NPDES Wastewater Discharge Fact Sheet
Seafood Processor General Permit 900-J

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FINAL
August 24, 2020

PROPOSED ACTION: **Renewal of the Oregon 900-J National Pollutant Discharge Elimination System Seafood Processor General Permit**

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PERMIT CATEGORY: Minor Industrial General Permit

SOURCE LOCATION: Statewide

ACTIVITIES COVERED UNDER THIS PERMIT: The provisions of this permit are applicable to discharges resulting from processing seafood in the state of Oregon. This includes discharges of process wastewater with commingled stormwater and recreational sportfish cleaning stations.

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1. Background

1.1 NPDES Permit Program

The Federal Water Pollution Control Act and its amendments, also known as the Clean Water Act, and its implementing regulations require National Pollutant Discharge Elimination System permits for discharges of pollutants to waters of the U.S. At a minimum, permits must include the requirements detailed in Title 40 of the Code of Federal Regulations (40 CFR 122.44). For Oregon, Environmental Protection Agency delegated the NPDES program to the Oregon Department of Environmental Quality. State programs must contain pollution control requirements that are at least as stringent as federal requirements (40 CFR 123.25). State programs may also impose additional permit limitations as necessary for adequately protecting water quality in accordance with Oregon Revised Statute 468B.

1.2 Oregon Authority

ORS 468B.030 authorizes the Environmental Quality Commission to establish effluent limitations necessary to implement the Clean Water Act. Oregon Administrative Rule 340-045-0033 provides that DEQ may issue general permits for certain categories of minor discharge sources or minor activities for which individual NPDES or Water Pollution Control Facilities permits are not necessary to adequately protect the environment.

1.3 NPDES 900-J History

As an EPA-approved state program, DEQ is responsible for implementing these regulations and issuing NPDES permits. In 1982, DEQ issued the first 900-J NPDES general permit for seafood processors discharging to surface waters of the state. DEQ renewed the 900-J permit in 1992, 1999, and 2006. By federal rule, NPDES permits expire after a period no longer than five years. The expiration date of the 2006 permit was May 31, 2011. Until the permit is renewed, state and federal regulations provide administrative extension of permit coverage for those registrants who filed a timely application for renewal.

DEQ initially proposed to renew this permit in Feb. 2018. Substantial comment was received on the 2018 proposed draft and DEQ revisited the issues to develop this current proposal.

2. Summary of Major Changes

The following in an overview of major changes made to the 2006 900-J.

2.1 Definitions

Added definitions for various terms used in the permit, including but not limited to the following:

- Commingled stormwater.
- Conventional processing and mechanical processing.
- Three different tiers of registrants based on the scale of potential water quality impact.
- Recreational sportfish cleaning stations.

2.2 Sources Covered and Application Requirements

This section was added to clarify the following:

- Sources and processes covered by this permit.
- The permit covers commingled stormwater.
- Requirements for discharges to impaired waters.
- Application requirements for new applicants and the future renewal of this permit.
- Requirements for recreational sportfish cleaning stations.

2.3 Schedule A: Waste Discharge Limitations

The following were significant additions to this schedule:

- Removed the fisheries enhancement provisions.
- Included technology-based effluent limitations based on federal effluent limitation guidelines for the seafood processing industry. Species not currently processed in Oregon were also included should there be a future need.
- Added temperature, chlorine, ammonia, and bacteria benchmarks for Tier 1 and Tier 2 sources.
- Specified a zone of immediate dilution and dilution values for the regulatory mixing zone.

2.4 Schedule B: Minimum Reporting and Requirements

The following were significant additions to this schedule:

- Specified new monitoring frequencies and parameters for registrants by tiers.
- Clarified procedures for compliance calculations, including detailed instructions and an Excel spreadsheet to be used when reporting.
- Specified additional monitoring required for the future permit renewal.
- Required the inspection of outfall(s).

2.5 Schedule D: Special Conditions

The following were significant additions to this schedule:

- For registrants with prior coverage under the 2006 900-J, added a requirement to submit a dilution study within two years of obtaining permit coverage.
- Required that an environmental supervisor be designated.
- Included requirements for managing commingled stormwater.
- Added requirements for spill prevention and response plans.
- Required a response plan when benchmarks are exceeded.

3. Definitions

The proposed permit includes several definitions to clarify and facilitate implementation of the permit. See the permit for a detailed list. Additionally, the updated permit defines conventional and mechanical processing and includes definitions for a tiered system of regulations. These definitions are discussed in more detail below.

3.1 Conventional vs. Mechanical Processing

DEQ defined "conventional processing" to mean seafood processing with the butchering operations conducted primarily by hand. This may also include the use of scaling machines and/or skinning machines (see 40 CFR §408.180 and 408.210). This definition is based on the descriptions found in the Conventional Bottom Fish and West Coast Hand-Butchered Salmon subcategories and EPA development documents (September 1975, p. 115). The following are the relevant excerpts from these references:

- Conventional Bottom Fish processing subcategory (40 CFR 408.210)

  The provisions of this subpart are applicable to discharges resulting from the processing of bottom fish outside of Alaska in which the unit operations are carried out predominantly through manual methods. However, the use of scaling machines and/or skinning machines are considered to be normal practice within this subcategory.

- West Coast Hand-Butchered Salmon (40 CFR 408.180)

  The provisions of this subpart are applicable to discharges resulting from the hand-butchering of salmon on the West Coast.

- West Coast Mechanized Salmon Processing (40 CFR 408.190)

  The provisions of this subpart are applicable to discharges resulting from the mechanized butchering of salmon on the West Coast.

- EPA Development Document (September 1975, p. 115)[1]:

  The bottom fish and finfish industry was subcategorized into "conventional" and "mechanized" processes due to the increased water and waste loads associated with the latter. A conventional process is defined as one in which the unit operations are carried out essentially by hand and with relatively low water volume. However, the conventional process generally utilizes scaling and/or skinning machines. A mechanized process is defined as one in which many of the unit operations are mechanized and relatively large volumes of water are used.

  The discussion of the two types of processing in the development document includes numerous references to the conventional process involving mostly hand-butchering, such as cutting fillets by hand, while the mechanical process is typified by machine cutting, such as the machine head and gut process.

[1] United States Environmental Protection Agency, 1975, Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Fish Meal, Salmon, Bottom Fish, Clam, Oyster, Sardine, Scallop, Herring, and Abalone Segment of the Canned and Preserved Fish and Seafood Processing Industry Point Source Category. EPA 440/1-75/041a

3.2 Development of Tiers

DEQ developed three tiers of seafood processing dischargers to reflect different scales of operation and potential water quality impact. DEQ evaluated existing seafood wastewater discharges in Oregon and considered the following factors:

- Loading, such as biochemical oxygen demand (BOD), total suspended solids (TSS) and oil and grease (O&G) in pounds per day discharged;
- Flow (gallons per day discharged); and
- Duration of discharge and total loading annually.

DEQ considered other factors as well, including:

- Amount of seafood processed (this is adequately represented by flow and load);
- Complexity of the discharge (single versus multi species/process types; this represents calculation challenges but does not reflect the impact to water quality); and
- Receiving stream conditions (this affects water quality-based limits but not the technology-based limits and their associated monitoring).

While these factors helped DEQ to understand the nature, scope and diversity of the industry in Oregon, they were ultimately determined as not useful for establishing tiers for purposes of permitting. Section 11.2, p. 40 of this document offers a detailed explanation of how the tiers were developed and applied in the proposed permit.

4. Seafood Processing Operations

4.1 Regulated Operations

This proposed general permit provides coverage for discharges of treated process wastewater from seafood processing operations. It also covers any stormwater commingled, collected and treated with the process wastewater. The majority of the processing facilities are located in coastal Oregon communities or along major rivers close the ocean.

These operations include those with Standard Industrial Classification codes 2091 and 2092, and North American Industry Classification System (311711 and 311712) that cover "Canned and Cured Seafood" and "Fresh and Frozen Packaged Seafood." This permit also covers fishmeal processing activities with SIC codes 2048 for "Prepared Feed and Feed Ingredients for Animals and Fowls" and 2077 for "Animal and Marine Fats and Oils." Generally, seafood processing, preserving, and canning facilities receive raw or frozen seafood from harvesting operations (such as fishing, trapping and netting). The facilities prepare the seafood products typically by butchering and cleaning, followed by curing, cooking, or freezing, and then packaging and equipment cleanup. Each stage in the process usually generates wastewater.

4.2 Processes Covered

This permit authorizes seafood processors to discharge treated process wastewater, including commingle stormwater, to waters of the state subject to the conditions contained in the permit. Processors must capture stormwater that contacts seafood and treat it with the process wastewater. All other stormwater may be subject to coverage under the NPDES 1200-Z industrial stormwater general permit. The process wastewater with commingled stormwater may contain pollutants that may harm aquatic life and their habitat. Therefore, the permit requires facilities to provide treatment to reduce pollutants from the wastewater and any commingled stormwater to meet the limits in the permit prior to discharge. See Table 1 in the permit for a summary of activities allowed under this permit.

DEQ did not include surimi processing in this permit because it is not regulated by existing federal effluent limitation guidelines and, therefore, requires an analysis of processing activities at each site to develop technology-based effluent limitations.

4.3 Oregon NPDES Permit Not Required

DEQ does not require NPDES permits for the following:

- Offshore seafood processing activities in federal waters because they are regulated by EPA.
- Storage of live seafood through which seawater is circulated and then discharged to the same water body it came provided it does not cause or contribute to a violation of water quality standards.
- Offloading of seafood if no additional processing occurs on site.

5. Recreational Sportfish Cleaning Stations

This permit provides automatic permit coverage without registration for recreational sportfish cleaning stations that meet the applicable permit requirements. Recreational sportfish cleaning station operators may be required to demonstrate permit compliance. DEQ will investigate complaints about recreational sportfish cleaning stations. Violations may lead to enforcement actions. Note that this permit does not exempt these activities from any applicable rules or best management practices from other government agencies, including those of the Oregon Department of Fish and Wildlife and the Oregon Marine Board's Clean Marina Program.

5.1 Definition of Cleaning Stations

Recreational sportfish cleaning stations are defined as non-commercial facilities provided by cities, ports, marinas, or similar entities for the exclusive use of recreational or sportfish anglers and, if applicable, their licensed guides to clean limited amounts of fish caught by holders of valid recreational fishing licenses.

5.2 Permit Requirements

The owner or operator of a recreational sportfish cleaning station must comply with the following:

- Discharge less than an estimated 500 pounds of fish cleaning residuals each day;
- Cut or grind residuals into pieces of approximately one inch or smaller.
- Adequately disperse residuals into the receiving water body in a manner that prevents deposits, nuisance odors, or decreased aesthetics.

6. Application for Permit Coverage

6.1 Existing Seafood Processing Registrants

DEQ administratively extended 900-J permit coverage for existing registrants who submitted a complete renewal application prior to the May 31, 2011 permit expiration date. The 2006 900-J permit will remain in effect for these registrants until DEQ takes final action on their applications. On issuance of the proposed permit, DEQ will review existing applications and request additional information prior to assignment of the renewed permit if required to determine permit eligibility. DEQ will notify the registrant when permit coverage has been assigned.

6.2 New Seafood Processing and Future Renewals

New proposed operations or existing operations without 900-J coverage may apply for coverage under the renewed 900-J after the date of permit issuance. After DEQ determines the application to be complete, DEQ will notify the registrant that permit coverage has been assigned. More detail on application requirements is provided below.

6.2.1 Tiered approach

Application requirements for new registrants and future renewals are specified in the permit (see *Sources Covered* and *Schedule F, Condition A4* in the permit) and differ depending on the applicable tier. See Table 2 in the permit for more detail.

6.2.2 How will tier be determined for new operations?

DEQ will assign a tier based on proposed flows provided by the applicant.

6.2.3 How will tier be determined for future renewals?

DEQ will assign a tier to each registrant based on historical data. If substantial changes in the scope of operations have occurred that might affect the designated tier, the registrant must submit amended application materials. DEQ will communicate the assigned tier to each registrant in their permit assignment letter and on the cover page of the permit. Tiers will remain fixed after assignment for the term of the permit.

7. Section 303(d) Limited Waters

DEQ has added requirements in this permit for new discharges into Section 303(d) list as impaired.

7.1 303(d) Category 5 Water Quality Limited Water Needing a TMDL

7.1.1 New dischargers

A new discharge into a section 303(d) category 5 water quality limited water needing a TMDL or category 4 water quality limited water with a TMDL is prohibited by 40 CFR 122.4(i) unless the new discharge will not cause or contribute to a water quality standard exceedance. To be eligible for permit coverage in a section 303(d) category 5 water quality limited water needing a TMDL, the new discharger will need to demonstrate one of the following:

1) Discharge does not contain the impairment pollutant or pollutant related to the water quality standard that is impaired; or
2) Discharge is not expected to cause or contribute to a water quality standards exceedance.

DEQ will use the most current EPA-approved 303(d) list for evaluating new dischargers. Prior to granting permit coverage to a new discharger to Category 5 impaired waters without a TMDL, DEQ will document that one of the conditions above has been satisfied. If the pollutant is present in the discharge, DEQ may require additional monitoring for the 303(d) listed impairment pollutant and additional measures to control these pollutants if they are present. DEQ will notify the applicant these additional requirements in the registration letter and cover page of the permit.

7.1.2 Existing processors covered by 2006 permit

DEQ's 2012 303(d) list was approved by EPA in December 2018 and was in effect at the time the 900-J was proposed. DEQ's 2018/2020 list is currently under review by EPA. DEQ reviewed both lists and determined that existing processors covered by the 2006 permit are not subject to additional requirements. This permit includes monitoring for temperature, bacteria, and dissolved oxygen. In addition pesticides and arsenic are not expected to be present in seafood processing discharges. See Appendix A: 2012 and 2018/2020 303(d) Impairments by Water Body, p. 46.

7.2 303(d) Category 4 Water Quality Limited Water with TMDL

As of permit renewal there are no category 4 water quality limited water with TMDLs that have identified seafood processing discharges as needing to be controlled with wasteload allocations. Therefore, DEQ will presume that compliance with the terms and conditions of the permit complies with these TMDLs. As future TMDLs are approved by EPA, the TMDL implementation plan will specify the schedule necessary to comply with wasteload allocations if developed for seafood processing discharges. DEQ may establish additional monitoring, site controls, or compliance schedules as necessary by modifying the general permit or issuing a department order to the registrant.

8. