

**STATE OF MAINE  
DEPARTMENT OF MARINE RESOURCES**

**Pemaquid Mussel Farms, LLC  
Lease PEN STH2**

Standard Aquaculture Lease Application  
Raft Culture of Blue Mussels  
Stonington, North of St. Helena Island

Docket # 2009-01

**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION**

On December 2, 2008, the Department of Marine Resources (“DMR”) received an application from Pemaquid Mussel Farms, LLC, for a standard aquaculture lease on 1.86 acres located in the coastal waters of the State of Maine, off St. Helena Island in the Town of Stonington in Hancock County, for the purpose of cultivating blue mussels using suspended culture techniques. The application was accepted as complete on January 26, 2009. There are no intervenors in this case. A public hearing on this application was held on December 1, 2009, in Stonington, Maine.

**1. THE PROCEEDINGS**

Notices of the hearing and copies of the application and DMR site report were sent to numerous state and federal agencies for their review, as well as to various educational institutions, aquaculture and environmental organizations, the Town of Stonington and the Stonington Harbormaster, members of the Legislature, representatives of the press, riparian landowners, and other private individuals. Notice of the hearing was published in the *Penobscot Bay Press* on October 29 and November 19, 2009 and in the *Commercial Fisheries News* November, 2009 edition.

Sworn testimony was given at the hearing by the applicant, represented by Carter Newell, and by DMR’s Aquaculture Environmental Coordinator, Jon Lewis. Mr. Newell briefly described the proposed project and answered questions from Mr. Lewis. Mr. Lewis presented his site report, including a video presentation showing the sea bottom on the site. The sole attendees at the hearing were representatives of the applicant and the Department. The hearing was recorded by the Department. The Hearing Officer was Diantha Robinson.

The evidentiary record before the Department regarding this lease application includes three exhibits introduced at the hearing (see exhibit list below) and the record of testimony at the hearing itself. The evidence from all of these sources is summarized below.<sup>1</sup>

## **LIST OF EXHIBITS**

1. Case file, #2009-01.
2. Application signed and dated November 21, 2008.
3. DMR site report dated October 19, 2009.

## **2. DESCRIPTION OF THE PROJECT**

### **A. Site History**

The proposed lease site lies off the northwest side of St. Helena Island in the waters of Stonington, Maine, south of the Deer Isle Thorofare and north of Merchant Row. This site was previously leased to Ed Hutchinson for raft culture of blue mussels (experimental lease EHUT STH) from 2002 to 2005. In 2006, the site was expanded by 1.9 acres under a standard lease issued to Mr. Hutchinson. He terminated this lease in 2007, at which time two of the three rafts on the site were removed. A single mussel raft remained on the site; this has been operated since 2007 by Joseph Larrabee under four limited-purpose aquaculture licenses (LAR-1-07, LAR-2-07, LAR-3-07, and LAR-4-07). This lease proposed by Pemaquid Mussel Farms lies approximately in the same footprint as the earlier experimental lease.

### **B. Proposed Operations**

The applicant proposes to operate three 40' x 40' mussel rafts. Each raft consists of three 3' x 40' foam-filled polyethylene pontoons supporting five 40' galvanized steel I-beams. Eighty wooden cross-beams top the I-beams; from these wooden beams 450 dropper ropes 45' long will be suspended from each raft. Each rope is pierced by 45 9" plastic pegs spaced 12" apart. The bottom of each rope is weighted with a plastic case filled with cement (Application, p. 6). The rafts are manufactured by the Maine Aquaculture Equipment Corp. and "have been in use for 8 years under a variety of conditions" (Application, p. 10).

The rafts themselves will occupy less than 6% of the leased area. The moorings and mooring lines, however, will occupy the entire site. Each raft will be moored to six 750-kg. plow anchors using a combination of steel chain and polysteel rope, and each raft will also be secured to another raft with steel chain. The applicant has used this mooring array successfully for the past five years, and it has been designed "to withstand storms impacting the proposed lease area" (Application, p. 9).

