shows data for all stations sampled in 2007. All of the sampling stations in shellfish growing area WW are sampled following the systematic random sampling format. All of the stations were sampled the required six times over the course of the sampling season (Table 2). No stations were added or deactivated in 2007. There are no conditional areas in shellfish growing area WW. Please refer to Appendix B for table header explanations.

Table 1. Water quality Geomean and P90 scores for growing area WW

STATION	Class	Cnt	MFCNT	GM	SDV	MAX	P90	Appd_Std	Rest_Std
WW016.00	P	30	9	31.6	0.77	1100	304.6	43	250
WW017.00	P	30	9	6.9	0.57	150	37.1	43	250
WW018.00	P	30	9	4.5	0.46	240	17.2	43	250
WW033.00	P	30	9	3.9	0.35	70	11.1	43	250
WW040.00	P	30	9	5.4	0.49	150	22.8	43	250
WW041.00	P	30	9	8.7	0.64	1100	57.0	43	250
WW042.00	A	30	9	4.7	0.42	93	16.4	43	250
WW043.00	A	30	9	6.0	0.58	240	33.4	43	250



STATION	Class	Cnt	MFCNT	GM	SDV	MAX	P90	Appd_Std	Rest_Std
WW044.00	A	30	9	5.7	0.50	93	25.0	43	250
WW045.00	A	30	9	4.2	0.42	43	14.1	43	250
WW049.00	P	30	8	5.4	0.44	43	19.7	43	255
WW050.00	P	30	8	10.1	0.76	1200	93.5	43	255
WW051.00	P	30	8	13.8	0.88	1100	184.5	43	255
WW052.00	P	30	8	11.0	0.56	240	57.5	43	255
WW069.00	P	30	8	6.8	0.62	240	42.2	43	255
WW070.00	P	30	9	9.2	0.76	1100	87.1	43	250
WW071.00	R	30	8	5.1	0.52	150	23.9	43	255
WW072.00	R	30	8	6.3	0.77	1700	60.6	43	255
WW075.00	A	30	8	4.5	0.46	93	17.5	43	255
WW076.00	R	30	8	5.4	0.54	240	26.6	43	255
WW078.00	R	30	8	18.1	0.80	1200	189.5	43	255
WW079.00	R	30	9	7.2	0.70	1100	56.9	43	250
WW080.00	R	30	9	7.0	0.69	1100	53.5	43	250
WW081.00	A	30	8	4.3	0.43	93	15.0	43	255
WW081.50	A	30	8	5.4	0.54	440	26.8	43	255
WW082.00	A	30	8	5.9	0.43	84	20.6	43	255

Table 2. 2007 Sample Collection Count for Growing Area WW

LOCATION_ID	Class	Status	
		Closed	Open
WW016.00	P	6	
WW017.00	P	6	
WW018.00	P	6	
WW033.00	P	6	
WW040.00	P	6	
WW041.00	P	6	
WW042.00	A		6
WW043.00	A		6
WW044.00	A		6
WW045.00	A		6
WW049.00	P	6	
WW050.00	P	6	
WW051.00	P	6	
WW052.00	P	6	
WW069.00	P	6	
WW070.00	P	6	
WW071.00	R		6
WW072.00	R		6
WW075.00	A		6
WW076.00	R		6
WW078.00	R		6
WW079.00	R		6

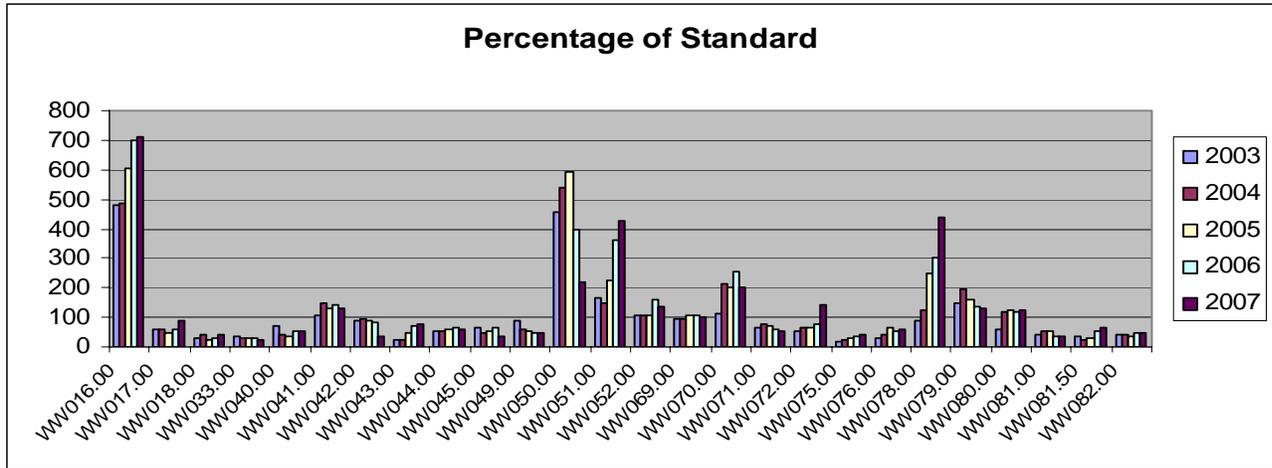


LOCATION_ID	Class	Status	
		Closed	Open
WW080.00	R		6
WW081.00	A		6
WW081.50	A		6
WW082.00	A		6

Figure 2 shows the P90 trends from 2003 to 2007, expressed as a percentage of the approved standard for data sets from 2002 to 2007. During the transition from MPN to MF data points, each year the approved standard will be lower than the previous year until all samples have been analyzed by the MF method. Please refer to Appendix C for more information on the transition from MPN to MF. In order to show the trend of the P90 value over the years, the calculated P90s are expressed as a percentage of the approved standard. Any station showing the 2007 column on or above the 100 percent line does not meet the standard for approved classification. Station WW16, WW51 and WW78 had the most elevated scores in the growing area. At most stations, water quality scores have been stable over the past five years. Declining water quality has been observed at station WW16, WW 51, WW72, and WW 78. Improving water quality scores have been observed at station WW 50 and WW79 over the last 3 years. Survey work is being done by a local interest group, DMR and DEP in the vicinity of WW16 to try to determine the cause of the extremely elevated scores in this area. Since there are no dwellings nearby station WW72, the most likely cause of the elevated scores in this area is dogs being walked on the beach. Shoreline survey work has never been done (by DMR) nearby station WW51, however residents in the area have complained repeatedly about possible straight pipes going to a stream that drains into the area. This has been mentioned to DEP but to date the area has only received a very cursory inspection. Station WW78 has also received numerous elevated water quality scores over the years. This area has been surveyed repeatedly by DMR and DEP staff but no pollution sources were ever identified. The stream has been sampled by both DMR staff and volunteers in the area and has received elevated scores. Pollution appears to be entering the shore by way of the stream.



Figure 2. Water Quality Trends for Growing Area WW, 2003-2007



Shoreline Survey Activity

This area did not have any door to door survey work conducted in 2007, however it did receive a drive through survey each time the area was sampled as part of the random run.

Glen Cove, in the town of Rockport, and Stockton Harbor, in the town of Stockton Springs had survey work conducted by private groups within their communities.

The Glen Cove group will be continuing their survey work in the 2008 season. They plan to inspect potential pollution sources along the drainage that flows into Glen Cove at sampling station WW16. Staff from DEP and DMR will be assisting with shoreline survey inspections at any of the more suspect sites.

The Stockton Harbor group conducted a variety of work including contracting out some microbial tracking work that was conducted on some of the more elevated drainages (nearby station WW78). This report should be completed in 2008.

Survey work was also conducted at Lincolnville Beach by the Maine Cooperative Extension Service’s Healthy Beaches program. This survey was conducted to assess the dwellings along route one that are adjacent to Lincolnville Beach. Lincolnville Beach is a public beach that is a popular destination for locals and tourists alike. The Healthy Beaches Program assesses all potential pollution sources that may cause the public beach area to become a health hazard to swimmers. This report identified several pollution sources that were reported to the local plumbing inspector. The report is very thorough. The survey was conducted by a mixture of cooperative extension staff and volunteers.

