California Fish and Game Commission

Proposed Project: San Andreas Shellfish Company Application for State Water Bottom Lease in Tomales Bay, California

October 31, 2024

The attached document is a revised project description for an aquaculture lease application submitted by San Andreas Shellfish Company on October 7, 2024. The application is in the early stages of the Commission's leasing process. The proposed project will be presented and discussed at the Marine Resources Committee meeting on November 7, 2024, consistent with the Commission's enhanced state water bottom leasing process.

San Andreas Shellfish Farm
Project Description

DRAFT
October 7, 2024

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Introduction

The San Andreas Shellfish Company (SASC) is currently designing and proposing the San Andreas Shellfish Farm (SASF). Approval of the SASF will require documentation under the California Environmental Quality Act as well as approvals from local, state and federal agencies. The purpose of this draft project description is to present the SASF as currently envisioned to inform discussions with stakeholders and agencies, prior to beginning CEQA documentation or submitting regulatory permit applications. During the CEQA documentation and permitting process it is expected that the project may be modified.

Surrounding Land Uses and Setting

Tomales Bay is approximately 24 km long and 1.6 km wide. The Project is on the east side of Tomales Bay, near the bay's entrance and in between Sand Point and Tom's Point. The upland area adjacent to the Project is primarily grazed and natural open space. The area within the bay near the Project is primarily used for recreational clamming, fishing, hunting and boating. (Figure 1). Tomales Bay is a complex ecosystem and valuable resource for California and the nation because of its natural resources, aesthetic appeal, recreational opportunities, ecological value and economic activity. Visitors and Marin County residents value Tomales Bay for its natural and anthropogenic attributes. The bay itself is primarily used for recreational boating, swimming, clamming, fishing, hunting and shellfish culture. Small towns are on the shores of Tomales Bay but the area surrounding the bay is predominantly natural and agricultural open space.