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<sup>1</sup> NOTE: The reference (Smith/Jones) means testimony of Smith, being questioned by Jones.

The applicant plans to stock the rafts with mussels in October or May and harvest after approximately one year. The company will purchase mussel seed from other mussel growers in Maine, such as Tighrope Seafarms, or will collect it on ropes suspended from one of the rafts. Mussel seed will be “socked” onto the dropper ropes with a machine that “wraps biodegradable cotton around the rope at densities of about 120-400 [seed mussels] per foot of rope”; the plastic dropper pegs prevent the mussels sliding off the rope (Application, p. 10).

At harvest, three to four ropes (approximately 1,000 lbs.) will be lifted at a time by a crane and basket; the mussels will be removed from the rope and washed, separated, and graded by size. The applicant estimates a yield of approximately 30,000 to 60,000 lbs (maximum 1,000 bushels) of mussels from each raft; maximum stocking density will be 1,000 bushels per raft.

The applicant operates a 60-ft. fishing vessel, *F/V Mumbles*, which it will use for seeding, harvesting, and general site work. Access to the site will be gained from the town dock in Stonington. There are no shoreside facilities associated with this lease; any unused gear will be stored on the applicant’s property. The applicant expects to visit the site on three to five days each week over approximately a three-month period, making a single trip by boat each day. *Mumbles* contains a hydraulic pump powered by its main engine which will in turn power all the machinery used at the site; no powered equipment will be installed on the rafts themselves (Application, p. 10) The applicant will also use a 20’ skiff to visit the site for monitoring purposes (Newell/Lewis).

Predator nets will surround each raft to deter predation by eider ducks. The nets will remain on the rafts year-round and be serviced twice a year. Mr. Newell testified that predation by eiders is the biggest problem the applicant faces at the site.

According to Mr. Newell, activity at the site will be concentrated over about three months at the time the mussels are ready for harvest, which he expects to be sometime between April and January at the Stonington site, in order to avoid the worst winter weather (the company operates three other lease sites in Frenchman Bay, Belfast Bay, and the Damariscotta River). Harvest activity will also be affected by the status of red tide in the area (Newell/Lewis).

At the scoping session conducted by the applicant, some members of the public expressed concern that the applicant has no agents residing in Stonington who could respond quickly to any emergency involving the mussel rafts. At the hearing, Mr. Newell testified that in response to these concerns, the applicant has arranged with two fishermen in the Stonington area who will be available to go to the site in the event that a faster response is required than the applicant can provide. Mr. Newell also testified that by launching the applicant’s 20-ft. skiff in Stonington Harbor, he can get to the site and back in an hour (Newell/Lewis).

### **C. Site Characteristics**

The applicant selected the site based in part on “the local hydrography and biological productivity, current regime, water quality, lack of severe exposure during storms, and adequacy

of plankton production”. Depths at the site range from approximately 65 to 85 feet at mean low water (MLW) (Site Report, p. 4). The site report notes that this allows more than 20 feet of water below the bottom of the dropper ropes, providing sufficient separation to limit predators such as starfish and crabs from reaching the mussels on the ropes above (Site Report, p. 4). Tidal currents run east-west at approximately 22 cm/second on an incoming tide, adequate to supply food to the mussels but not strong enough to strip them from the dropper ropes (Site Report, p. 4).

The sea bottom at the site is flat, sloping gradually upward toward the west with very soft sediments and some evidence of past mussel drop-off. DMR scientists observed no boulders, ledges, outcrops or attached vegetation on the site (Site Report, p. 5). The site lies in Growing Area #38 and is classified by the DMR Water Quality Classification program as “open/approved for the harvest of shellfish”. The tidal flats on the north shore of St. Helena Island to the south of the site, however, are classified as “Prohibited”.