Wastewater Treatment Facilities

The towns of Rockland, Camden, Northport, Belfast and Searsport all have municipal treatment facilities. All of these facilities are located in areas with large closure zones around their outfalls. None of these facilities have been required to have treatment plant review forms or dilution calculations done in the past due to the large closure areas around the outfalls. The acreage for each of these closure zones is as follows:



Rockland Harbor, closed area C29 – 2382 acres closed, the closest open area is in >50 feet of water – no harvesting takes place in this area

Camden Harbor, closed area C31A – 2116 acres closed, the closest open area is in >50 feet of water – no harvesting takes place in this area

Bayside, Northport, closed area C32, this facility is in the same closure area as the Belfast closure zone of 4172 acres. Bayside's outfall is approximately 1.6 miles from mussel raft PEN BB operated by Joe Larrabee

Belfast Harbor, closed area C32 – 4172 acres closed, the closest open area is in >50 feet of water – no harvesting takes place in this area

Searsport Harbor, closed area C33 – 2771 acres closed, the closest open area is in >50 feet of water – no harvesting takes place in this area

Aquaculture Lease Sites

There is one aquaculture lease site in shellfish growing area WW. The information on this lease site is shown below. Additional information can be found at the DMR aquaculture website:

<http://www.maine.gov/dmr/aquaculture/leaseinventory2006/index.htm>

PEN BB

Original Date: 6/2/2004 **Effective Date:** 6/2/2004 **Expiration Date:** 6/1/2014

NOAA Chart: 13302

Description: Belfast Bay Penobscot Bay Northport Waldo County

Acreage: 6

Conditions:

Transfer/Renewal History:

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - oyster european flat (*Ostrea edulis*) - clam surf / hen

(*Spisula solidissima*) - clam northern quahog / hard (*Mercenaria mercenaria*) - clam soft (*Mya arenaria*) - mussel blue sea (*Mytilus edulis*)

Cultivation Technique(s): Suspended

Bayside Mussel Farm

Joe Larrabee

RFD 2, Box 2520

Belfast, ME 04915

207-223-5172 Fax:

Navigation, lobster fishing and recreational boating and fishing shall be allowed in the open areas of the lease; the lease area shall be marked in accordance with U.S. Coast Guard and Department of Marine Resources regulations Chapter 2.80; the applicant shall consult with the Coast Guard to ensure that the navigational markings are adequate for this location.

Formerly experimental lease LARR KC.

Chart and lease boundaries not to be used for legal purposes.

Classification Changes Required

No classification change is required.



Discussion and Summary

The water quality in shellfish growing area WW has remained consistent with past year's scores. The scores at stations WW16 in Rockport and WW78 in Stockton Springs have remained elevated. Both of these areas are being pursued by local interest groups from their respective communities. There is still interest in reopening the public beach area at sampling station WW41 in Ducktrap. This area has a good hen clam resource that was harvested in the early 1990s. Members from the Cooperative Extension Service and DMR staff plan to conduct survey work in the mouth of the Ducktrap River in 2008. No changes in classification are recommended at this time.

The many wastewater treatment facilities' operations will be reviewed using the DMR Wastewater Treatment Review Form. This form lists a series of questions regarding the operations of the treatment facility to determine if the facility is having an impact on the water quality in the area. The form is then sent to the Department of Environmental Protection staff member responsible for inspecting the treatment facility for their review and comments. The facilities in this area had not been previously reviewed because it was believed that the large closure zones (several thousand acres) around each of the outfalls was adequate to protect public health.



