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STAFF REPORT: REGULAR CALENDAR

Application No.:	**9-19-1242**
Applicant:	**Tomales Bay Oyster Company, LLC**
Location:	Tomales Bay, Marin County.
Project Description:	Request for after-the-fact approval for installation and use of on-bottom and off-bottom shellfish cultivation equipment; approval for the collection and removal of abandoned and obsolete aquaculture equipment and materials, both after-the-fact and ongoing, within one state water bottom lease in Tomales Bay, Marin Co.
Commission Action:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

Under its current management, Tomales Bay Oyster Company, LLC (TBOC) has carried out shellfish aquaculture operations in Tomales Bay since 2017 and has proposed after-the fact permitting to bring its planting, harvest, and maintenance operations into compliance with the Coastal Act. TBOC is also seeking after-the-fact authorization for its collection and removal from its state aquaculture lease of approximately 628 cubic yards (spread out over 24 acres) of aquaculture materials that

had been abandoned by previous operators, including rope, iron racks, cultivation bags, hardware and PVC posts, and is proposing the further collection and removal of an additional 70 cubic yards of equipment and materials – including through the abandonment of approximately 3.25 acres of existing cultivation beds. TBOC currently cultivates Pacific oysters and bay mussels within a 160 acre state aquaculture lease managed by the California Department of Fish and Wildlife in partnership with the California Fish and Game Commission known as State Water Bottom Lease No. M-430-05. This is the area in which TBOC has been cultivating shellfish across approximately 36 acres of individual cultivation beds and is seeking after-the-fact and ongoing (for roughly 33 acres) authorization from the Commission. TBOC's management also oversees oyster cultivation on another area in Tomales Bay (State Water Bottom Lease No. M-430-04) authorized by the Commission under Coastal Development Permit No. 1-93-73, 1-93-73-A1, and 1-93-73-A2 issued to the Charles Friend Oyster Company.

In the project area, TBOC currently uses a variety of bottom bags, tipping bags, and floating longlines, as well as a small amount of hanging gear from its work barge. The site is accessed and farmed by way of TBOC's shore-side operation, which is situated on three acres of mostly dry land adjacent to Highway One between Millerton and Tomasini Points. A CDP application for after-the-fact authorization of TBOC's operations on this landward area is expected to be brought to the Commission for consideration later this year pending the completion of permit and design review processes ongoing with Marin County.

Within its offshore area, TBOC also uses one floating barge, which is anchored to the substrate below, as a staging site for its planting and harvesting activities. Attached to the barge are roughly a dozen hanging lines of bay mussels. Additionally, TBOC employs three types of cultivation techniques on its lease: floating longlines (23.7 acres), bottom bags (9.6 acres, 6.4 acres of which are proposed to be retained), and tipping bags (2.9 acres). Primarily, TBOC grows Pacific oysters using these methods but also cultivates bay mussels on its floating longline gear. In addition to the cultivation area, TBOC's operations include the use of a wet holding system that draws water directly from Tomales Bay for live shellfish as well as shellfish cleaning and processing operations on its dock/pier structure. The intake pipe for these operations is located adjacent to the floating barge. The pipe is a 4-inch diameter intake located within a submerged sand filtration structure and screened with multiple layers of 0.25-inch mesh to minimize potential marine life entrainment and debris from entering the pipe.

As a result of TBOC's failure to obtain the necessary authorizations prior to carrying out development activities, violations of the Coastal Act exist within the project area. These include, but are not necessarily limited to, unpermitted installation and use of a work barge and unpermitted installation and operation of floating longlines, bottom bags, and tipping bags used to cultivate oysters and mussels, as well as the unpermitted collection and removal of abandoned aquaculture equipment and materials. In response to notification by Commission permitting and enforcement staff (Notice of Violation letters sent on April 24, 2014, August 20, 2014, October 24, 2014, and October 2, 2015) about these Coastal Act violations– and specific suggestions that it begin to seek resolution of

its Coastal Act violations through the administrative process of seeking after-the-fact authorization from the Commission, TBOC prepared and submitted this CDP application. Approval of this application pursuant to the staff recommendation, issuance of the permit, and the applicant's subsequent performance of the work authorized by the permit in compliance with all of the terms and conditions of the permit will result in resolution of the above-described violations going forward. The matter has been referred to the Commission's enforcement division to consider options for future actions to address the liabilities that accrued while the violations were extant.

Potential Coastal Act issues raised by TBOC's proposed project primarily involve marine biological resources. Tomales Bay supports a wide range of ecologically important and sensitive marine habitats and wildlife, and many of these habitats and species can be found in and around TBOC's operations. For example, TBOC's lease areas support extensive beds of eelgrass and foraging habitat for a wide variety of shorebirds and marine wildlife.

In order to ensure that these coastal resources are appropriately protected, several Special Conditions are recommended. These would: establish a permit term that is consistent with the current term of TBOC's state lease (**Special Condition 1**); protect eelgrass by ensuring no new cultivation structures are placed within eelgrass habitat (**Special Condition 2**); protect marine habitat, wildlife and water quality by memorializing TBOC's commitment to remove abandoned aquaculture debris (**Special Condition 3**); and reduce marine debris in Tomales Bay by requiring TBOC to implement a series of debris prevention and recovery practices (**Special Conditions 6 and 10**). Commission staff believes that the implementation of **Special Conditions 1** through **11** will reduce impacts to marine resources such that the projects can be found consistent with the marine resources policies of the Coastal Act.

The Commission staff therefore recommends that the Commission **APPROVE** coastal development permit application 9-19-1242, as conditioned. The motion to carry out this recommendation is on page 5. The standard of review is Chapter 3 of the Coastal Act.

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EXHIBITS

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I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit 9-19-1242 pursuant to the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves the Coastal Development Permit for the proposed project and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the applicant or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the applicant to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Permit Term Limit and Scope. Authorization for development activities on State Water Bottom Lease M-430-05 shall expire on the current date of that lease's expiration: February 8, 2027. If the terms of the lease are amended or a new lease issued by the California Fish and Game Commission, Tomales Bay Oyster Company (TBOC) may submit an application for a permit amendment requesting an extension of the permit term. TBOC shall, no less than 60 days prior to permit expiration or the cessation of its operations on the State Water Bottom Lease associated with this permit, submit a complete application to amend this permit to remove all cultivation equipment and accumulations of oyster shell and return the lease area to a natural condition, and it shall thereafter work in good faith to obtain that permit and remove development authorized by Permit 9-19-1242 and restore the lease area.

2. Eelgrass Habitat and New Cultivation Areas. All shellfish cultivation activities and equipment shall be limited to occur within the approximately 33 acres of existing cultivation beds not identified for removal on **Exhibit 4.** No changes to the type of cultivation equipment used within the approximately 33 acres of existing cultivation beds not identified for removal on **Exhibit 4** shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required. Any installation of new shellfish cultivation equipment, anchors, or other structures, gear or equipment outside of these cultivation beds shall require an amendment to this coastal development permit and shall not be installed or placed on, in, or over eelgrass habitat, as determined by the Executive Director using the definition of eelgrass habitat in the National Marine Fisheries Service's October 2014 California Eelgrass Mitigation Policy and Implementing Guidelines (CEMP). While installation of new shellfish cultivation structures and equipment shall be prohibited within eelgrass habitat, as defined in the CEMP, if such eelgrass habitat further moves or expands into the approximately 33 acres of cultivation beds with existing cultivation structures and/or equipment identified in **Exhibit 4** (excluding those identified for removal), the Permittee may continue to maintain and use these areas for shellfish cultivation.

3. Removal and Disposal of Abandoned Structures. Within 24 months of permit issuance, TBOC shall collect and remove all abandoned shellfish cultivation structures (including wooden and PVC posts and remnants of cultivation racks) from within and in the immediate vicinity of State Water Bottom Lease No. M-430-05 in accordance with **Exhibit 4**. All collected materials shall be properly disposed of at a certified onshore landfill or waste receiving facility or properly maintained at an onshore storage area for reuse. Upon completion of removal activities, TBOC shall provide, for Executive Director review and approval, a final report documenting the estimated amount of material removed, the areas from which it was removed, and before/after photographs of the removal areas.

4. Cultivation Site Access and Vessel Use. During vessel transit, harvest, maintenance, inspection, and planting operations, TBOC shall avoid approaching, chasing, flushing, or directly disturbing shorebirds, waterfowl, seabirds, or marine mammals. In addition, typical in-water operations involving boat use shall be carried out consistent with the vessel routes and vessel management measures included in **Exhibit 2**. The use of cars, trucks, all-terrain vehicles or other wheeled or tracked motorized vehicles shall be prohibited on all intertidal and subtidal areas within or adjacent to the lease area associated with this permit.

5. Annual Report. By December 31 of each year, TBOC shall submit to the Executive Director an annual report with information regarding the results of quarterly cleanup events carried out as described in **Special Condition 6** and the date of training, training materials, meeting minutes, and list of attendees from the Marine Debris Reduction Training described in **Special Condition 6.** In addition, the annual report shall include information on the estimated number of cultivation bags and/or baskets lost, replaced, and recovered throughout the course of the year, as well as any design, management, or operational changes implemented to address issues that have arisen with the expanded use of elevated cultivation bags and/or baskets. The annual report shall also include a description of any significant changes to the type, quantity and configuration of cultivation equipment that are being considered and any resource or operational challenges that are emerging.

6. Marine Debris Reduction and Management. TBOC shall carry out operations consistent with the following marine debris reduction and management practices:

A. Storm Damage and Debris. In the event that its shellfish culture gear or equipment becomes displaced or dislodged from culture beds, it shall be TBOC's responsibility to retrieve the material from the shoreline, open water, eelgrass beds, mudflat, or submerged bottom with minimal damage to the resources affected. Once located, such material shall be removed as soon as feasible and properly disposed of, recycled, or returned to use. As soon as safely and reasonably possible following storm or severe wind or weather events, the Permittee shall patrol all of its active cultivation areas for escaped or damaged aquaculture equipment. All equipment that cannot be repaired and placed back into service shall be properly recycled or properly disposed of at a certified onshore waste disposal facility. In addition, TBOC shall retrieve or repair any escaped or damaged aquaculture equipment that it encounters while conducting routine daily and/or monthly maintenance activities associated with shellfish culture (e.g. bed inspections, shellfish harvest and planting). If the escaped gear cannot be repaired and replaced on the shellfish bed, it shall be properly recycled or disposed of at a certified onshore waste disposal facility.