### **3. STATUTORY CRITERIA & FINDINGS OF FACT**

Approval of standard aquaculture leases is governed by 12 M.R.S.A. §6072. This statute provides that a lease may be granted by the Commissioner of DMR upon determining that the project will not unreasonably interfere with the ingress and egress of riparian owners; with navigation; with fishing or other uses of the area, taking into consideration the number and density of aquaculture leases in an area; with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna; or with the public use or enjoyment within 1,000 feet of beaches, parks, docking facilities, or conserved lands owned by municipal, state, or federal governments. The Commissioner must also determine that the applicant has demonstrated that there is an available source of organisms to be cultured for the lease site; that the lease will not result in an unreasonable impact from noise or lights at the boundaries of the lease site; and that the lease will be in compliance with visual impact criteria adopted by the Commissioner relating to color, height, shape, and mass.

#### **A. Riparian Access**

The proposed lease site lies approximately 136 ft north of the mean low water mark on the northerly side of St. Helena Island. There are no docks or moorings between the north shore of St. Helena and the proposed site<sup>2</sup>. A single riparian owns the entire island; the Department has received no complaints from him about access to the island or about lease operations on the site in the past.

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<sup>2</sup> The site report (Exhibit 3, p. 6) notes that “Remnants of a pier were present along the adjacent St. Helena shoreline, although this appeared to be abandoned and unused.”

It appears that the north shore of St. Helena is not used by the riparian for routine access, as no docks or moorings were observed there during the Department site visit. Past leases (including the larger, previous lease PEN STH) and the current LPA licenses (which have been operated in the same location with a single raft for the past two years), have not prompted complaints about interference with riparian access. With a minimum of 136 feet of water between the lease boundary and the island, there is adequate room for smaller boats to navigate to and from the portion of the island's shore that faces the proposed lease site.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner.

## **B. Navigation**

The site report notes that there have been aquaculture lease sites in this approximate location since 2002; the proposed site is 50% smaller than the PEN STH lease site that was operated from 2005-2007 (Site Report, pp. 5-6).

The proposed site lies parallel to the northwestern shore of St. Helena Island; the distance from the site's southern boundary to the mean low water mark on the island's northern shore is 136 ft. The distance from the southern site boundary to the nearest intertidal ledges to the south that would impede navigation at most tides between the site and the island is 175 ft. The distance to the nearest uplands on St. Helena's northern shore is 234 ft. from the site's southern boundary.<sup>3</sup> According to the site report, "Navigation between the lease site and St. Helena Island would be constrained to smaller vessels or vessels with local knowledge and a purpose for being in the area. Regular transit through this area would be unlikely" (Site Report, pp. 4-5).

More than 500 ft. of navigable water stretches to the north of the proposed site, similar to the situation that has existed since the first lease in that location (EHUT STH) was granted in 2002. To the west, the passage between St. Helena and Potato Island is unobstructed, according to the site report, with a channel approximately 615 ft. wide with a minimum depth of 8 ft. The report notes that during the visit, all observed vessel traffic in the vicinity kept to the channels to the west and north of the site. As the site report indicates, the presence of gear on the lease site will mean that vessels proceeding between the St. Helena-Potato passage and the waters to the northeast must maintain a slightly more northward heading to get around the proposed lease boundary before turning into or out of the passage (Site Report, p. 5).

This evidence demonstrates that the proposed lease will interfere only minimally with navigation in the area. Passage to the north of the site and west of St. Helena is unimpeded. Vessels passing to or from the east around the west end of St. Helena will need to stay to the north slightly before making the turn. Vessels navigating between the site and the north shore of St.

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<sup>3</sup> Site Report, pp. 4, 5; e-mail from Jon Lewis to Diantha Robinson 12-22-09; paper copy in case file (Exhibit 1).

Helena Island will find a minimum span of 136 ft. of water at low tide, adequate for the navigation of smaller vessels. This is not an unreasonable interference with navigation.

**Marking.** The lease site must be marked for navigation in accordance with U. S. Coast Guard requirements.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with navigation. The site must be marked in accordance with U.S. Coast Guard requirements.