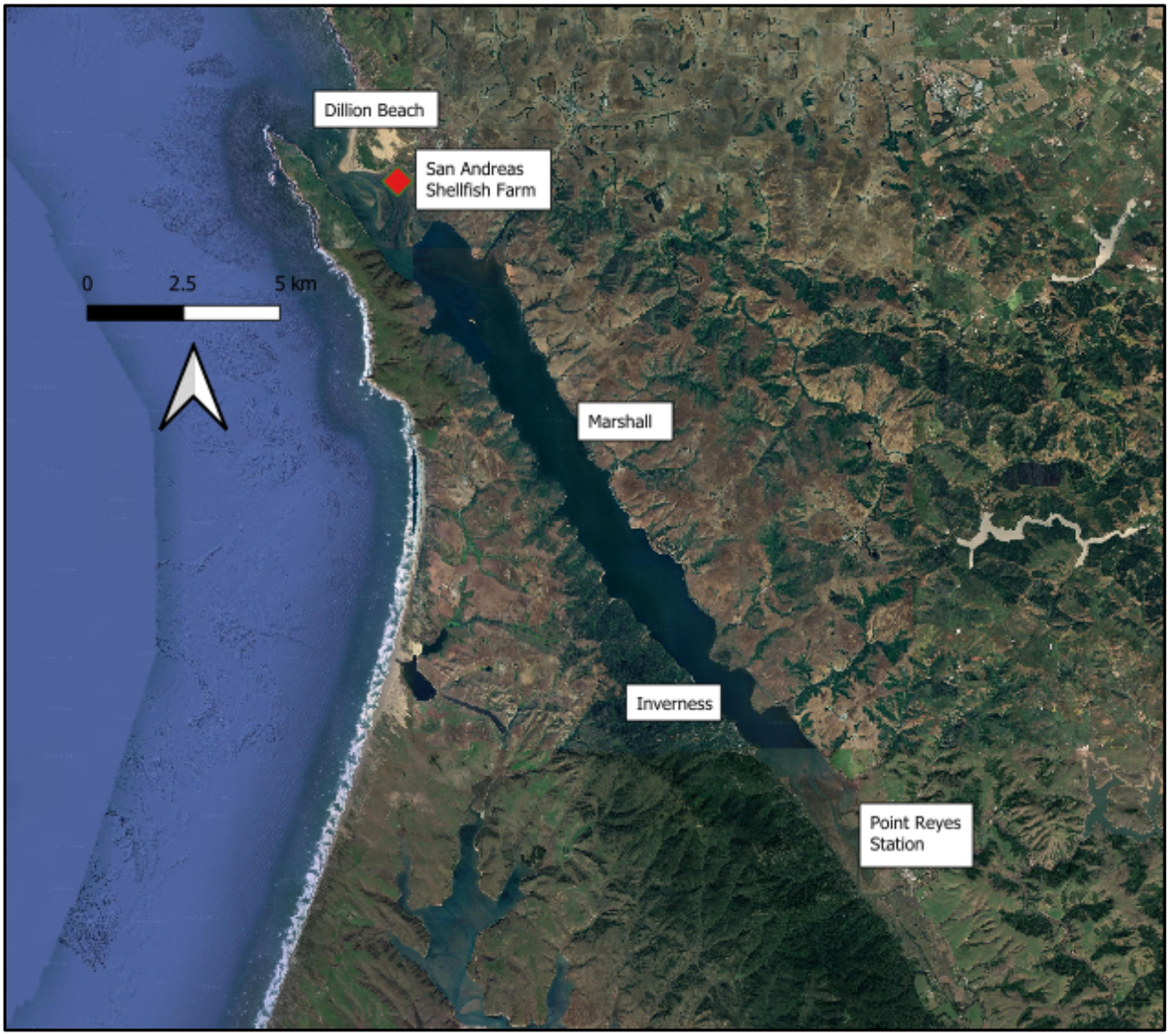

Figure 1: San Andreas Shellfish Farm Project vicinity.

Project Description

The following sections provide an overview of the Project, including:

1. Project Scope and Objectives
2. Project Area
3. Species and Culture Methods
4. Draft Best Management Practices and Mitigation Measures

Project Scope and Objectives

The Project objectives are as follows:

- Produce premium seafood for public consumption.
- Create additional job opportunities and sustainable economic development for Marin County and local jurisdictions.
- Culture shellfish and seaweed in a manner that contributes to the value of Tomales Bay's natural ecosystem.

Project Area

SASC proposes to lease from the California Fish and Game Commission an approximately 34.3 acre intertidal area and 4.6 acre subtidal area near the entrance of Tomales Bay (Figures 1 and 2).

Figure 2: San Andreas Shellfish Farm Project culture areas.

Species and Culture Methods

SASC proposes to culture the following species:

1) Manila clams, *Venerupis philippinarum*
2) Atlantic oysters, *Crassostrea virginica*
3) Pacific oysters, *Crassostrea gigas*
4) Kumamoto oysters, *Crassostrea sikamea*
5) Purple hinged scallops, *Crassadoma gigant*
6) European oyster, *Ostrea edulis*
7) Olympia oyster, *Ostrea lurida*

8) Mediterranean mussel, *Mytilus galloprovincialis*
9) Native algae species (for example: red algae, *Grasilaria* spp.)

Table 1 lists the location of the culture methods that will be used and the species that will be cultured with each method.

Table 1. San Andreas Shellfish Farm culture locations, methods and species.

Location	Method	Species
Intertidal	Suspended Long-line / Adjustable Long Line	All oyster species
	Bag on Ground (Clam)	Manila clams
	Bag on Ground (Oyster)	All oyster species
	Rack and Bag / Basket / Tray	All oyster species and Manila clams
Subtidal	Growout Rafts	All oyster species and purple hinged scallops
	Longline Suspended Culture	All oyster species and purple hinged scallop
	Longline Floating Culture	All oyster species
	FLUPSY	All species

Note: algae that colonizes on culture equipment will be harvested.

Table 2 summarizes the anticipated coverage and densities of each of the culture methods.

Table 2. San Andreas Shellfish Farm culture equipment densities.

Method	Estimated Acres	Unit	Units per Acre	% Gear Coverage per Acre	% Area Uncovered
Intertidal Suspended Long-line	16.31	lines	26	18%	82%
Intertidal Bag on Ground (Clam)	4.5	bags	2,475	34%	66%
Intertidal Bag on Ground (Oyster)	4.5	bags	1,238	17%	83%
Intertidal Rack and Bag / Basket	9.0	racks	353	29%	71%
Subtidal Growout Rafts / Wet Storage Rafts	2.11	rafts	15	10%	90%
Subtidal Longline Suspended Culture	0.5	lines	10	5%	95%
Subtidal Longline Floating Culture	1.62	lines	10	5%	95%
Subtidal FLUPSY Rafts	0.34	rafts	12	16%	84%

Equipment Common to Multiple Methods

Following is a description of shellfish enclosure equipment common among multiple culture methods.

Bags – Bag enclosures will be composed of polyethylene mesh pre-fabricated into bags or fabricated to form a semi-flat bag to contain shell stock. Mesh size of the bags will be dependent based on the size-class of the shell stock at any one time. The dimensions of the bags will also vary based on culture method and stage of shell stock growth but will not exceed 2 feet by 3 feet.

Baskets – Basket enclosures are recognized to be manufactured, or similarly fabricated, enclosures similar to the type; SEAPA®, Hexcyl©, Fusion Marine or Zapco. The dimensions of baskets varies but they are typically approximately 30 inches (in) x 12 in x 12 in.

Trays – Trays will consist of manufactured plastic or wire mesh, shallow, open topped baskets. Individual trays will be no larger than 4 ft by 4 ft by 6 inches.

Intertidal Suspended Longline / Adjustable Longline

A primary culture method for the grow-out of oyster species in all intertidal areas will be longline based placement of both baskets and bags (Figures 3, 4 and 5). Long line systems will consist of polyethylene rope, vinyl coated galvanized cable, or large gauge monofilament line with polyethylene sleeve, suspended off the bottom using 2-inch schedule 80 PVC pipe. The pipes will be spaced approximately 10 feet apart. The ends of each longline will be anchored by a helical anchor or galvanized steel post driven into the ground to provide tension and support to the lines.

Individual longlines will be no more than 150 feet long with no more than 50 baskets or bags attached to each longline. Longlines will be arranged in groups of three parallel lines with 5 foot spacing between each line. Each longline group will have at least 20 foot spacing on all sides from other longlines or culture gear. Culture baskets and bags will be held on the lines with plastic or stainless-steel clips. Baskets and bags may or may not have floats attached to assist in the mobility of the culture gear during tidal swings and wave activity that can promote shell growth.

Figure 3: Example of Intertidal Suspended Longline Culture with Bags during a low tide. (Source: https://www.pangeashellfish.com/blog/the-different-methods-of-growing-oysters)

Figure 4. Example of Intertidal Suspended Adjustable Longline Culture with Bags. (Source: http://www.bstoysters.com)

Figure 5. Example of Intertidal Suspended Adjustable Longline Culture with Bags during a high tide. (Source: http://www.bstoysters.com

Intertidal Bag on Ground

Bag-on-Ground culture (Figure 6) will be utilized in instances where occupying the ground surface is necessary to ensure adequate duration to maintain culture gear submergence. This method is not a preferred method based on the concerns of predation, siltation, and ease of operation. Culture gear utilized for this method will consist of ground lines, polypropylene rope, vinyl coated cable, or monofilament strung between ground anchors. Helical anchors, concrete blocks or stakes will be used for anchoring. Each ground line will be no longer than 200 feet long. Culture bags will be tethered to the ground lines every 3-4 feet. Ground lines will be spaced at least eight feet apart from each other. All bottom bags will be affixed to lines secured to the mudflats within the bottom bag cultivation areas.

For oyster culture, up to 65 grow out bags may be attached to each 200 foot line at any time. During operation bags may be flipped back and forth over the ground line to reduce siltation and fouling and maintain preferable conditions for oyster growth.

For clam culture, up to 130 grow out bags may be attached to groundlines limited to 30 feet in length.

Figure 6. Example of Intertidal Bag-on-Ground Culture. (Source: https://smea.uw.edu)

Intertidal Rack and Bag / Basket / Tray

The proposed Rack and Bag / Basket / Tray culture method (Figure 7) consists of fabricated 5/8-inch rebar frames with bag culture gear secured flat on top or basket culture gear suspended between the two longest top bars. Each rack will be 3 feet wide by 12 feet long. The height of the racks will vary depending on ground elevation but will not be constructed with heights more than 2.5 feet above the ground surface. The racks will be placed in groups of 12 arranged in two rows of six racks, with at least three foot spacing between each rack. Ten foot spacing will be maintained in all directions between multiple plots, and 20 foot spacing will be maintained between rack culture gear and other culture gear.

Each rack will have up to six 2-foot by 3-foot bags secured flat to the top of the racks by clips, industrial rubber bands, stainless steel or plastic clips, or polyethylene line. Alternatively, basket culture gear will be suspended off of the racks. Up to 4 baskets may be secured to each rack. Baskets will be secured in a similar manner to bags.

Figure 7. Example of Intertidal Rack and Bag Culture. (Source: http://njseagrant.org)

Subtidal Growout Rafts

Subtidal grow out rafts (Figure 8) will consist of aluminum and/or timber framed floating structures with dimensions no greater than 25 feet by 12 feet. The rafts are anticipated to maintain approximately 1.5 feet of freeboard above the water surface, and 1 foot of draft unencumbered. Raft framing will mount on to plastic floats on either end of the raft. Area above floats will be covered with plywood. The edge of the plywood will be enclosed with either plywood or chain-link with a minimum 3' height from the water to serve as a bird and seal deterrent. Between the two floats, metal cross bars will span the width of the rafts for securing grow out gear. Grow out gear secured and utilized in the rafts will include baskets, bags, and trays. Suspended gear under the rafts may reach 4 feet below the water surface.

Raft pairs will be spaced at least 40 feet apart with at least a 20 feet buffer from lease boundaries. The raft pairs will be anchored with helical anchors on opposing ends, and weighted lines tethering them together with 20 foot spacing in between.

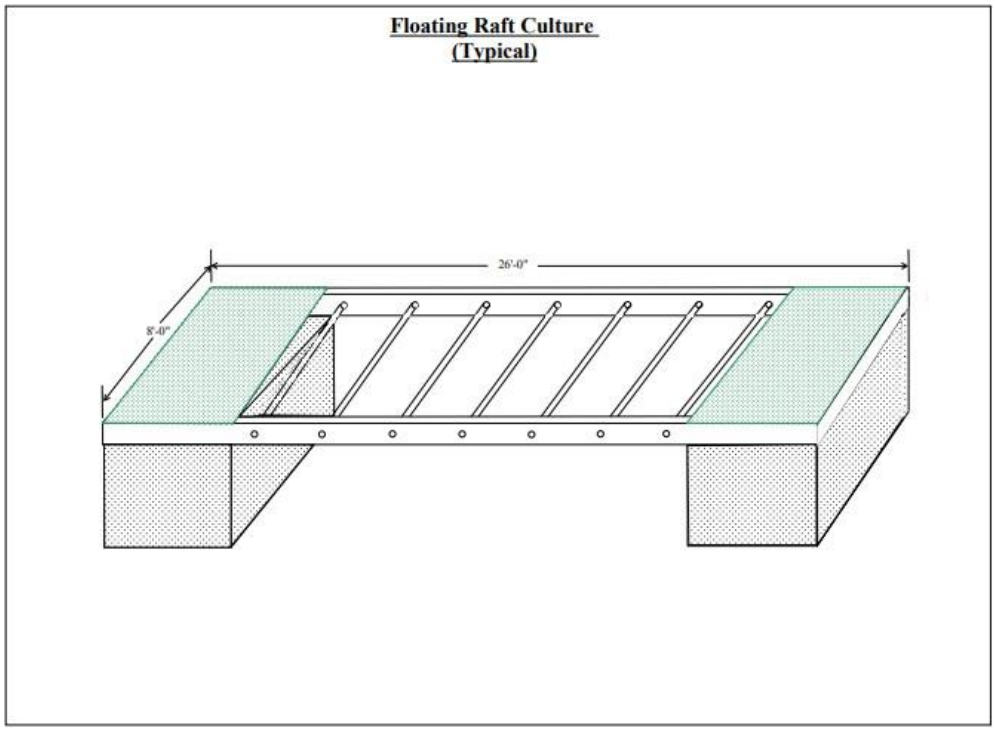

Figure 8. Floating raft culture schematic.

Subtidal Longline Suspended Culture

Subtidal longlines (Figure 9) are also proposed for using suspended baskets and bags. Subtidal longlines will consist of polyethylene rope or polyester cord anchored using helical anchors at

both ends. Floats spaced every 20 feet will suspend the line on the surface. Tethered to the longline between floats will be baskets or bags secured to the long line using metal or plastic clips, or polyethylene line. Baskets and bags may be suspended in the water column using weights to keep them submerged. Submerged baskets/bags will be arranged clusters of no more than 4 stacked units affixed to each other and then secured to the long line by two dropper lines, 2-4 feet in length. Spacing along the longline will be no less than 4 feet. Line lengths will be no longer than 200 feet

Figure 9. Example of Subtidal Suspended Longline Culture with Baskets. (https://seapa.com.au)

Subtidal Longline Floating Culture

Subtidal longlines (Figures 10 and 11) are also proposed for using floating baskets and bags. Longline systems will consist of the same gear deployment as for longline suspended culture. However, baskets and bags will be attached in pairs to the longline with floats secured to each basket/bag to keep the culture gear floating at the surface. Floating baskets/basket pairs will be attached to the longline with no less than 4 foot spacing between each pair. Line lengths will be no longer than 200 feet.

Figure 10. Example of Subtidal Floating Culture. (Source: https://www.zapcoaquaculture.com)

Figure 11: Example of Subtidal Floating Culture. (Source: https://www.zapcoaquaculture.com)

Subtidal FLUPSY

Floating Upwelling Systems (FLUPSYs) will be used in the initial maturing of seed stock. A FLUPSY is a floating raft structure designed to create an increased flow rate of seawater through screened bins holding seed stock. The system uses a paddle wheel or propeller to move water through the system to create an upwelling current of water through each of the seed containing bins. The seed containing bins are constructed with less than 2 millimeter size screen. The proposed FLUPSY structure will be constructed of aluminum and composite material with poly-encapsulated floats. Each FLUPSY will be no larger than 25 feet by 45 feet with a 6-foot draft and 1 to 3 feet of free board above the waterline. The Project proposes up to 2 FLUPSYs for use in culturing all proposed species. FLUPSYs will be either solar or tidal powered. Each FLUPSY will be moored to at least two helical anchors, one at each end, to maintain the rafts position. Seed stock sorting will be done using a series of hand-held screens, and the largest oysters and clams will be brought to other lease areas for further grow-out.

Algae Cultivation

Commercial use of algae for consumption, personal care products, laboratory use, as well as decorative use, is a growing industry. While specific algae cultivation is not a current focus of operations, San Andreas does propose to commercially use algae species, in particular Gracilaria spp. which has been observed in the proposed areas and naturally seed and grow on shellfish culture gear. There are potential ecological benefits of maintaining diverse structure in the culture area.

Facilities and Equipment

Marine Vessels

Up to 4 vessels will be used as part of the SASF operations. Vessels utilized for operations are anticipated to be of the Carolina Skiff type with wide beam, shallow draft and large open working decks. Vessels will be used for transferring culture gear and shell stock to and from the various lease areas and conducting limited shell stock handling when sorting and preparing shell stock for sale. Vessels will also be used for transferring market ready shell stock to land for transfer to vehicles for transport. Vessels will be no larger than 30 feet in length and propelled with standard outboard engines. All vessels (including rafts) will adhere to state regulations regarding the identification of commercial vessels. Bird netting and shade canopies will be installed in working areas of vessels to provide sun protection and prevent bird roosting. Vessel routes are designed to avoid eelgrass habitat and marine mammal haul out areas and are shown in Figure 12.

Figure 12. Vessel routes that will be used to access culture area.

Operation Platforms

Operation platforms will have two small, shed structures with solid wooden walls and corrugated roofs – one for a restroom area and one for equipment storage. These structures and shade canopies will extend approximately nine feet above the decking. Floatation will be provided by air filled polyethylene barrels and expanded polystyrene foam filled dock floats. The floating work platforms will be anchored in place in depths of roughly 10 to 25 feet with two to three helical anchors or weighted mooring blocks. Power on the platforms will be provided by a gasoline generator. Sorting will be assisted by an electric tube sorter/tumbling machine and two large tables used to wash and sort oysters by size. Cultivation bags will be brought to the raft and opened to remove the oysters. They will be placed directly into the tube sorter or sorting table for processing. Shell stock will be sorted by size, those that require additional grow-out will be placed back in their cultivation areas. Those that are mature, will be packaged for sale and transported to shore. Packaging of oysters will be carried out on a platform through the use of an automatic bagger machine powered by electricity and compressed air. Once packaged, the shell stock will be brought directly to shore or placed within a submerged wet storage enclosure on the work platform. The work platform will also be used to store commonly used equipment such as bottom bags, PVC posts, tools, and storage containers and as a break area for personnel.

Wet Storage Rafts

Wet storage rafts will be of similar design and dimension as grow out rafts described in Section 3.8. Operation of the rafts will function for the temporary storage of market mesh bags, grow out bags, and grow out baskets, containing cultured shellfish prior to the transport to market. The wet storage rafts will be anchored in the subtidal lease areas. Bags and baskets of market ready shellfish will be temporarily secured to the rafts to maintain submergence and ensure fresh condition.

Floating Operations Raft / Vessels

In addition to the transportation vessels described above, up to two semi-stationary vessels will be used as centers for processing operations, sorting, washing, and packaging shell stock during the various stages of culture operations and to assist in the deployment and retrieval of culture gear. These raft/vessels will be fabricated using an aluminum style pontoon boat structure, or in a similar design to FLUPSYs with the option of maneuverability by attaching a motor, or towing. As such the rafts will be mobile, with outboard engines, to position the rafts in operationally convenient locations throughout the lease area to support particular activities. At least one raft will be designed to maneuver over the floating rafts to lift culture cages or other gear with a crane/winch onboard. Both are anticipated to have sorting and washing facilities on board. Sorting facilities will consist of a series of table surfaces with grates and screens to facilitate sorting shell stock. In addition to these facilities, a prefabricated motor driven sorting machine may be utilized on the deck of the rafts. Integral with the sorting facilities, a washing system will be set up to use seawater to wash shell stock prior to market to remove any sediment, algae growth, or other natural debris from the shell stock. Power to equipment will be supplied by generator, batteries, or both. The rafts will be no larger than 40 feet long with a 20 foot beam. The rafts may also have a roof covering all or a portion of the deck, to provide cover and temporary storage space. Rafts will have permanent helical

moorings, but will also utilize Danforth anchors to temporarily anchor the rafts in positions throughout the subtidal culture areas.

Navigational Marking

SASC limited the extent of the subtidal lease area to approximately ½ the width of the deep water channels in the region; occupying the eastern halves. This leaves an approximate 75-foot minimum channel width for boater navigation, with much of the remaining channel width greater than 100 feet. The placement of floating culture gear in the eastern half of the channels will provide additional delineation of the channel assisting in safe navigation by recreational and other boaters. Improving channel navigation for other users could also help limit accidental impacts to eelgrass beds and other resources caused by errant boaters.

All markings of the lease gear and facilities will conform with the US Coast Guard (USCG) requirements for marking of aquaculture lease area corners, gear and vessels. All buoys will be of adequate size and clearly marked. All vessels will maintain marking and identification lighting to conform with USCG requirements.

Operations

Operations will generally follow the stages and activities listed in this section during regular operations after facilities have been established. Operation stages include:

1) Seed sourcing
2) Initial shell stock grow out in FLUPSY or Floats (as necessary)
3) Shell stock sorting
4) Transfer of suitable size class shell stock to grow out locations
5) Shell stock sorting and harvest
6) Shell stock transfer to market, transfer to floating temporary wet storage for subsequent transfer to market, or transfer back to grow out areas

Seed Sourcing

San Andreas Shellfish will secure shellfish seed by purchasing it from licensed seed supply vendors or through natural seeding from native / naturalized populations in the marine environment. For example, natural seeding of mussels and algae species on the culture gear is expected to occur.

FLUPSY Initial Grow-out

Seedstock that requires further growth prior to placement in grow-out areas will be placed in FLUPSY bins for initial grow-out. Operation of the FLUPSY rafts will consist of daily visits to ensure proper operation, conduct maintenance and check the size of seed stock. FLUPSY bins will be regularly cleared of any fouling organisms and material. Regular maintenance of the seed stock will consist of screening and grading to maintain consistent size classes. All washing and sorting of seed stock and FLUPSY equipment will use water from the lease area. Following use, bins and screens will be washed to remove fouling materials. Equipment may be moved to locations off the bay to ensure desiccation and remove fouling organisms.

Grow Out to Market size

After sorting of seed, shell stock that has reached adequate size for grow-out, will be transferred to grow-out equipment in the intertidal or subtidal areas. Once placed, the grow-out equipment will be visited at least quarterly, with more frequent inspection occurring as shell stock reaches maturity to check growth rates and condition for sorting and harvesting. The full period of grow-out will be dependent on species, location in the lease area and water conditions.

Sorting

Periodic sorting will be required of all cultivated species to maintain consistent size classes in relation to expected harvesting cycles. During sorting, grow-out bags and baskets will be emptied and individual shell stock will be re-allocated to appropriate size class grow-out equipment. Shell stock deemed undesirable will be removed offsite, recycled when possible or disposed.

Harvesting

Once shell stock reaches a harvestable size, the culture equipment will be transferred to the operations raft. Once on the raft the shell stock will be removed from the culture equipment and sorted. Marketable shell stock will be cleaned and packaged for market, or placed on the wet storage raft. Shell stock that has not reached market size may be transferred back to grow-out equipment or may be disposed.

Draft Best Management Practices and Mitigation Measures

SASC has identified the following potential best management practices and mitigation measures to implement as part of culture operations. It is expected that these may be modified, reduced and/or expanded on during the Project's environmental documentation and permitting process.

Pollution Control

Waste Management and Litter/Debris Removal Plans

San Andreas Shellfish Company will develop both a Waste Management Plan which encompasses how waste materials will be disposed of during operations and a Litter and Debris Removal Plan, which will describe periodic cleanup efforts within the region. Implementation practices of the plans will be part of regular employee training. The Waste Management Plan will give particular attention to management of gear not in use so as to avoid the generation of "legacy" waste gear.

Culture Gear & Materials

San Andreas Shellfish Company will strive to utilize gear types designed for longevity and avoid gear prone to degradation (e.g., foam floats and certain plastics). Single use materials which constitute potential marine debris nuisance will also be avoided when possible. Documentation will be made to gears expected life span so that replacement of gear will be possible before it can become marine debris.

Culture gear will be tagged or otherwise marked to distinguish it as originating from and belonging to SASC, as feasible. Marked gear will include: all shell stock containing equipment, buoys,

harvesting and sorting gear, and other operational support gear. Examples of gear which is not feasible for marking include clips, ropes and lines, anchors, posts and hand tools.

Equipment Design and Maintenance

Maintenance of operational equipment where there is a potential for the release of hazardous materials (oils and fuels) will be conducted at a site off the water where control and containment of hazardous materials can be ensured to prevent release to water bodies. Disposal of all hazardous materials will conform to state disposal requirements.

Biofouling Maintenance

San Andreas Shellfish Company will attempt to maintain the culture gear and area to be free of known non-native and/or biological nuisance organisms. This process will be conducted as part of regular maintenance operations. Personnel will be trained to recognize undesired organisms and the proper methods to remove, contain, and dispose of these organisms to limit the potential for spread.

Waste Shell Stock

Waste shell stock that is removed from the lease area will be desiccated to eliminate potential for the transfer of undesirable biological organisms. Following desiccation, waste shell stock will be transferred to other entities for use, transported to a landfill, or used for on-land agriculture practices. Waste shell stock will not be returned to Tomales Bay.

Environmental Protection

Environmental Education Program

San Andreas Shellfish Company will implement an internal education program to ensure employees recognize and address environmental concerns and implement best management practices to ensure environmental and public resources are protected. This program will follow the format of a health and safety plan, and will include new employee environmental orientation, weekly tailgate meetings, and maintaining weekly environmental checklists.

Eelgrass Habitat Protection

The following potential impact types to eelgrass habitat could result due to the Project:

- Siting of culture gear/practices on existing eelgrass habitat.
- Shading of eelgrass habitat through the placement of culture gear in adjacent areas.
- Direct impacts to eelgrass habitats inside and outside the lease area through Project activities such as impacts from boat propellers.

The following measures will avoid eelgrass impacts.

Eelgrass Protection Measure 1. Leases are located such that they avoid existing eelgrass beds. Where there is eelgrass within a lease, it will be avoided through Eelgrass Protection Measure 2.

Eelgrass Protection Measure 2. Prior to placement of culture equipment, eelgrass mapping will be conducted consistent with methods described in the California Eelgrass Mitigation Plan (NMFS 2014). Culture equipment will not be located within 30-feet of mapped eelgrass.

Eelgrass Protection Measure 3. All boat traffic will be confined to recognized channels where eelgrass in not present.

Seal Haul Out Protection

In development of the Project the lease areas have been established to provide a minimum 300 foot distance from recognized seal haul outs. During operations, boat transit will maintain this 300 foot distance from occupied seal haul outs.

Marine Debris Reduction and Management

San Andreas Shellfish shall carry out operations consistent with the following marine debris reduction and management practices:

Storm Damage and Debris. As soon as safely and reasonably possible following storm or severe wind or weather events, SASC 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 disposed of at an appropriate onshore facility. In addition, SASC 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 equipment cannot be repaired and replaced on the shellfish bed, it shall be properly recycled or disposed of on land.

Gear Marking. SASC shall mark shellfish culture bags (bottom bags, floating bags and hanging 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, etc.). SASC shall use crab floats (or similarly robust and durable buoys/floats) for culture activities.

Marine Debris Reduction Training. SASC shall implement an employee training regarding marine debris issues, including how to identify culture equipment 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. During trainings, SASC'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.

Cleanup Events. SASC shall 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 to pick up escaped shellfish gear and other trash, regardless of whether it was 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 an annual report. If persistent discoveries of certain gear types are made, SASC shall evaluate (and if feasible, implement use of) alternative gear types or practices that will reduce these consistent sources of debris.

Ongoing Operations. SASC shall not leave or temporarily store tools, loose gear, or construction materials on its leased tidelands or surrounding areas. All aquaculture gear installed on and in use in active cultivation sites shall be kept neat and secure and maintained in functional condition. SASC 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.

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

Wildlife Disturbance

During vessel transit, harvest, maintenance, inspection, and planting operations, SASC will avoid approaching, chasing, flushing, or directly disturbing shorebirds, waterfowl, seabirds, or marine mammals.

Water Intake System Design

All water intake systems used by SASC to supply water from Tomales Bay for maintenance or shellfish cleaning, sorting or washing shall be designed with intake screens designed consistent with California Department of Fish and Wildlife and National Marine Fisheries Service guidelines for protection of juvenile salmonids by having: (a) mesh openings of no more than 3/32 inches; and (b) a maximum intake water velocity of 0.33 feet per second.

Discharge of Materials

SASC shall not intentionally dispose of or release any equipment or waste, including lines, buoys, cultivation bags, baskets, fasteners and other equipment, or living or dead shellfish, shells, or non-native fouling organisms into the marine environment. All biofouling organisms and biological materials removed during oyster cleaning, sorting, and packing operations shall be collected and disposed of at an appropriate upland facility.

Hazardous Material Spill Prevention and Response Plan

SASC shall develop a Project specific Spill Prevention and Response Plan (SPRP) for work vessels, barges, and gasoline powered machinery that will be used during Project installation and operational activities. SASC 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 spills and to contain and clean-up spills. 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; (c) a prohibition on vessel fueling/refueling activities outside of designated fueling stations and limitation on equipment refueling to no more than five gallons, 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.

References

NMFS (National Marine Fisheries Service). 2014. California Eelgrass Mitigation Policy and Implementing Guidelines [online report]. NMFS, West Coast Region. Available at: https://www.cakex.org/sites/default/files/documents/cemp_oct_2014_final.pdf (accessed on October 4, 2024).