B. Gear Marking. The Permittee shall mark shellfish culture bags, baskets, and floats in an easily identifiable manner with identification information including its company name. Markings shall be securely attached and robust enough to

remain attached and legible after an extended period in the marine environment (e.g. heat transfer, hot stamp, etching). In the event that its shellfish culture gear or equipment becomes displaced or dislodged from culture beds, it shall be the Permittee's responsibility to retrieve the material from the shoreline, open water, eelgrass beds, mudflat, or submerged bottom with minimal damage to the resources affected. Once located, such material shall be removed as soon as feasible and properly disposed of, recycled, or returned to use.

C. Marine Debris Reduction Training. The Permittee shall conduct annual employee training regarding marine debris issues, including covering how to identify culture gear or associated materials (marking stakes, support posts, longlines, label tags, clasps, etc.) that are loose or at risk of becoming loose, proper gear repair methods, and how to completely remove gear from out-of-production areas. Particular focus shall be placed on management and maintenance practices to reduce the loss of any gear type that is frequently lost or consistently found during bay cleanup and inspection activities. This training shall be repeated on an annual basis throughout the term of the permit. During trainings, the Permittee's employees shall be encouraged to consider and implement field and management practices that reduce the amount of small plastic gear (such as zip-ties, tags and fasteners) and non-biodegradable material (such as PVC stakes and nylon or polypropylene rope) used in its operations.

D. Cleanup Events. The Permittee shall continue to carry out quarterly cleanup events in Tomales Bay in coordination with other interested parties or organizations. Cleanup events shall include walking different portions of the bay and shorelines, in particular those sections in southern Tomales Bay identified in **Exhibit 5**, to pick up escaped shellfish gear and other trash (regardless of whether it is generated by the project). The volume and type of shellfish gear collected and the cleanup location (marked on a map) and duration of cleanup activity shall be recorded and documented in the annual report submitted to the Executive Director of the Commission. If persistent discoveries of certain gear types are made, the Permittee shall evaluate (and if feasible, implement use of) alternative gear types or practices that would reduce these persistent sources of debris.

E. Ongoing Operations. With the exception of materials temporarily and securely stored on its floating work barge and pier, the Permittee shall not leave or temporarily store tools, loose gear, or construction materials on its leased tidelands or surrounding areas. Work platforms shall not be used for long-term (months to years) storage or stockpiling of shellfish cultivation gear, and temporarily (days to weeks) stored or stockpiled gear shall be minimized and secured or maintained in covered containers whenever feasible. All aquaculture gear installed on and in use in active cultivation sites shall be kept neat and secure and maintained in functional condition. The Permittee

shall carry out regular bed inspections and maintenance activities to help ensure that broken, collapsed, fallen, or buried gear is fixed or removed in a timely manner. In addition, all mesh cultivation bags in use by the Permittee for oyster cultivation shall be placed within designated areas and tethered to anchor lines, elevated tipping lines, floating longlines or barges.

F. Bed Cleaning at Harvest. At the time of harvest of each cultivation area, the Permittee shall carry out a thorough inspection to locate and remove loose, abandoned or out of use equipment, tools, and accumulations of oysters from the surrounding substrate. Oyster shell shall not be intentionally placed or deposited within the lease outside of cultivation gear, and oysters or oyster shell accidentally spilled during harvest shall be immediately collected and removed.

G. Excessive Gear Loss or Maintenance Failures. If the Executive Director determines that the Permittee is responsible for excessive loss of aquaculture equipment (including bottom bags, tipping bags or floating longlines) into the marine environment or is consistently failing to maintain its equipment in an intact and serviceable condition, the Permittee shall, within 60 days of the Executive Director's written notification, submit a complete permit amendment application to modify its cultivation equipment and/or operational practices to address the issue, unless the Executive Director determines that no such amendment is necessary to implement the necessary changes.

7. Hazardous Material Spill Prevention and Response Plan. WITHIN 60 DAYS OF PERMIT APPROVAL, the Permittee shall submit for Executive Director review and written approval, a project-specific Spill Prevention and Response Plan (SPRP) for work vessels, barges, and gasoline powered machinery that will be used during project construction and operational activities. TBOC and its personnel shall be trained in, and adhere to, the emergency procedures and spill prevention and response measures specified in the SPRP during all project installation and operations. The SPRP shall provide for emergency response and spill control procedures to be taken to stop or control the source of the spill and to contain and clean up the spill. The SPRP shall include, at a minimum: (a) identification of potential spill sources and quantity estimates of a project specific reasonable worst case spill; (b) identification of prevention and response equipment and measures/procedures that will be taken to prevent potential spills and to protect marine and shoreline resources in the event of a spill. Spill prevention and response equipment shall be kept onboard project vessels and barges at all times; (c) a prohibition on vessel fueling/refueling activities outside of designated fueling stations, carried out with spill prevention and response protocols in place; and (d) emergency response and notification procedures, including a list of contacts to call in the event of a spill.

8. Herring Spawn. During the months of December, January and February, the Permittee shall visually inspect beds prior to planting and/or harvesting to determine if Pacific herring (*Clupea pallasi*) has spawned on eelgrass, culture materials, or

substrate. Visual inspections shall be conducted in accordance with the survey protocols developed by the California Department of Fish and Wildlife (CDFW). In addition, at the beginning of the three month long herring spawning period, the Permittees shall provide staff of the CDFW Santa Rosa Marine Region a schedule of planting and/or harvesting activities anticipated to occur during the period. The Permittees shall inform CDFW Santa Rosa office staff with the proposed location of planned planting and/or harvesting activities no less than 48 hours prior to the activities. If herring spawning has been recently observed by the Permittees or CDFW staff on or in the immediate vicinity of planned planting and/or harvesting activities, the Permittees shall:

a. Postpone planting and/or harvesting activities on any culture beds in those areas for two weeks, or until CDFW staff confirm herring eggs have hatched; and
b. Notify the CDFW Santa Rosa Marine Region office and Water Board of the spawn within 24 hours. The Permittees shall keep records of when CDFW was notified of the spawning event and provide those in the following year's Annual Report.

9. Inadvertent Discovery Protocol. In the event of an inadvertent discovery of human remains, the Permittee will halt all work within the vicinity of the discovery. The Permittee will notify the county coroner within 24 hours of the discovery and notify the NAHC if the remains are likely Native American. Mitigation measures shall be determined based on the recommendations of the most likely descendants as identified by the NAHC.

10. Wet Holding System and Biofouling. All maintenance cleaning and sorting of shellfish or cultivation gear shall be carried out onshore. Within no more than 24 months of permit issuance, all biofouling organisms and biological materials removed during these cleaning operations shall be collected and disposed of at an appropriate upland facility and no discharge of untreated wash water or biofouling materials into Tomales Bay shall occur during maintenance cleaning operations.

11. Other Agency Review and Approval. PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION AND/OR INSTALLATION ACTIVITES, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, and/or authorizations for the approved project have been granted, including those from the Regional Water Quality Control Board, California Fish and Game Commission, and U.S. Army Corps of Engineers. Any changes to the approved project required by these agencies shall be reported to the Executive Director. No changes to the approved project shall occur without an amendment to this permit unless the Executive Director determines that no amendment is legally necessary.

IV. FINDINGS AND DECLARATIONS

A. BACKGROUND AND PROJECT DESCRIPTION

Under its current management, Tomales Bay Oyster Company (TBOC) has been carrying out shellfish aquaculture in Tomales Bay since 2017[1], but it is also the latest in a series of aquaculture businesses with the same or similar names that have been in operation in Marin County since approximately 1876. An assessment of historic records carried out by TBOC indicates that portions of the area it is currently using for oyster cultivation (State Water Bottom Lease No. M-430-05) have supported that activity for over a hundred years and that it may be one of the earliest oyster cultivation areas in California. Over that period, cultivation methods and business entities have changed and evolved, and the methods currently implemented were not in use historically. Historic methods such as the use of redwood stakes and the placement on submerged bay habitat and later collection of loose oyster shell no longer occurs and has been replaced with the use of plastic mesh bags and baskets in a variety of configurations (as described further below).

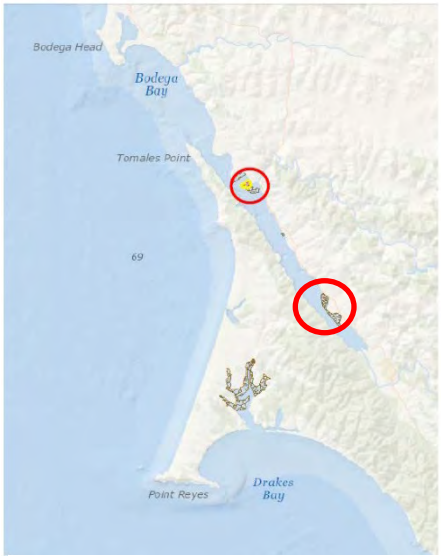

Figure 1: Location of CFOC M-430-04 (north) and TBOC M-430-05 (south)

For a variety of reasons, including its historic connections and changes in ownership and management, TBOC's operation never sought nor received authorization through a coastal development permit[2] and either did not seek or significantly deviated from the scope of its other state and federal authorizations. After many years of discussions between Commission and other regulatory agency staff and TBOC's former and current management, several years ago TBOC began the process of seeking after-the-fact authorization for its operations from the Coastal Commission, Fish and Game Commission (FGC), Regional Water Quality Control Board (Water Board) and U.S. Army Corps of Engineers (USACE). These efforts are now nearing completion, and TBOC has received a conditional permit from USACE, an updated and amended lease from FGC and has made significant progress in its application to the Water Board. Like its CDP application, these authorizations have been focused solely on resolving regulatory compliance issues and authorizing

[1] In 2009, an aquaculture company operating in this location called Tomales Bay Shellfish Company was purchased from Drew Alden, renamed to Tomales Bay Oyster Company, and operated by Charles (Tod) Friend until 2017 when management transitioned to the current operator, Heidi Gregory.