### **C. Fishing & Other Uses**

The site report notes that lobster fishing takes place in the area around the proposed lease site, with five buoys located inside the proposed site boundary and twelve more between the southern boundary and St. Helena Island. Mr. Lewis noted at the hearing that lobsters were commonly observed during the underwater video survey and that seven years of mussel farming in that location, with the accompanying drop-off of mussels to the bottom, may have attracted lobsters to the area beneath the rafts. The site report notes that while fishing activity varies throughout the year, the deep water and soft bottom at the site limit the availability of scallops and urchins, which “prefer firmer substrate” (Site Report, p. 6).

**Other aquaculture leases.** According to the site report, there are no other aquaculture leases or licenses in the vicinity of the proposed lease site. One raft has been operated on the site since 2007 under four limited-purpose aquaculture licenses issued to Joe Larrabee, a principal in Pemaquid Mussel Farms, LLC. Those LPA licenses will not be renewed for 2010, and the raft will be operated as part of the proposed lease. The nearest aquaculture sites are 3.5 miles (straight line) distant, off the north end of Isle Au Haut (LPA licenses RUN 3-09 and RUN4-09, for the culture of American and European oysters) (Site Report, p. 6). The proposed site will not interfere with these aquaculture operations.

**Exclusivity.** The application notes that “Other uses such as recreational fishing, lobstering etc. should have no impact on the aquaculture activities and should not be limited” (Application, p. 12). Dragging will be prohibited on the site in order to protect the mooring equipment and other gear.

**Marking.** The lease must be marked in accordance with DMR Rule 2.80.<sup>4</sup>

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<sup>4</sup>**2.80 Marking Procedures for Aquaculture Leases**

1. When required by the Commissioner in the lease, aquaculture leases shall be marked with a floating device, such as a buoy, which displays the lease identifier assigned by the Department and the words SEA FARM in letters of at least 2 inches in height in colors contrasting to the background color of the device. The marked floating device shall be readily distinguishable from interior buoys and aquaculture gear.
2. The marked floating devices shall be displayed at each corner of the lease area that is occupied or at the outermost corners. In cases where the boundary line exceeds 100 yards, additional devices shall be displayed so as to clearly show the boundary line of the lease. In situations where the topography or distance of the lease boundary interrupts the line of sight from one marker to the next, additional marked floating devices shall be displayed so as to maintain a continuous line of sight.

It is apparent from this evidence that fishing activity on the site is minimal, that lobstering and recreational fishing can continue in open areas of the site, and that the proposed lease operation will not interfere with fishing to any significant degree.

**Therefore, considering the number and density of aquaculture leases in the area, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with fishing or other uses of the area. Dragging will be prohibited within the site boundaries, but recreational fishing and lobstering will be permitted within the open areas of the site.

#### **D. Flora & Fauna**

According to the site report, no vegetation was observed under or around the single raft now located on the proposed lease site. Blue mussels and large numbers of lobsters were observed, as well as much smaller numbers of crabs, sea stars, mud shrimp, anemones, and sea cucumbers. The site visit in 2005 disclosed that mussels had fallen from the ropes, creating a thriving mussel bed just beneath the rafts, with crabs and mussels sitting on the surface of the soft, mud bottom. Outside the rafts' shadow, the bottom was soft and species much less abundant. Four years later, as observed in the September, 2009 site visit, the mussel drop-off appeared to have decreased; the mussels had knitted themselves together in the mud, creating a firm substrate into which lobsters had burrowed (Site Report, pp. 6-7).

**Essential/Significant Habitat.** According to maps issued by the Maine Department of Inland Fisheries and Wildlife, George Head Island and its ledges to the southwest of St. Helena Island are designated as Significant Habitat for shorebird roosting, with a 250-ft. buffer; the proposed lease site is some 1,700 ft. from this buffer. No designated Essential Habitat for endangered and threatened species exists within one-quarter mile of the proposed lease site. A copy of the application was sent to the Maine Department of Inland Fisheries and Wildlife, but the agency did not comment.

From this evidence, it appears that the lease activity will not interfere with existing flora and fauna on the site.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

#### **E. Public Use & Enjoyment**

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3. When such marking requirements are unnecessary or impractical in certain lease locations, such as upwellers located within marina slips, the Commissioner may set forth alternative marking requirements in an individual lease.
4. Lease sites must be marked in accordance with the United State's Coast Guard's Aids to Private Navigation standards and requirements.

The site report indicates that there are no government-owned beaches, parks, or docking facilities within 1000 feet of the proposed lease site (Site Report, p. 8). According to information provided by the Maine State Planning Office (included in the case file, Exhibit 1), there are no government-owned conserved lands located within 1,000 feet of the proposed site.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities or certain conserved lands owned by municipal, state, or federal governments.

#### **F. Source of Organisms**

The applicant will collect mussel seed on the site from ropes on one of the rafts or will purchase it from other Maine growers (Application, pp. 1, 10).

**Therefore, I find** that the applicant has demonstrated that there is an available source of stock to be cultured for the lease site.

#### **G. Light**

According to the application, “No lights other than those required by the US Coast Guard will be used. Working beyond daylight hours would be very unusual and only if there is a crisis situation such as a mooring failure” (Application, p. 10). The site report notes that navigational aids might be required by the U.S. Coast Guard, and these could consist of white or yellow marker lights.

The evidence shows that light will only be used on the proposed lease site in an emergency or as navigational markings possibly required by the Coast Guard. The impact of light from either of these sources will be minimal at the site boundaries.

**Therefore, I find** that the aquaculture activities proposed for these sites will not result in an unreasonable impact from light at the boundaries of the lease site.

#### **H. Noise**

The application indicates that no powered equipment will be installed on the rafts at the site. Power for machinery to be used at the site will be provided by the *F.V Mumbles*, which has a hydraulic pump inside the hull that is driven by the main engine and “is very quiet in operation”. The engine has an exhaust muffler, as well (Application, p. 10).

The site report notes that the *Mumbles* is used for seeding and harvesting mussel rafts “over a wide area of the coast” (Site Report, p. 8).

Seeding and harvesting work at the site, which will require use of machinery, is planned to take place during three to five days each week over approximately three months each year (Application, p. 10; Newell, testimony). With the power source located inside the hull of the *Mumbles* and the exhaust also muffled, the level of noise will be reduced to the greatest extent possible. Given the limited amount of time that work will be conducted on the site, any noise



generated by operations on the site is unlikely to have a significant effect at the boundaries of the lease site.

**Therefore, I find** that the aquaculture activities proposed for this site will not result in an unreasonable impact from noise at the boundaries of the lease.

### **I. Visual Impact**

According to the application, the mussel rafts are made of gray steel, black floats, and weathered wooden crossbeams with black bird netting (Application, p. 9). The site report drew attention to the fact that the *F/V Mumbles* will be routinely used at the site and thus is covered by DMR Rule Chapter 2.37 (10) governing visual impact. *Mumbles* is 60 ft. long and less than 20 ft. in height. At the hearing, Mr. Newell testified that vessel is a rusty brown color, the “house” or superstructure is as low as possible, and the crane was recently painted gray instead of orange (Newell/Lewis).

The visual impact criteria of Chapter 2.37 (10) require that structures on lease sites minimize their visual impact as viewed from the water. Vessels are limited in height to no more than 20 feet above the water line, excluding cranes. Colors should blend with the surroundings and be flat, not glossy, provided this does not compromise safe navigation or conflict with U.S. Coast Guard requirements.

It appears from the evidence that the *Mumbles* meets these criteria: it is a fishing vessel, like many in the vicinity; it is less than 20 ft. in height, and its colors blend with the surroundings, which consist primarily of rock, spruce trees, seaweed, and ocean water. It will be used at the site for three to five days each week for approximately three months a year while seeding and harvesting work is being conducted. It will blend into the environment, as it will resemble other vessels that operate in the area. The rafts likewise will blend with the surroundings as far as possible; their profile is low by nature, so they will have minimal visual impact when viewed from the water.

**Therefore, I find** that the equipment, buildings, and watercraft to be used at the proposed lease site will comply with the visual impact criteria contained in DMR Regulation 2.37 (1) (A) (10).

## **4. CONCLUSIONS OF LAW**

Based on the above findings, I conclude that:

1. The aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner.

2. The aquaculture activities proposed for this site will not unreasonably interfere with navigation. Navigation will be allowed on the open areas of the site. The lease site shall be marked in accordance with U. S. Coast Guard requirements.

3. The aquaculture activities proposed for this site will not unreasonably interfere with fishing or other uses of the area, taking into consideration the number and density of aquaculture leases in the area. The lease boundaries must be marked in accordance with the requirements of DMR Rule 2.80. Dragging will be prohibited within the site boundaries, but recreational fishing and lobstering will be permitted in the open areas of the site.

4. The aquaculture activities proposed for this site will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

5. The aquaculture activities proposed for this site will not unreasonably interfere with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by municipal, state, or federal governments.

6. The applicant has demonstrated that there is an available source of blue mussels (*Mytilus edulis*) to be cultured for the lease site.

7. The aquaculture activities proposed for this site will not result in an unreasonable impact from light at the boundaries of the lease site.

8. The aquaculture activities proposed for this site will not result in an unreasonable impact from noise at the boundaries of the lease site.

9. The aquaculture activities proposed for this site will comply with the visual impact criteria contained in DMR Regulation 2.37(1)(A)(10).

Accordingly, the evidence in the record supports the conclusion that the proposed aquaculture activities meet the requirements for the granting of an aquaculture lease set forth in 12 M.R.S.A. §6072.

**5. DECISION**

Based on the foregoing, the Commissioner grants the requested lease of 1.86 acres to Pemaquid Mussel Farms, LLC, for ten years for the purpose of cultivating blue mussels (*Mytilus edulis*) using suspended culture techniques. The applicant shall pay the State of Maine rent in the amount of \$100.00 per acre per year. The applicant shall post a bond or establish an escrow account pursuant to DMR Rule 2.40 (2) (A) in the amount of \$ 5,000.00, conditioned upon its performance of the obligations contained in the aquaculture lease documents and all applicable statutes and regulations.

**6. CONDITIONS TO BE IMPOSED ON LEASE**

The Commissioner may establish conditions that govern the use of the lease area and impose limitations on aquaculture activities, pursuant to 12 MRSA §6072 (7-B)<sup>5</sup> Conditions are designed to encourage the greatest multiple compatible uses of the lease area, while preserving the exclusive rights of the lessee to the extent necessary to carry out the purposes of the lease.

The following conditions shall be incorporated into the lease:

1. The lease site must be marked in accordance with both U.S. Coast Guard requirements and DMR Rule 2.80.
2. Navigation will be allowed on the open areas of the site.
3. Dragging will be prohibited within the site boundaries, but recreational fishing and lobstering will be permitted in the open areas of the site.

**7. REVOCAION OF LEASE**

The Commissioner may commence revocation procedures upon determining pursuant to 12 MRSA §6072 (11) and DMR Rule Chapter 2.42 that no substantial aquaculture has been conducted within the preceding year, that the lease activities are substantially injurious to marine organisms, or that any of the conditions of the lease or any applicable laws or regulations have been violated.

Dated: 1/27/10

/s/ George D. Lapointe  
**George D. Lapointe (Commissioner)**  
**Department of Marine Resources**

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<sup>5</sup> 12 MRSA §6072 (7-B) states: "The commissioner may establish conditions that govern the use of the leased area and limitations on the aquaculture activities. These conditions must encourage the greatest multiple, compatible uses of the leased area, but must also address the ability of the lease site and surrounding area to support ecologically significant flora and fauna and preserve the exclusive rights of the lessee to the extent necessary to carry out the lease purpose."