Appendix A. Water Quality Samples Collected in 2007

Station	Date	Collector	Tide	Temp	Sal	Strat	ADV	Stat	CL	A1COL	MFCOL
WW016.00	05/29/07	FP	E	14	26	R	-	C	P	-	29
WW016.00	06/13/07	JB	H	12	25	R	-	C	P	-	58
WW016.00	08/07/07	MHE	E	15	29	R	-	C	P	-	72
WW016.00	08/29/07	EXT	HE	16	30	R	-	C	P	-	14
WW016.00	10/02/07	MHE	H	15	30	R	-	C	P	-	10
WW016.00	12/11/07	EXT	F	-4	30	R	-	C	P	-	26
WW017.00	02/26/07	LL	E	2	32	R	-	C	P	-	<2.0
WW017.00	05/29/07	FP	E	14	28	R	-	C	P	-	15
WW017.00	06/13/07	JB	H	12	26	R	-	C	P	-	88
WW017.00	08/07/07	MHE	E	15	28	R	-	C	P	-	96
WW017.00	10/02/07	MHE	H	15	32	R	-	C	P	-	<2.0
WW017.00	12/11/07	EXT	F	-2	28	R	-	C	P	-	2
WW018.00	02/26/07	LL	E	2	32	R	-	C	P	-	<2.0
WW018.00	04/23/07	EXT	LE	0	30	R	-	C	P	-	<2.0
WW018.00	06/13/07	JB	H	11	26	R	-	C	P	-	6
WW018.00	08/07/07	MHE	E	15	28	R	-	C	P	-	42
WW018.00	10/02/07	MHE	L	16	31	R	-	C	P	-	2
WW018.00	12/11/07	EXT	F	-2	30	R	-	C	P	-	2
WW033.00	02/26/07	LL	E	2	32	R	-	C	P	-	<2.0
WW033.00	04/23/07	EXT	L	4	26	R	-	C	P	-	2
WW033.00	06/13/07	JB	L	11	25	R	W	C	P	-	2
WW033.00	08/07/07	MHE	E	15	28	R	-	C	P	-	70
WW033.00	10/02/07	MHE	LF	14	31	R	-	C	P	-	<2.0
WW033.00	12/11/07	EXT	F	0	28	R	-	C	P	-	2
WW040.00	02/26/07	LL	E	2	26	R	-	C	P	-	<2.0
WW040.00	04/23/07	EXT	L	4	16	R	-	C	P	-	4
WW040.00	06/13/07	JB	L	11	15	R	-	C	P	-	4
WW040.00	08/07/07	MHE	E	15	27	R	-	C	P	-	11
WW040.00	10/02/07	MHE	LF	15	30	R	-	C	P	-	<2.0
WW040.00	12/11/07	EXT	HF	-3	26	R	-	C	P	-	<2.0
WW041.00	02/26/07	LL	LE	2	6	R	W	C	P	-	<2.0
WW041.00	04/23/07	EXT	LF	2	0	R	N	C	P	-	2
WW041.00	06/13/07	JB	HE	12	18	R	-	C	P	-	16
WW041.00	08/07/07	MHE	LE	17	16	R	-	C	P	-	31
WW041.00	10/02/07	MHE	LF	15	25	R	-	C	P	-	16
WW041.00	12/11/07	EXT	HF	0	26	R	W	C	P	-	2
WW042.00	02/26/07	LL	LE	2	30	R	-	O	A	-	<2.0
WW042.00	04/23/07	EXT	LF	4	5	R	-	O	A	-	<2.0
WW042.00	06/13/07	JB	L	10	28	R	-	O	A	-	4
WW042.00	08/07/07	MHE	LE	16	28	R	-	O	A	-	<2.0



Station	Date	Collector	Tide	Temp	Sal	Strat	ADV	Stat	CL	A1COL	MFCOL
WW042.00	10/02/07	MHE	LF	16	30	R	-	O	A	-	2
WW042.00	12/11/07	EXT	HF	0	28	R	-	O	A	-	<2.0
WW043.00	02/26/07	LL	LE	2	24	R	-	O	A	-	<2.0
WW043.00	04/23/07	EXT	LF	3	18	R	-	O	A	-	<2.0
WW043.00	06/13/07	JB	LE	9	28	R	-	O	A	-	<2.0
WW043.00	08/07/07	MHE	LE	17	28	R	-	O	A	-	2
WW043.00	10/02/07	MHE	LF	17	30	R	-	O	A	-	<2.0
WW043.00	12/11/07	EXT	HF	-1	28	R	-	O	A	-	2
WW044.00	02/26/07	LL	LE	2	30	R	-	O	A	-	<2.0
WW044.00	04/23/07	EXT	LF	4	15	R	-	O	A	-	<2.0
WW044.00	06/13/07	JB	LE	11	28	R	-	O	A	-	<2.0
WW044.00	08/07/07	MHE	LE	17	22	R	-	O	A	-	48
WW044.00	10/02/07	MHE	F	16	28	R	-	O	A	-	4
WW044.00	12/11/07	EXT	HF	0	26	R	-	O	A	-	<2.0
WW045.00	04/23/07	EXT	F	2	20	R	-	O	A	-	<2.0
WW045.00	05/15/07	JB	E	7	22	R	P	O	A	-	<2.0
WW045.00	06/13/07	JB	LE	11	25	R	-	O	A	-	<2.0
WW045.00	08/07/07	MHE	LE	15	28	R	-	O	A	-	<2.0
WW045.00	10/02/07	MHE	F	17	30	R	-	O	A	-	<2.0
WW045.00	12/11/07	EXT	H	-1	26	R	-	O	A	-	4
WW049.00	02/26/07	LL	L	2	28	R	-	C	P	-	<2.0
WW049.00	04/23/07	EXT	F	6	15	R	N	C	P	-	<2.0
WW049.00	06/13/07	JB	LE	10	24	R	-	C	P	-	35
WW049.00	08/07/07	MHE	L	17	28	R	-	C	P	-	<2.0
WW049.00	10/02/07	MHE	F	16	30	R	-	C	P	-	4
WW049.00	12/11/07	EXT	H	-1	26	R	-	C	P	-	<2.0
WW050.00	02/26/07	LL	L	2	30	R	-	C	P	-	<2.0
WW050.00	04/23/07	EXT	F	6	12	R	-	C	P	-	<2.0
WW050.00	06/13/07	JB	E	12	25	R	-	C	P	-	4
WW050.00	08/07/07	MHE	L	17	26	R	-	C	P	-	2
WW050.00	10/02/07	MHE	F	15	30	R	-	C	P	-	<2.0
WW050.00	12/11/07	EXT	H	0	26	R	-	C	P	-	2
WW051.00	02/26/07	LL	L	2	18	R	-	C	P	-	<2.0
WW051.00	04/23/07	EXT	F	11	2	R	N	C	P	-	12
WW051.00	06/13/07	JB	HE	11	24	R	-	C	P	-	220
WW051.00	08/07/07	MHE	L	20	22	R	-	C	P	-	8
WW051.00	10/02/07	MHE	F	16	30	R	-	C	P	-	<2.0
WW051.00	12/11/07	EXT	H	0	24	R	-	C	P	-	8
WW052.00	02/26/07	LL	L	2	6	R	W	C	P	-	4
WW052.00	04/23/07	EXT	F	6	2	R	-	C	P	-	12
WW052.00	06/13/07	JB	HE	12	16	R	-	C	P	-	16
WW052.00	08/07/07	MHE	L	20	2	R	-	C	P	-	14



Station	Date	Collector	Tide	Temp	Sal	Strat	ADV	Stat	CL	A1COL	MFCOL
WW052.00	10/02/07	MHE	F	16	24	R	-	C	P	-	8
WW052.00	12/11/07	EXT	H	0	24	R	-	C	P	-	4
WW069.00	04/23/07	EXT	F	10	14	R	-	C	P	-	<2.0
WW069.00	05/15/07	JB	HE	8	20	R	P	C	P	-	<2.0
WW069.00	06/13/07	JB	E	11	26	R	-	C	P	-	6
WW069.00	08/07/07	MHE	LF	22	24	R	-	C	P	-	2
WW069.00	10/02/07	MHE	F	16	30	R	-	C	P	-	2
WW069.00	12/11/07	EXT	HE	0	26	R	-	C	P	-	4
WW070.00	04/23/07	EXT	F	11	0	R	-	C	P	-	<2.0
WW070.00	05/15/07	JB	HE	7	18	R	P	C	P	-	2
WW070.00	06/13/07	JB	E	11	20	R	-	C	P	-	8
WW070.00	08/07/07	MHE	F	22	22	R	-	C	P	-	31
WW070.00	10/02/07	MHE	F	17	30	R	-	C	P	-	4
WW070.00	12/11/07	EXT	HE	-4	22	R	-	C	P	-	<2.0
WW071.00	02/26/07	LL	LF	2	30	R	-	O	A	-	<2.0
WW071.00	04/23/07	EXT	F	11	12	R	-	O	A	-	<2.0
WW071.00	06/13/07	JB	E	10	28	R	-	O	A	-	<2.0
WW071.00	08/07/07	MHE	F	20	28	R	-	O	A	-	<2.0
WW071.00	10/02/07	MHE	F	17	30	R	-	O	A	-	<2.0
WW071.00	12/11/07	EXT	HE	-1	26	R	-	O	R	-	2
WW072.00	02/26/07	LL	LF	2	30	R	-	O	A	-	<2.0
WW072.00	04/23/07	EXT	F	12	14	R	-	O	A	-	2
WW072.00	06/13/07	JB	E	10	28	R	-	O	A	-	2
WW072.00	08/07/07	MHE	F	23	27	R	-	O	A	-	>1600
WW072.00	10/02/07	MHE	F	16	30	R	-	O	A	-	2
WW072.00	12/11/07	EXT	HE	0	24	R	-	O	R	-	2
WW075.00	02/26/07	LL	LF	2	30	R	-	O	A	-	<2.0
WW075.00	04/23/07	EXT	F	7	12	R	-	O	A	-	<2.0
WW075.00	06/13/07	JB	E	10	26	R	-	O	A	-	4
WW075.00	08/07/07	MHE	F	15	26	R	-	O	A	-	2
WW075.00	10/02/07	MHE	F	16	30	R	-	O	A	-	<2.0
WW075.00	12/11/07	EXT	HE	0	26	R	-	O	A	-	<2.0
WW076.00	04/23/07	EXT	F	5	14	R	-	O	R	-	<2.0
WW076.00	05/15/07	JB	HE	8	20	R	P	O	R	-	2
WW076.00	06/13/07	JB	E	10	28	R	-	O	R	-	4
WW076.00	08/07/07	MHE	F	20	26	R	-	O	R	-	2
WW076.00	10/02/07	MHE	F	15	30	R	-	O	R	-	<2.0
WW076.00	12/11/07	EXT	E	0	26	R	-	O	R	-	<2.0
WW078.00	04/23/07	EXT	F	11	10	R	-	O	R	-	90
WW078.00	05/15/07	JB	E	8	18	R	P	O	R	-	16
WW078.00	06/13/07	JB	E	10	28	R	-	O	R	-	11
WW078.00	08/07/07	MHE	F	20	20	R	-	O	R	-	40



Station	Date	Collector	Tide	Temp	Sal	Strat	ADV	Stat	CL	A1COL	MFCOL
WW078.00	10/02/07	MHE	F	17	30	R	-	O	R	-	50
WW078.00	12/11/07	EXT	E	-1	24	R	-	O	R	-	2
WW079.00	04/23/07	EXT	F	5	12	R	-	O	R	-	4
WW079.00	05/15/07	JB	E	8	20	R	P	O	R	-	4
WW079.00	06/13/07	JB	E	10	27	R	-	O	R	-	20
WW079.00	08/07/07	MHE	F	22	26	R	-	O	R	-	6
WW079.00	10/02/07	MHE	F	15	30	R	-	O	R	-	6
WW079.00	12/11/07	EXT	E	-1	28	R	-	O	R	-	<2.0
WW080.00	04/23/07	EXT	F	7	12	R	-	O	R	-	<2.0
WW080.00	05/15/07	JB	E	7	19	R	P	O	R	-	4
WW080.00	06/13/07	JB	E	10	28	R	-	O	R	-	5.5
WW080.00	08/07/07	MHE	F	20	26	R	-	O	R	-	3.6
WW080.00	10/02/07	MHE	F	15	30	R	-	O	R	-	<2.0
WW080.00	12/11/07	EXT	E	0	26	R	-	O	R	-	<2.0
WW081.00	04/23/07	EXT	F	4	12	R	-	O	A	-	<2.0
WW081.00	05/15/07	JB	E	7	19	R	P	O	A	-	<2.0
WW081.00	06/13/07	JB	E	9	28	R	-	O	A	-	4
WW081.00	08/07/07	MHE	F	18	26	R	-	O	A	-	4
WW081.00	10/02/07	MHE	F	16	30	R	-	O	A	-	<2.0
WW081.00	12/11/07	EXT	E	0	26	R	-	O	A	-	2
WW081.50	04/23/07	EXT	F	5	12	R	-	O	A	-	<2.0
WW081.50	05/15/07	JB	E	7	20	R	P	O	A	-	10
WW081.50	06/13/07	JB	E	10	28	R	-	O	A	-	<2.0
WW081.50	08/07/07	MHE	F	18	27	R	-	O	A	-	4
WW081.50	10/02/07	MHE	F	16	30	R	-	O	A	-	2
WW081.50	12/11/07	EXT	E	0	24	R	-	O	A	-	18
WW082.00	04/23/07	EXT	HF	5	12	R	-	O	A	-	5.5
WW082.00	05/15/07	JB	E	7	18	R	P	O	A	-	2
WW082.00	06/13/07	JB	E	9	27	R	-	O	A	-	9.1
WW082.00	08/07/07	MHE	F	20	27	R	-	O	A	-	8
WW082.00	10/02/07	MHE	F	15	30	R	-	O	A	-	12
WW082.00	12/11/07	EXT	E	0	24	R	-	O	A	-	2



Appendix B. Key to water quality table headers.

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.



Appendix C. Transitioning to Membrane Filtration

The Maine Department of Marine Resources has chosen to switch to a fecal coliform method that was approved for use in the National Shellfish Sanitation Program (NSSP) at the Interstate Shellfish Sanitation Conference in 2003. This method is the Membrane Filtration (MF) for Fecal Coliforms using mTEC agar with a two hour resuscitation step. The geometric mean and the 90th percentile are calculated on 30 data points extending over a five year period. During the transition from MPN to MF, we will be accumulating MF data points. The statistical calculations will be a combination of MPN and MF data points. The FDA has determined that the best way to handle the data is to perform the calculations as always for the data set, but to compare the data set to a hybrid weighted 90th percentile. This hybrid standard is calculated by weighting the relative contributions of each method to the database. This will mean that as the number of MPN data points reduce and the number of MF data points increase the 90th percentile standard that the sample site is compared to will change over time. Once all 30 data points are analyzed using MF, the 90th percentile for approved classification will be 31 and for restricted (for depuration) will be 163. The geomean approved standard of 14 fecal coliforms per 100 ml and geomean restricted standard of 88 fecal coliforms per 100 ml will remain the same for both methods.

Reports that display 90th percentiles will show the number of data points derived from MF analysis and will show the appropriate 90th percentile standard for that MPN/MF combination for approved and restricted classifications. It must be remembered that this weighted standard is only used for data sets encompassing data from the two different test methods, MF and MPN (3 tube/3 dilution). If decisions are to be made on a single test result analyzed by the MF method or a multiple number of test results all exclusively analyzed by the MF method, the 90th percentile standard is 31 fecal coliforms per 100 ml.

Water samples are collected following a systematic random sampling format. The sampling schedule is set sometime during the month of January. Sampling usually begins in January and continues into the month of December. The program requires the collection of 30 samples over a period of years to establish the initial classification for each station. To maintain a station's classification, a minimum of six samples must be collected annually from all approved sampling stations. Areas conditional on the operations at one or more treatment facilities must be sampled every month that the conditional area is open for harvest. Many stations are sampled more frequently because of their classification status or to provide additional water quality data under differing environmental conditions. The most recent 30 samples that were randomly collected are used to calculate the geometric mean and the P90 scores to determine the initial classification. This analysis is repeated annually using the most recent year's water quality data, to confirm that the water quality continues to meet the standards of its classification.