[2] It should be noted, however, that in 1982, CDP No. 2-82-38 was issued to Golden Gate Oyster Company for cultivation of 10.000 oysters using 16 rows of flexible plastic stakes on 1.75 acres of state tidelands currently within state water bottom lease no. M-430-05. This aquaculture activity was discontinued prior to the initiation of those activities for which Tomales Bay Oyster Company is seeking after-the-fact authorization from the Commission.

TBOC's existing in-water operations on State Water Bottom Lease No. M-430-05 – no expansion of these operations or other significant changes are proposed.

TBOC is similarly working with Marin County Planning Department and Commission staff to resolve unpermitted development and operations at its onshore site adjacent to lease M-430-05. This site supports shellfish processing, storage, sales, and other related operations. Based on the most recent discussions with County staff, a CDP application related to these efforts within the Commission's retained permit jurisdiction (and potentially, consolidated permit jurisdiction) is likely to come before the Commission in 2023.

Although not included in the proposed project, TBOC's management also oversees the cultivation of oysters in Tomales Bay (under the name of Charles Friend Oyster Company (CDP 1-93-73-A1)) at a location several miles further north in the bay (**Figure 1**). Lease area M-430-05 is approximately 160 acres in size and spans from Millerton to Tomasini point. As described in more detail below, cultivation of oysters and mussels takes place on approximately 33 acres of the lease.

TBOC's operations, in addition to the cultivation area, also include a 360 square foot work barge located in the cove area of its lease, west of the pier and work facilities. The barge is used as a staging area for planting, sorting, harvesting and transferring shellfish. In addition, bags of bay mussels are cultivated from the sides of the barge in mesh bags that hang into the water. The top of the barge supports two wooden sorting tables but it has no mechanical equipment, power or fuel. Two trash containers used to collect culled shellfish and other debris from sorting or transfer activities are tied to the sorting tables with poly rope. Equipment for farm infrastructure like anchors, pipe or rope may be stored on the barge temporarily and is securely tied down under the tables.

Extending into the subtidal waters of the bay from the shoreline is a 100 foot long pier (**Figure 2**) used for equipment staging and shellfish planting, transfers, cleaning and processing. There is a sorting area, wash down table, and a quick tube sorter.[3] The dock has electricity hardwired from the property electrical panel. The dock also is the end place of an intake system that was installed in the early 1980's which draws water from the bay next to the work barge. The intake system has an average daily intake of approximately 190 gallons (70,000 gal/year). It is encased in a 4 foot-wide, 8 foot-long, 12 inch-deep fiberglass tub filled with gravel as a filter and incased in a .25 inch mesh screen (**Exhibit 6**). According to the previous owners of the site, installation of the intake system was done by hand: the 4-inch PVC pipe that transports seawater to the pier is anchored to the bay bottom using wooden stakes, helix anchors, and a pipe strap.

[3] CDP Waiver 1-87-177W was issued to another company, Tomales Bay Shellfish Farms, Inc., on November 20, 1987 for a new refrigeration unit, packing shed, dock improvements/expansion, and renovation of oyster holding tanks.

Adjacent to the pier is a recirculation, wet holding system, which holds the live shellfish until they are ready for commercial sale. The system is composed of three concrete and fiberglass lined tanks which are 30 feet long, 4 feet wide and 2 feet deep. Each tank can hold approximately 2,150 gallons of water (6,450 gallons total) and up to 25,000 (adult) oysters (75,0000 oysters total). Each tank is fitted with six fiberglass hinged lids in order to ensure that wildlife and debris are not entering the system. Water is generally added weekly using the seawater intake with a 3-horsepower electric pump (160 gallons per minute). The water enters the system through the intake passing through the pump, two sand filters, and then through an 800-watt ultraviolet sterilizer. Finally, it goes through two Trane Air conditioner water chillers before entering the tanks.

The tanks are cleaned and sanitized on a routine weekly basis in order to retain as much cold saltwater as possible. The spent cleaning water is transported via hose to a leach field approximately 50 feet from the tank adjacent to the shoreside house above the high tide line, this action is performed during low tide. TBOC keeps a log of the weekly treatment and release to the leach field and the leach field exclusively disposes of water from the wet holding system. Operation of this leach field would be evaluated as part of the pending CDP application for TBOC's shoreside operations.

Figure 3: View on landward end of pier looking towards the wet holding system, the plumbing rising through the dock on the left is the main water intake line for the system.

Current Operations

In total, TBOC's current state bottom waters lease covers approximately 160 acres of subtidal and intertidal land within Tomales Bay. Within these 160 acres, TBOC's current operations are made up of approximately a dozen plots, two of which are planned to be removed, and one of which will be partially removed as they fall outside of the CDFG revised lease boundaries. In total, the existing operations cover approximately 33 acres of the lease area. **Exhibit 4** shows the location, type and size of structures and equipment that TBOC currently uses.

Floating Longlines
TBOC requests after-the-fact authorization for approximately 23.7 acres of floating longline gear. 200-475 foot longlines are anchored with 4 or 5 helix type anchors (spaced approximately every 50-feet) into the substrate and are raised to the surface using plastic buoys. TBOC currently attaches polyethylene mesh bags with plastic floats attached on each end to the buoyed longline to keep the bags on the surface. Each line can hold 75-165 oyster bags. Floating longlines typically contain small, young oyster for approximately 6-8 months. TBOC also uses floating longline gear for up to 1,200 mussel bags (currently 534 are on the lease) floating bags of mussels as well as up to 800 mussel socks (approximately 200 mussel socks are currently in use).

Tipping Bags
TBOC requests after-the-fact authorization for approximately 2.9 acres of tipping bag gear. 120-300 foot long lines are suspended approximately 4.5-feet above the bay floor in shallow water using PVC pipes and are anchored at either end with a helix anchor. TBOC currently suspends polyethylene mesh bags with a plastic float on one end of the bag from the longlines. Tipping bags contain slightly matured oysters that will continue to grow for a year or more. The tipping bag system allows the oysters to float with the tide, without the routine manual flipping required of bottom bags.

Bottom Bags
TBOC requests after the fact authorization for approximately 6.4 acres of bottom bag cultivation gear. Bottom bag cultivation takes place along the mudflat. 2 foot by 3 foot plastic mesh bags are spread out along the mudflats and attached to 200-400 foot long lines which are secured to the mudflat by PVC pipes. On average, the lines hold between 100-250 bags per line, and TBOC estimates approximately 5,000 bags are in use on the lease site. Bags are flipped on a weekly or bi-weekly basis using a long hook in order to prevent oysters from growing onto each other or suffocating. The bags, and oysters within, mature for 12 to 24 months until they are a harvestable size. TBOC has removed or intends to remove approximately 3.25 acres of legacy bottom longline gear from areas of the lease that fall outside of CDFW revised boundaries.

Figure 4: (From left) Floating Bag, Tipping Bags at low tide in M-430-05, bottom bag cultivation in Morro Bay (photo credit Heidi Gregory/TBOC and San Luis Obispo Tribune)

Floating work barge: TBOC requests after-the-fact authorization for a 360-square foot work barge from which bags of bay mussels are hung. TBOC uses 13 lines, approximately 10 feet long, which hold 10 grow bags of mussels. Grow bags are the same as those used for oyster bottom cultivation (2 foot by 3 foot nylon mesh bags) and suspended in the water column. The floating work barge (**Figure 4**) is non-mechanized, but used for staging and sorting of equipment during operations.

The remaining portion (approximately 127 acres) of the lease is not used for aquaculture cultivation, and much of the area contains extensive eelgrass beds that are required to be protected from damage and disturbance.

Planting, Harvest and Maintenance Activities

Figure 5: Floating work barge (photo: TBOC).

TBOC's planting, harvest and maintenance would primarily be carried out on its intertidal lease areas during low tides when the cultivation equipment is exposed and its personnel can walk among it. To move personnel, shellfish and equipment between its cultivation areas and onshore facilities, TBOC would make use of several outboard motor-powered skiffs. Maintenance activities on TBOC's lease areas include periodically flipping, shaking, inspecting and collecting cultivation equipment (bottom bags, floating longline or tipping bags) for sorting. This activity is carried out primarily using hand labor at low tides for intertidal equipment, and with the use of support vessels at higher tides for subtidal equipment such as floating longlines and the work barge. Harvested species are kept in the wet holding tank described above and cleaned on the pier prior to sale, which will be discussed further in the marine resources section.

TBOC's shellfish cultivation activities on lease M-430-05 are limited to two species: Pacific oyster (*Crassostrea Gigas)* and bay mussel (*Mytilus trossulus)*. TBOC's lease also includes cultivation of Kumamoto oyster (*Crassostrea sikamea*), Olympic oyster (*Ostrea lurida*), and Manila clam (*Venerupis philippinsrum*) but these species are not currently being grown.

Vessel Use and Transit Route

TBOC's current operations make use of three small boats to assist in planting and harvest operations. Vessels launch and land from TBOC's pier or at Marconi Cove and transit to the lease area: a trip of approximately two miles. TBOC estimates that these vessels make a minimum of 3-4 trips per week to conduct planting and harvest activities (**Exhibit 2**).

Collection and Removal of Aquaculture Debris
As part of its CDP application, TBOC is seeking after-the-fact authorization for its collection and removal of approximately 628 cubic yards of aquaculture structures and cultivation gear that was abandoned across approximately 24 acres of its state aquaculture lease by previous companies and operators. This material includes metal rebar cultivation structures, PVC posts, anchoring devices, mesh cultivation bags, ropes and lines, wooden and concrete posts and footings, as well as wire and plastic fasteners and other gear and materials associated with oyster cultivation. Removal of this material primarily involved the use of hand tools and labor but also relied on boats and other vessels to facilitate transport. Collected material was cleaned and repaired for future re-use or taken to appropriately certified onshore waste disposal facilities. TBOC is also proposing to continue this work through the collection and removal of approximately 70-cubic yards of remaining aquaculture gear debris using similar methods and the permanent abandonment of roughly 3.25-acres of bottom bag cultivation beds.

B. **OTHER AGENCY APPROVALS**

U.S. Army Corps of Engineers
U.S. Army Corps of Engineers (Corps) reviewed the project under Section 404 of the Clean Water Act of 1973 (33 U.S.C. Section 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403) and issued a Nationwide permit 48 for after-the-fact authorization of TBOC's existing operations. A new NWP would be considered in the event of proposed new development.

National Marine Fisheries Service
As part of the ACOE permit review process, consultation with the National Marine Fisheries Service (NMFS) was completed in 2019 to evaluate potential issues associated with Essential Fish Habitat and Protected Species. Commission staff also reached out to NMFS during the review of this application, who did not identify any subsequent issues with respect to species or habitat impact.

Greater Farallones National Marine Sanctuary
Tomales Bay is within the Greater Farallones National Marine Sanctuary and under management by the Office of National Marine Sanctuaries (ONMS). Commission staff reached out to the Sanctuary permitting division and confirmed that the proposed operations did not require a permit from the Sanctuary due to its location within state leased tidelands.

San Francisco Bay Regional Water Quality Control Board
Projects involving discharges of dredged or fill material to waters of the United States that require permits from the U.S. Army Corps of Engineers under Clean Water Act Section 404 are often also required to obtain authorization from the Regional Water Quality Control Board (RWQCB) under Clean Water Act Section 401. Commission staff provided opportunities for input and updates to RWQCB staff during its review of this

CDP application. RWQCB authorization is pending completion of Coastal Commission CDP approval.

California Fish and Game Commission
TBOC's operation is carried out within State Water Bottom Lease No. M-430-05. The lease was amended in 2022 to reflect accurate lease boundaries, clarify approved cultivation methods and add authorized species. The lease was authorized for a period of 25 years by the Fish and Game Commission, and unless renewed, will terminate on February 8, 2027. These leases establish the shellfish species and cultivation methods to be used by TBOC and require TBOC to obtain and adhere to permits and authorizations from all other relevant agencies. During the course of this permit review, Commission staff reached out to and solicited input from California Fish and Game Commission staff regarding the consistency of TBOC's current and proposed operations with its leases and the steps necessary to address discrepancies.

California Department of Fish and Wildlife
TBOC's aquaculture operations are required to be registered annually with the California Department of Fish and Wildlife (CDFW) and to adhere to a variety of protocols related to introduced species and the importation of oyster seed. TBOC has a consistent compliance record with these regulations and has a valid registration for 2022. Additionally, Commission staff engaged with CDFW representatives in the development of **Special Conditions 4 and 8.**

California Department of Public Health
The California Department of Public Health (CDPH) requires that firms that process, handle, and distribute shellfish obtain a Shellfish Handling and Marketing Certificate. CDPH issued an annual grow certificate (SGA22-036) in February 2022 which requires TBOC to adhere to various conditions including compliance with a management plan for commercial shell fishing in Tomales Bay, water quality sampling/monitoring plan, and *Vibrio parahaemolyticus* Control Plan.

Tribal Outreach and Consultations
During the process of reviewing TBOC's CDP application for this project and developing this recommendation, Commission staff reached out to representatives from Native American Tribes understood to have current and/or historic connections to the project area. These Tribes include the Federated Indians of Graton Rancheria and the Guidiville Indian Rancheria. Contact information for these Tribal Representatives was gathered from the Native American Heritage Commission's Native American Contact Lists, and an SLF search was returned with negative results. A request for consultation came from the Federated Indians of Graton Rancheria. Commission staff consulted with FIGR on July 27, 2022 via Zoom. During earlier review of this project by the USACE, consultation took place between the USACE and FIGR, which resulted in the inclusion of an inadvertent discovery protocol condition into the USACE permit. This has also been reflected through the inclusion of **Special Condition 9.** Any subsequent information received after the publication this report may be reflected in an addendum to the staff report.

C. **FILL OF OPEN COASTAL WATERS**

Section 30233(a) of the Coastal Act states, in part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
>
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
>
> *(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
>
> *(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
>
> *(6) Restoration purposes.*
>
> *(7) Nature study, aquaculture, or similar resource dependent activities.*

The installation and maintenance of shellfish cultivation equipment (including bottom bags, floating longline anchors, barge anchoring, support posts, and/or PVC supports) on intertidal and subtidal portions of Tomales Bay associated with the activities for which TBOC is requesting after-the-fact authorization constitute "fill" as defined by the Coastal Act. Section 30108.2 of the Coastal Act states:

> *"Fill" means earth or any other substance or material, including pilings placed for the purpose of erecting structures thereon, placed in a submerged area.*

Coastal Act Section 30233(a) permits fill in coastal waters if three tests are met: (1) the fill constitutes an allowable use under 30233(a); (2) there is no feasible less environmentally damaging alternative; and (3) feasible mitigation measures have been provided to minimize any adverse effects.

Allowable use
TBOC seeks after-the-fact authorization for fill in coastal waters for the purpose of cultivating oysters and anchoring a work and cultivation barge. As discussed above, TBOC's after-the-fact request is an aquaculture project, and as such qualifies as an "allowable use" under 30233(a)(7). The project is therefore consistent with the first test of Section 30233(a).

Alternatives
For the second test, the Commission must further find that there is no feasible less environmentally damaging alternative to the proposed placement of fill in estuarine waters. Coastal Act Section 30108 defines "feasible" as "…capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors." In previous aquaculture permitting actions, the Commission evaluated project alternatives that would reduce or eliminate the need for fill. Due to the force of tides and currents within TBOC's lease, the presence of shellfish predators, as well as the design of the structures and gear associated with the cultivation methods and activities employed by TBOC, a system of anchoring and support posts, anchors, bottom bags and other cultivation gear are essential elements. For on-bottom cultivation, use of mesh bags allows the shellfish being grown to remain contained and consolidated during grow-out so they may be fully recovered at harvest with minimal habitat disturbance (particularly in comparison to unconsolidated placement of oysters or clams directly on the substrate, which can significantly alter the substrate and require mechanical or hydraulic dredging techniques to harvest). On-bottom culture can have the benefit of improved sightlines for foraging wildlife during certain tides, although placement directly on the bottom can limit growth opportunity for other marine species, such as eelgrass.

The Commission has previously considered several alternative anchoring and post systems to those proposed by TBOC for its floating longline, bottom bag, and tipping bags including different types of posts and stakes and different post spacing configurations. While a wider spacing of support posts would be possible, to maintain the oyster cultivation equipment above the substrate and within the target area of tidal influence would result in high levels of tension and weight on the horizontal lines and would therefore require larger posts, more substantial support cables, and/or anchoring systems on each end of the lines. These larger, more permanent structures would require more substantial installation methods, including the possible need for mechanized equipment (such as powered augers, water jets, or pile drivers). This would likely result in the installation of fewer larger structures rather than more numerous smaller structures, thereby not likely reducing the overall amount of fill required. Floating bag techniques have the benefit of allowing species movement underneath, particularly during high tides, but may have the negative effect of increasing shading, which could hinder grown of eelgrass. Further, the larger structures would be more difficult to remove or adjust in the future and may require more intensive extraction methods, thus increasing the amount and severity of habitat disturbance that would occur during these activities. Ultimately, while there are benefits and potential

drawbacks of each type of cultivation, eliminating fill is not a feasible alternative for this type of shellfish culture operation.

Alternative anchoring methods for the types of tipping bags, floating longlines, and barge that TBOC proposes have also considered in previous aquaculture permits. TBOC's proposed method of mooring these structures in place relies on the use of helical-type anchors or concrete blocks deployed into the substrate to keep the barge and other cultivation equipment in place. Compared to other anchoring types, helical type anchors have the smallest disturbance footprint and function as permanent moorings.

The Commission therefore finds that the proposed type of fill is the least environmentally damaging feasible alternative and is therefore consistent with the second test of Section 30233(a).

Mitigation Measures
The final test of Coastal Act Section 30233(a) requires that feasible mitigation measures have been provided to minimize any adverse effects of the proposed fill.

As discussed in the Marine Resources section below, TBOC's placement and use of shellfish cultivation equipment in coastal waters has the potential to result in adverse impacts to water quality, marine habitats, and wildlife. Specifically, it may result in the accidental spill of hazardous materials such as fuel and hydraulic fluid, the loss and damage of eelgrass habitat due to the presence of cultivation gear and its planting, harvest and maintenance and the disturbance or injury of marine wildlife due to vessel operations and the inadvertent release of plastic marine debris. To address these potential adverse impacts to help ensure they are avoided, minimized and mitigated, **Special Conditions 2, 3, 4, 6 and 8** would memorialize TBOC's commitments to continue and complete its removal of abandoned aquaculture equipment from within and adjacent to its lease area; limit the potential loss and dispersal of cultivation gear by requiring that all bottom bags in use by TBOC be placed within designated areas and tethered to anchor lines, elevated lines or racks; require TBOC to adhere to wildlife disturbance measures and mapped transit corridors that would limit the loss and disturbance of eelgrass habitat due to prop-cutting or interactions with outboard motors; and create a variety of marine debris prevention and response protocols that would reduce the likelihood of debris loss and increase opportunities for its recovery. These conditions would further prohibit any proposed expansion into mapped eelgrass habitat and require inspections for herring eggs in eelgrass during the spawning season. Additionally, **Special Condition 7** would address potential adverse impacts to marine wildlife through the implementation of a hazardous materials spill prevention and response plan, which requires identification of spill sources and quantities as well as personnel training on spill response measures. Finally, **Special Condition 10** would prevent the spread of biofouling or invasive species by requiring that cleaning of harvested species take place on shore with disposal of material at an appropriate upland facility within 24 months of permit issuance.

The Commission finds that with the addition of these special conditions, feasible mitigation measures have been provided to minimize any adverse effects of fill, and, therefore, that the third and final test of Coastal Act Section 30233(a) has been met.

Conclusion
Because the three tests have been met, the Commission finds the proposed project, as conditioned, is consistent with Section 30233(a) of the Coastal Act.

D. MARINE RESOURCES

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The proposed project is located on and adjacent to an area of intertidal mudflats and subtidal land leased from the State of California within the southern portion of Tomales Bay (**Exhibit 1**). The lease area (state water bottom lease no. M-430-05) covers roughly 160 acres and was issued to TBOC by the Fish and Game Commission. Within this area, TBOC is seeking after-the-fact authorization for shellfish cleaning, processing and storage on an existing pier structure, the associated use of a submerged seawater intake system, the installation and use of oyster and mussel cultivation structures and equipment on approximately 33 acres, the collection and removal of approximately 628 cubic yards (spread out over 24 acres) of abandoned aquaculture materials including rope, iron racks, cultivation bags, hardware and PVC posts and is proposing the further collection and removal of an additional 70 cubic yards of equipment and materials – including through the abandonment of approximately 3.25 acres of existing bottom bag cultivation beds. .

These after-the-fact and proposed activities have the potential to cause adverse impacts to benthic habitat and eelgrass, marine wildlife including shorebirds, the productivity of coastal waters and water quality.

Benthic Habitat and Eelgrass
Tomales Bay provides extensive eelgrass habitat with nearly a thousand acres spread throughout the bay - mostly within depths of about six feet of average daily low tides. An eelgrass survey carried out in 2020 by Merkel & Associates shows extensive eelgrass beds throughout TBOC's lease area, including within and surrounding the cultivation beds and equipment for which it is proposing to continue operating and seeking after-the-fact authorization for installation and use of floating longlines, tipping bags, bottom culture gear, and hanging mussel equipment (as shown in **Exhibit 3**).

In addition to eelgrass, TBOC's lease site includes intertidal and subtidal areas comprised of various types of mud- and sand-flats, and channels.

Potential adverse impacts to benthic habitats from the proposed project include: (1) loss of eelgrass habitat due to shading and displacement from the installation and presence of cultivation structures and/or disturbance and damage due to their use; (2) smothering of organisms and loss or disturbance of mudflat habitat due to the presence of bottom bags, racks, anchors, support posts, and mesh nets; and (3) disturbance to sediments and organisms from installation of anchoring and support posts associated with tipping bag lines or floating longlines; removal activities; and ongoing operations (planting and harvest of oysters and mussels and equipment maintenance).

Eelgrass
Eelgrass beds are globally recognized as rare and critically important marine habitats and are designated for protection by the National Marine Fisheries Service and Pacific Fisheries Management Council as Essential Fish Habitat and Habitat Areas of Particular Concern. Additionally, eelgrass is a species of special biological significance under the meaning of Section 30230 of the Coastal Act, and the Commission has consistently determined it warrants special protection under this policy. Eelgrass (*Zostera marina*) provides a variety of essential ecosystem functions, including primary production, predation refuge, nursery functions, physical structure, nutrient cycling, carbon sequestration, buffer against ocean acidification and forage. Eelgrass presence has been well-documented within Tomales Bay (CDFW 1992; Merkel and Associates 2017) and within state water bottom lease number M-430-05. Most recently, the results of a 2020 eelgrass survey showed that eelgrass beds cover a substantial portion of this lease (as shown in **Exhibit 3**) and extend into all of the existing cultivation beds shown in **Exhibit 4**. The majority of these areas were recently approved for continued shellfish cultivation use after-the-fact by the California Fish and Game Commission and California Department of Fish and Wildlife despite the presence of eelgrass within them.

TBOC has consistently stated that this overlap between its cultivation beds and eelgrass habitat is a new phenomenon and that its bottom bag cultivation areas and other cultivation beds were installed and initially brought into use prior to the presence

of eelgrass habitat within them. TBOC's position is that the eelgrass habitat currently present throughout its lease area and cultivation beds appeared only in recent years, subsequent to its installation of the existing oyster cultivation beds and equipment and that the presence of its oysters has facilitated expansion of the eelgrass habitat. No definitive or objective documentation of the cultivation gear predating the eelgrass habitat is available, however, and the factors contributing to its presence would take significant research to conclusively determine. Compared to those completed in 2020, eelgrass surveys carried out in the 1980s and more recently in 2017 do provide some support for TBOC's position that the amount of eelgrass within its lease has expanded in the past several years. Unfortunately, these prior year eelgrass surveys – in particular, those from past decades – were focused on providing a general assessment of eelgrass habitat across the entirety of Tomales Bay and were not carried out with sufficient resolution and documentation of the type and location of cultivation gear on TBOC's lease to allow the effects (positive or negative) of TBOC's operations on eelgrass to be determined and quantified. The absence and lower density of eelgrass below and immediately surrounding TBOC's cultivation gear provides an indication that at least some types of gear and cultivation activities are not compatible with eelgrass and either result in its loss or prevent its further expansion.

Despite this, TBOC has conveyed to Commission staff its strong belief that some aspects of its cultivation operations may benefit eelgrass habitat and promote the establishment or expansion of eelgrass beds into cultivation areas. As noted in the Commission's findings for CDP Amendment Nos. 2-81-40-A1; 2-84-2-A1; 2-84-10-A1 and 1-94-55-A1, "Although these effects have not been well established scientifically, the interaction between shellfish cultivation and eelgrass can often be complex and site specific and include both positive and negative components." Therefore, if some of TBOC's cultivation activities in some areas are indeed able to contribute to the establishment or expansion of eelgrass habitat in those areas, it may be prudent to allow those activities to continue. Accordingly, **Special Condition 2** would establish that TBOC's approximately 33 acres of existing cultivation beds not proposed to be removed may continue to be used with the types of cultivation gear currently in place even if the location and/or size of nearby eelgrass beds shift in the future to further encompass some or all of them. Changes to those types of cultivation gear would require an amendment to the CDP unless the Executive Director determines that no such amendment is necessary. **Special Condition 2** would also require TBOC to seek a permit amendment for expansion or establishment of new cultivation beds and prohibit installation of new shellfish cultivation equipment and materials on, in, or over eelgrass habitat outside of the approximately 33 acres of cultivation beds shown in **Exhibit 3** and not proposed for removal. This approach would protect eelgrass habitat from the potential adverse impacts associated with the installation and use of cultivation beds in portions of TBOC's lease that do not currently support shellfish aquaculture structures and equipment.

Those adverse impacts include physical displacement by the "footprint" of the cultivation structures and gear on intertidal and subtidal substrate and damage or disturbance due to staging and access by vessel and foot during maintenance, planting and harvest

activities. Given the abundance of eelgrass surrounding TBOC's cultivation beds such impacts are likely to occur on an ongoing basis as these areas continue to be used. To help address these adverse impacts and in recognition that objective supporting information for TBOC's position that its existing cultivation equipment was installed prior to the presence of eelgrass habitat in its cultivation beds, TBOC has been engaged in a multi-year effort to clean its lease of abandoned structures and equipment left behind by past operators. This effort goes beyond the quarterly general shoreline cleanups TBOC has also carried out for many years that, to date, have resulted in the removal of approximately 628 cubic yards of wood, metal, plastic, and PVC cultivation structures and gear from across roughly 26 acres of shoreline and eelgrass habitat within its lease. As part of its request to the Commission for after-the-fact and ongoing authorization for use of approximately 33 acres of cultivation beds within its lease, TBOC is proposing to continue and expand this effort to include an additional approximately 70-cubic yards of remaining aquaculture gear debris and to permanently abandon 3.25-acres of bottom bag cultivation beds. This proposal would be memorialized through **Special Condition 3** and required to be completed within 24 months. The combined result of this effort would be the removal of several tons of marine debris (nearly 700-cubic yards) across over 29 acres of eelgrass habitat, thus facilitating its health and further expansion. In addition, removal of this marine debris would result in significant benefits to other types of benthic habitat and marine wildlife by removing a source of potential disturbance, injury and entanglement.

As a result of **Special Condition 3** and TBOC's past and ongoing marine debris and abandoned aquaculture equipment removal efforts, its proposed operation would not be inconsistent with the Coastal Act requirement for eelgrass habitat to be provided with special protection as an area of special biological significance.

Smothering and Disturbance
The elements of TBOC's proposed after-the-fact development that would primarily result in smothering and disturbance of benthic habitat are (1) the presence of the PVC anchoring stakes, anchors and support posts for oyster cultivation equipment (floating longlines, bottom bag lines and tipping lines); and (2) the presence of bottom bag cultivation gear.

TBOC's application includes a request for after-the-fact authorization for placement of PVC post supports and anchoring systems for tipping bags, floating longlines, and bottom bag lines on lease M-430-05. The placement and maintenance of several dozen anchors and several hundred small-diameter PVC stakes and posts associated with TBOC's use of these cultivation methods on its lease is expected to result in the long-term displacement and loss of up to several dozen square feet of benthic habitat known to support marine invertebrate communities and foraging habitat for shorebirds and marine wildlife.

In addition, this activity would result in the short-term disturbance of mudflat areas adjacent to each stake due to the foot traffic and trampling associated with its installation.

However, the lost and displaced habitat from the stakes and anchors would be spread across numerous individual sites – each with an area of between one and three square inches for the stakes and one to three square feet for the anchors – and would therefore be insignificant. Additionally, in the context of TBOC's lease area and Tomales Bay as a whole, the loss of this area of mudflat habitat and short-term disturbance of adjacent areas due to foot traffic and trampling is not anticipated to adversely affect the biological productivity of the bay or measurably reduce populations of the marine organisms that inhabit and rely on this habitat. Habitat mapping and aerial surveys of Tomales Bay have shown that benthic habitat comprised of fine sand and silt sediment similar to the habitat present at the project sites is extensive (covering hundreds of acres) and many of these areas support similar species and populations of marine life. Given the small size of the benthic footprint and associated disturbance areas relative to the abundance of similar benthic habitat in Tomales Bay, as well as the dispersion of this footprint over several hundred very small individual sites, adverse impacts associated with the installation and presence of the system of PVC support and anchoring posts and stakes associated with the shellfish cultivation gear for which TBOC is requesting after-the-fact approval would be minimal.

Other elements of the unpermitted cultivation gear TBOC has installed would also involve the placement of fill on benthic habitat. For example, the placement and use for oyster culture of approximately 5,000 (roughly six-square foot) bottom bags on lease M-430-05 would result in the smothering and disturbance of benthic habitat. The total area to be covered by these bags would be just under three quarters of an acre spread across several dozen rows of bags, each between 200-400-feet long and three-feet wide. As discussed in a variety of studies and previous Commission aquaculture reviews, use of mudflats in this way may affect it in several ways, including by altering the chemical condition of the sediment and influencing the type, abundance, and diversity of species it supports. These effects result from sedimentation and organic enrichment caused by the oysters, as well as predator exclusion and current dampening from the presence of the aquaculture equipment on the surface of the mudflats.

Because the feeding activity of bivalve filter-feeders such as oysters results in the packaging of fine suspended material into larger feces that can rapidly settle to the seabed (especially under conditions with slow or poor water flushing and exchange) in areas of intensive shellfish cultivation, primary production and energy flow can be diverted from planktonic to benthic food webs. While the dynamics of bivalve feces deposition (settling velocity, disaggregation rate and resuspension) are poorly understood, enhanced sedimentation under areas of cultured shellfish is well documented (Castel et al. 1989; Mojica and Nelson 1993; Nugues et al. 1996; Spencer et al. 1996; Drake and Arias 1997; Spencer et al. 1997; Spencer et al. 1998; De Grave et al. 2001; Kaiser 2001; Crawford et al. 2003; Forrest and Creese 2006; Mitchell 2006; Bouchet and Sauriau 2008). As is the case for finfish aquaculture, the accumulation of organic material beneath shellfish aquaculture facilities may result in the generation of an anaerobic environment that promotes ammonification and sulfate reduction, increased sediment bacterial abundance, and changes in benthic community structure

and biomass. This accumulation is of concern due to the sorting and cleaning of oysters that is done on the pier prior to commercial sale. The oysters and bags or baskets are often covered in fouling organisms, including non-native and potentially invasive species such as algae and tunicates. When shellfish are being washed, sorted and cleaned on the pier, these biofouling organisms are currently being deposited directly into Tomales Bay. As previously described, invasive algae and invertebrate species can spread and reproduce through fragmentation so the discharge of those fragments can promote and even expedite the expansion of invasive species. As such, **Special Condition 10** will require that within 24 months, cleaning and sorting take place onshore and be disposed of at an appropriate upland facility.

The magnitude and extent of these effects is strongly influenced by several factors, including stocking density (the number of oysters within the cultivation gear), current speed, coverage area (the total amount of contiguous area occupied by cultivation gear), coverage duration (length of time cultivation gear is in place before being moved) and fallowing frequency. In general, studies suggest that cultivation at low densities in areas with strong currents and with more separation between cultivation equipment, more frequent shifting of equipment and use of fallowing (rest periods between uses of an area) is likely to result in less substantial and more localized effects. In contrast, high density, long-term, extensive, fixed cultivation in more enclosed areas is likely to exacerbate environmental effects and lead to more severe disturbance to benthic habitat and communities. However, as a series of studies by Spencer et al. (1996, 1997, 1998) demonstrate, some benthic communities can be resilient to these types of disturbances and can return to reference conditions within months of an aquaculture harvest and removal of aquaculture equipment, even after significant changes have taken place.

Although the total area (9.6-acres historically) that has been used for oyster bottom cultivation by TBOC within M-430-05 is not insignificant, the modest stocking density used for its cultivation bags (typically less than 200 oysters per bag), and the configuration of its longlines in rows with gaps of four to five feet between them would limit the amount and extent of disturbance to benthic habitat that would result from the proposed operation.

In addition, TBOC's operational practices provide opportunities for periodic recovery to occur within the benthic habitat of its cultivation areas. For example, as oysters grow, TBOC staff routinely shift, flip, and relocate cultivation bottom bags - thus exposing previously covered areas of substrate. This is done every two weeks on average. Also, because the longlines are anchored in place only at the two ends (between 200 and 400-feet apart), current and wave action during the intervening period is also responsible for moving and shifting the bags along the longline rows. This movement of bags, both natural and intentional, should minimize the magnitude of any effects that the cultivation gear and oysters may be having on the benthic habitat and its associated species by distributing those effects across the cultivation area.

Although specific testing and detailed analysis of the benthic habitat has not been carried out within the lease areas that are being (or have been) used for bottom bags, available information from research carried out in other areas suggests that the effects to benthic habitat from this aspect of TBOC's oyster cultivation operation would be - at most - modest, localized and not likely to persist once the area is left fallow or returned to a natural condition.

Next, it is important to consider that while the use of posts or racks to elevate more of the bottom bags off of the mudflats would reduce the amount of direct bottom contact, the environmental benefits of such efforts are not clear. These types of elevated alternatives may facilitate access to the mudflats for foraging wildlife such as fish, bat rays, and shorebirds when compared to the use and placement of mesh bottom bags directly on the substrate, but even this is not certain. Some species of birds have been shown to largely avoid elevated structures, and the interaction of other species of birds and marine animals with them has yet to be carefully evaluated. As such, it cannot be stated with confidence that the use of elevated gear in place of on-bottom gear would significantly increase foraging activity or opportunities. Additionally, a greater number of more robust, elevated structures may have shading effects and affect currents, hydrology, and sediment transport/deposition in ways that bottom bags do not. Other effects are likely to be similar between the gear types. As previously oyster feeding and the deposition of organic material onto the underlying substrate is likely to occur at similar rates between the two cultivation methods. While elevated gear in some locations may facilitate flushing, water movement, and dilution of organic materials, in other locations, the more substantial and robust gear in the water column associated with elevated gear may alter current speeds and directions in ways that would concentrate organic wastes.

Nevertheless, in order to help compensate for the adverse impacts to marine resources associated with TBOC's past and continuing use of this cultivation method, it has committed to reduce the total area of its bottom bag cultivation beds from approximately 9.6 acres to 6.4 acres, to continue carrying out quarterly shoreline cleanups throughout Tomales Bay in coordination with the other shellfish growers (as memorialized through **Special Condition 3**) and to remove an additional 70 cubic yards of abandoned shellfish cultivation debris from across several acres. This would be in addition to the approximately 628 cubic yards of shellfish cultivation debris TBOC has already collected and removed from within over 20 acres of its lease over the past several years. These efforts of TBOC and its staff have benefitted and will continue to benefit the coastal and marine biological resources of Tomales Bay.

As such, the removal of this debris and reduction in bottom bag cultivation beds from Tomales Bay would open an area of intertidal and subtidal habitat that has been occupied by fill for many years (dating back to prior ownership and management of TBOC's lease area) and would help prevent additional habitat disturbance and displacement in the future as the materials inevitably break apart and disperse further. **Special Conditions 3** and **6** would memorialize several of these ongoing removal commitments by requiring TBOC to complete its removal of abandoned aquaculture

structures within 24 months of permit issuance and continue its quarterly clean-up efforts.

Benthic Disturbance from Operations
Movement of personnel and equipment to TBOC's various cultivation beds, as well as maintenance and use of the aquaculture structures, also have the potential to result in disturbance of benthic habitats and eelgrass. This disturbance would be most likely to occur during the transit of project vessels and personnel to and from the cultivation sites, the staging of equipment and supplies for periodic repair and replacement of cultivation structures, and operations on the mudflats such as planting, harvest, and maintenance activities. These activities would be carried out during a range of high and low tides and would involve the landing of one or more small project vessels on the mudflats near the cultivation areas, the loading or offloading of equipment and shellfish, and the movement of project personnel by foot among the bottom bags, floating longlines, tipping lines, or other aquaculture sites.

TBOC's cultivation areas on M-430-05 are configured to include open areas between cultivation structures in order to provide access. The minimum amount of open area varies based on the cultivation method in use, and each line or row of tethered bottom bags, tipping lines, and floating longlines are separated from adjacent lines by at least several feet to allow access along its length. Mooring of project vessels, offloading of equipment, and movement of TBOC's employees among these access routes would result in the disturbance, crushing, and damage to benthic habitats and species.

To address the potential adverse impacts to marine biological resources and species of special biological significance, such as eelgrass, associated with this amount of disturbance to benthic habitats, TBOC typically uses consistent vessel access routes (**Exhibit 2**) when coming and going from its cultivation areas and makes use of its floating work platform to temporarily stage equipment in consolidated, secure areas away from benthic habitats. Because eelgrass habitat is present within and adjacent to TBOC's leases, its use of a consistent route limits the amount of eelgrass habitat that its vessels pass through. Because the use of outboard motors through eelgrass habitat at some tidal heights can cause the eelgrass to be cut or uprooted, limiting vessel transit to a single area would protect eelgrass in other surrounding areas.

To memorialize this aspect of TBOC's operations to establish consistent vessel and personnel transit routes that avoid and minimize disturbance to sensitive habitat areas such as eelgrass beds and marine mammal haul-outs, the Commission is requiring in **Special Condition 4** that TBOC continue to implement and adhere to the vessel routes included in its application (provided in **Exhibit 2**).

Additionally, to prevent benthic disturbance associated with the onsite storage/staging of materials on the lease area – and the potential loss or displacement of equipment into surrounding habitat areas due to current and tidal action - **Special Condition 6** would prohibit the staging and storage of equipment, tools, and materials on TBOC's cultivation site (with the exception of materials securely stored on floating work

platforms) and require that TBOC implement a variety of measures to avoid and address the accidental loss and displacement of cultivation gear and equipment. Such measures would include regular maintenance inspections during harvest to identify and correct worn or weathered gear at risk of breaking or escaping; clean-up events to recover materials that are accidentally lost; staff training to ensure best management practices are understood and used; and gear marking to help prevent loss and facilitate recovery. Further, **Special Condition 2** also requires that TBOC avoid placement of new gear, structures, or equipment on or directly adjacent to areas occupied with eelgrass and to seek an amendment to this CDP for any expansion or installation of new cultivation beds. The installation and use of cultivation equipment within existing cultivation beds would concentrate TBOC's activities within those portions of its lease area that are already periodically disturbed by ongoing aquaculture activities and that do not appear to have historically supported eelgrass habitat.

Wildlife Disturbance

Tomales Bay is protected as part of the Greater Farallones National Marine Sanctuary and recognized by the intergovernmental Ramsar Convention as a "Wetland of International Importance." In addition to supporting a range of rare and sensitive habitat types, it is also home to an abundance of large and small wildlife from harbor seals and sea lions to well over 100 species of resident and migratory birds. TBOC's proposed operation has the potential to negatively affect a number of these species through disturbance and interference with natural behavior such as foraging and resting.

Marine Mammals

Several of the intertidal mudflat and shoreline areas of Tomales Bay are used as haul-out and resting sites by the bay's resident population of harbor seals. However, none are known to be located within TBOC's lease. TBOC's vessel routes do not come in close proximity to either Hog Island, Duck Island or Pelican Point (which are known marine mammal use areas)[4] and therefore provide a buffer that extends much farther than the 150-foot minimum buffer distance recommended by the National Marine Fisheries Service. However, both harbor seals and California sea lions have been observed throughout the waters of Tomales Bay and may be encountered there at any time. Additionally, whale species including the California gray whale may be occasionally present within Tomales Bay.

To ensure these species and their critical use areas are appropriately protected, **Special Condition 4** would require TBOC to avoid chasing, flushing, or directly disturbing marine mammals during vessel transit, harvest, maintenance or inspection activities. Additionally, **Special Conditions 3** and **6** would help minimize the loss of aquaculture materials from TBOC's operations and contribute to the removal of plastic debris materials from the bay that may present an injury risk to marine mammals from entanglement or ingestion. Primary impacts to fish species would likely be temporary as a result of operational activities, however, it is likely that any fish present in the project area would return following the completion of work.

[4] F14a-2-2019-exhibits.pdf (ca.gov)

Fish
In its concurrence letter, staff of the National Marine Fisheries Service identified that the following special status fish species may be present in the project area: Central Coast salmon (*Oncorhunchus kisutch)* Evolutionary Significant Unit, Central Coast steelhead (*Oncorhynchus mykiss)* Distinct Population Segment, North American green sturgeon (*Acipenser medirostris*) Distinct Population Segment. Lagunitas, Olema and Walker creeks are the major tributaries to Tomales Bay and support populations of these species: they must pass through the bay and past TBOC's lease area to spawn as adults or to enter the ocean as juveniles. Migrations generally take place in winter and spring months.

In addition to the species described above, Tomales Bay is an important habitat for Pacific herring (*Clupea pallasii*). Pacific herring is a small pelagic fish and although it is not a special status species, it is considered an important fishery in California. Herring is known to use eelgrass as spawning habitat and to forage and refuge within it as juvenile fish. Given the prevalence of eelgrass within the lease area, and the potential disturbance associated with planting, harvesting and maintenance activities, **Special Condition 8** requires TBOC to inspect for the presence of eggs/larvae during the spawning season and to work with staff of the California Department of Fish and Wildlife to temporarily avoid these areas in order to minimize impacts to the species.

Shorebirds, Seabirds and Waterfowl
The mudflats and intertidal areas of Tomales are widely regarded as critically important foraging habitat for a wide range of resident and migratory seabirds, shorebirds, and waterfowl such as black brant, least tern, dunlin, and several species of plover and sandpiper. Although Tomales Bay also contains extensive mudflat areas outside of TBOC's lease, the intertidal habitat within it is known to support shorebird foraging. To help ensure that this foraging activity continues in these areas and disturbance from TBOC's operations are minimized, **Special Condition 4** would require TBOC to avoid approaching, chasing, flushing, or directly disturbing shorebirds, waterfowl, seabirds during vessel transit, harvest, maintenance, inspection, and planting operations. In addition, the requirements in **Special Condition 3** would also benefit shorebird and waterfowl foraging within the lease, specifically, by requiring the removal of the approximately 70 cubic yards of remaining shellfish cultivation debris left behind across approximately 5 acres by previous operations. Once this material is fully removed, access to foraging within these mudflat areas would be improved.

Marine Debris
The shellfish cultivation operations for which TBOC requests continuing and after-the-fact authorization include the placement and maintenance of several hundred thousand individual pieces of plastic and PVC in Tomales Bay. This material is associated with the several thousand linear feet of nylon rope that are used for bottom bag longlines; the tens of thousands of PVC posts used to support the floating longline bags (with flotation tubes) and elevated tipping bags and lines/longlines (spaced every 7 feet along the bay: each bag has a 30-inch long, 3-inch diameter flotation tube) and to anchor the

bottom bag lines. As has been well documented in parts of Tomales Bay and Humboldt Bay near shellfish aquaculture operations, some of this material can disperse into the environment as debris – either due to inadequate maintenance and inspection operations or challenging oceanographic conditions (currents, tides, and wave action).

Since 2015, TBOC has removed a significant amount of legacy gear and marine debris from locations on its lease as well as elsewhere in Tomales Bay (for example, TBOC has removed approximately 628 cubic yards of aquaculture debris from its lease and worked with Starbird Mariculture to assist in gear removal in 2019 following the termination of a sublease on state water bottom lease no. M-430-04A). Further, TBOC has a strong record of promptly responding to requests for collection and removal of lost and abandoned gear on its leases and surrounding areas. However, information submitted to Commission staff over the past several years also indicates that loss of cultivation gear and marine debris remains an unresolved issue in Tomales Bay. The use of common gear types, such as similarly designed bottom bags, and the lack of identifying marks or tags on some of it (namely associated with operations that either do not have CDPs or were issued CDPs many years ago) also makes it difficult to determine which operations within Tomales Bay contribute the most and least to this issue. Cultivation equipment, bottom bags and cultivation baskets in particular, have been recovered throughout Tomales Bay and from open coastal beaches in the surrounding region. This equipment has been found smothering eelgrass habitat, buried in mudflats, and dispersed among tidal salt marshes. The durability of the HDPE plastics used for much of the common cultivation equipment means that if it escapes, it can persist in the environment for many decades.

Even once it degrades, plastic in the ocean is increasingly understood to pose a threat to a wide range of marine organisms as it slowly breaks into smaller and smaller pieces over time. At each step in this process, plastic debris can be ingested by, entrap, or entangle marine wildlife, from whales, dolphins, and seals down to sea turtles, seabirds, and fish.

To address the potential ongoing and future release and distribution of marine debris resulting from TBOC's shellfish cultivation operations, the Commission is requiring in **Special Condition 6** that TBOC implement or continue a variety of best practices, including those focused on inspections following storm events; debris reduction trainings for field employees; quarterly cleanup events; gear marking; field storage of tools and construction materials; and comprehensive debris cleaning and removal activities carried out on each bed at the time of its harvest. **Special Condition 6** also requires that TBOC focus on those areas identified in **Exhibit 5** as areas of persistent marine debris accumulation for focus of clean-up efforts. Although TBOC currently carries out a number of these practices voluntarily on its lease, memorializing these practices through operational requirements would help further ensure that they continue in the future. These requirements would reduce the long-term accumulation of debris within cultivation beds (such as the several tons that were present within lease M-430-05 when TBOC's current management team began), prevent debris generation and loss, and promote recovery of materials lost due to storm action or other unavoidable

causes. To further limit potential loss of the most common type of aquaculture debris found in Tomales Bay – bottom bags – **Special Condition 6** would require all bottom bags within TBOC's operation to be affixed to anchoring lines, racks, elevated longlines, or floating longlines when in use. TBOC currently operates consistent with this requirement.

An additional source of aquaculture-related marine debris in Tomales Bay and several other areas with long histories of shellfish cultivation is gear associated with businesses that have ceased operations and left behind large quantities of equipment, cultivation structures, and gear within intertidal or subtidal lease areas. This is the source of a substantial portion of the 628 cubic yards of aquaculture debris that TBOC has collected and removed from its lease over the past several years. To address this issue and help ensure that funding is available to carry out clean-up of abandoned operations, the California Fish and Game Commission requires – as part of its leasing of state tidelands – that the lessees deposit funds into escrow accounts so that funding is available to be used in the event that an operation ceases prior to recovering and fully removing its equipment. TBOC has contributed funding to the escrow accounts consistent with this requirement. However, the funds deposited into these accounts have often been based on only rough approximations of clean-up, removal, and disposal costs that do not include an accurate or transparent accounting showing how they were estimated. As such, the funds in the escrow accounts for many aquaculture leases do not appear sufficient to cover actual clean-up costs. While staff of the California Fish and Game Commission and California Department of Fish and Game are working to address this issue, some lessees in Tomales Bay have taken steps to proactively develop and document more accurate clean-up cost estimates or simply to augment the funds in the escrow accounts for their leases. The availability of these funds - in combination with the requirement in **Special Condition 1** that TBOC seek a permit amendment to remove its cultivation equipment from the bay prior to the expiration of its permit and cessation of its operations – would help ensure that TBOC's existing and proposed cultivation equipment is ultimately removed from the bay and does not become marine debris. In other words, these measures would help prevent any subsequent holder of TBOC's lease areas from encountering the same type of debris nuisance that TBOC inherited on its lease M-430-05 and has committed to finish addressing (as memorialized through **Special Condition 3**)**.**

Shellfish Species

Although TBOC's lease authorizes cultivation of several species of shellfish, its proposed operations would be limited to two species, Pacific Oysters (*Crassostrea gigas)* and Bay Mussels (*Mytilus trossulus*). Both species are cultivated extensively on other leases in Tomales Bay and are included in CDPs issued to other operators. The addition or proposed cultivation of new species would require amendments to TBOC's lease and CDP.

Productivity of Coastal Waters

Productivity of coastal and marine waters such as those present in Tomales Bay at the site of the proposed project, have the potential to be adversely impacted through the

use of seawater intake systems such as the one at this site which is used for shellfish cleaning, processing and storage. Coastal and marine waters may also be negatively impacted by the release and spread of invasive marine species during removal of biofouling materials from shellfish and cultivation gear during the proposed processing and cleaning activities that would be carried out on TBOC's pier facility. The following section describe the intake system currently in use by TBOC and the release and spread of invasive species that may occur as a result of TBOCs current practices.

Intake System
The intake system currently in use by TBOC is located adjacent to the floating work barge, several hundred feet into Tomales Bay. The actual intake is encased in a 4 foot-wide, 8 foot long, 12 inch deep fiberglass tub filled with gravel as a filter and incased in a .25 inch mesh screen (**Exhibit 6**). According to the previous owners of the site, installation of the intake system was done by hand, and the 4 inch PVC pipe that transports seawater to the pier is anchored to the bay bottom using wooden stakes, helix anchors, and a pipe strap. The intake system has an average daily intake of approximately 190 gallons (70,000 gal/year).

Intake and removal of seawater, particularly from coastal embayments and estuaries like Tomales Bay can adversely affect marine wildlife, including species of particular ecological and economic importance such as herring and salmonids, and sensitive habitats due to the entrainment and impingement of early fish life stages such as eggs, larvae and juveniles. As previously discussed, the lease area contains a significant amount of eelgrass, which provides critical feeding, breeding, or foraging habitat for numerous marine species, which could be diminished through the continual draw of water in the area. However, the longevity of the intake, likely combined with the presence of screens, has not demonstrated negative impact to the surrounding waters or wildlife throughout previous decades. The volume of water currently being removed is extremely minimal in comparison to other intake systems that the Commission has considered. Because the system does not rely on an open pipe but rather occurs through a filtration system that is designed and sized to help ensure flow-through velocities are minimized below the swimming speeds of early life stages of key special status species, the system has minimal to no impacts on marine life. Any modification to the intake system would require a separate permit amendment.

Release and Spread of Invasive Species
TBOC currently conducts its cleaning and processing operations on the pier facilities adjacent to the lease. As proposed, the operations currently have the removal biofouling and debris from shellfish species prior to commercial sale, and the debris washed directly into Tomales Bay from the pier. However, this is a potentially negative impact as shellfish species in Tomales Bay and elsewhere often contain growth of other invertebrates or tunicates that can be spread easily through fragmentation (which would likely occur during the cleaning process) and thereby spread biofouling materials into the Tomales Bay ecosystem. In order to address this, **Special Condition 10** requires that cleaning and processing of shellfish species be conducted onshore to eliminate

discharge into the bay and disposed of at an appropriate upland facility within 24 months of permit issuance.

Marine Water Quality
Productivity of coastal waters can also be negatively impacted through the use of vessels and equipment that rely on hazardous materials such as fuel or oils that could result in the accidental release of materials into the bay. TBOC currently uses several outboard motor skiffs to access its cultivation sites, either from the pier or from nearby boat launches. While TBOC reports that they do not conduct in-water fueling or maintenance of vessels, the accidental release of these materials during operations could kill, damage, or negatively impact the health of marine mammals, fish, shorebirds or other species. Additionally, TBOC reports that motor vehicles are sometimes used in support of operational activities by operating on tidal areas. In order to address these negative or potential negative impacts to water quality, **Special Condition 4** requires that vehicles remain outside of inter and subtidal areas in the course of their regular operations, and **Special Condition 7** requires that TBOC implement a hazardous materials spill prevention and response plan in order to identify sources of potential spills and to train personnel on proper response to accidental releases into the marine environment.

Conclusion
Although the Commission finds that the project has the potential to adversely impact marine resources and the biological productivity of coastal waters, with implementation of **Special Conditions 1** through **11**, the project would be carried out in a manner in which marine resources are maintained, species of special biological significance are given special protection, the biological productivity of coastal waters is sustained, and healthy populations of all species of marine organisms will be maintained. In addition, the proposed project, as conditioned, is expected to maintain the biological productivity of coastal waters appropriate to maintain optimum populations of marine organisms. The Commission therefore finds that the proposed project, as conditioned, is consistent with the marine resource sections (Sections 30230 and 30231) of the Coastal Act.

E. PUBLIC ACCESS AND RECREATION

Section 30210 of the Coastal Act states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30220 of the Coastal Act states:

> *Protection of certain water-oriented activities Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

Tomales Bay is a long narrow inlet of the Pacific Ocean approximately 15-miles long and averages nearly one mile wide, which effectively separates the Point Reyes Peninsula from Marin County's mainland. The bay forms the eastern boundary of Point Reyes National Seashore, and in addition to providing important habitat for wildlife, the bay also supports six shellfish aquaculture operations, an abundance of recreational fishing, and provides a variety of recreational opportunities like swimming, sailing and boating. Directly south of and adjacent to TBOC along Highway One is Alan Sieroty beach, and across the bay are Chicken Ranch Beach, Teacher's Beach, and Shell Beach. Additionally, Tomales Bay is a popular boating destination and there are two marinas (Inverness Yacht Club and Tomales Bay Resort and Marina) that support water-oriented activities in this location. Previous correspondence to Commission staff has indicated that expansion of TBOC's operations to the west could inhibit water-oriented activities such as sailing and boating. However, the current configuration of TBOC's operations do not impede or encroach upon these activities, nor do they inhibit access to any public park or beach in the vicinity. As such, the Commission finds that the proposed project is consistent with Sections 30210 and 30220 of the Coastal Act.

F. **VIOLATION**

As noted above in the Summary, violations of the Coastal Act exist on the subject property, including, but not necessarily limited to, unpermitted installation and use of bottom bags, bottom bag longlines, floating longlines, tipping gear, and work barges, as well as the unpermitted collection and removal of aquaculture equipment and materials. In response to notification by Commission permitting and enforcement staff about these Coastal Act violations, including Notice of Violation letters sent on April 24, 2014, August 20, 2014, October 24, 2014, and October 2, 2015, as well as the encouragement they included for TBOC to begin working towards resolution through the administrative process of seeking after-the-fact authorization from the Commission, TBOC submitted this CDP application. Included in its application is a commitment by TBOC to remove approximately 70 cubic yards of aquaculture debris from public tidelands and sensitive marine habitat and to reduce the overall footprint of its operations by roughly 3.25 acres. This commitment would be memorialized through **Special Condition 3** and would be the completion of a multi-year effort TBOC has been engaged in to collect and remove from its lease area aquaculture debris left behind by prior lease holders and operators. To date, these efforts have resulted in the removal of approximately 628 cubic yards of metal, plastic, PVC, wood and similar materials across roughly 24 acres that were adversely affecting wildlife sensitive marine habitats such as eelgrass beds through physical displacement, entanglement, and risks of ingestion and injury. In addition to reducing TBOC's overall operational footprint within its lease area, these activities provided immediate and direct benefits to the marine biological productivity of Tomales Bay and removed a significant source of marine debris. Moving forward, **Special Conditions 1** through **6** would build on these benefits and integrate

marine debris prevention as well as habitat and wildlife protection measures into TBOC's operations on an ongoing basis, including through annual clean-up events, requirements for the aquaculture gear and structures to be completely removed from the lease area at the end of TBOC's permit term, and requirements for TBOC to label its cultivation gear and to properly inspect and maintain its structures and equipment on a regular basis. Approval of this application pursuant to the staff recommendation and recommended special conditions, issuance of the permit, and the applicant's subsequent performance of the work authorized by the permit in compliance with all of the terms and conditions of the permit would result in resolution of the above-described violations going forward. The matter has been referred to the Commission's enforcement division to consider options for future actions to address the liabilities that accrued while the violations were extant.

Although development has taken place prior to the submission of this Coastal Development Permit application, consideration of this application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Commission review and action on this permit does not constitute a waiver of any legal action with regard to the alleged violations (or any other violations), nor does it constitute an implied statement of the Commission's position regarding the legality of development undertaken on the subject site without a coastal permit or permit amendment, or of any other development, other than the development addressed herein, or as otherwise expressed herein. In fact, approval of this permit is possible only because of the conditions included herein, and the applicant's presumed subsequent compliance with said conditions, and failure to comply with these conditions in conjunction with the exercise of this permit would also constitute a violation of this permit and of the Coastal Act. Accordingly, the applicant remains subject to enforcement action just as it was prior to this permit approval for engaging in unpermitted development.

In order to ensure that the unpermitted development component of this application is addressed in a timely manner, the subject permit will issue upon Commission approval, with all Special Conditions required to be fulfilled immediately (or within no more than 24 months of Commission action, as established in **Special Conditions 3** and **10**). Only as conditioned is the proposed development consistent with the Coastal Act.

G. CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Fish and Game Commission found that this after-the-fact project is exempt from CEQA. Section 13096 of the Commission's administrative regulations requires Commission approval of coastal development permit or amendment applications to be supported by a finding showing the applications, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act ("CEQA"). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment. As described above, the project as conditioned herein incorporates measures necessary to avoid any significant

environmental effects, and there are no less environmentally damaging feasible alternatives, nor additional feasible mitigation measures. Therefore, to the extent that the proposed project is subject to CEQA's requirements and is not exempt, it is consistent with CEQA.

Appendix A: Substantive File Documents

Coastal Development Permits and Application Materials:

Coastal Development Permit Application No. 9-19-1242 and supporting materials.

Coastal Act Violation File Nos: V-9-15-0093 and V-7-14-001.

Scientific Publications and Technical Reports:

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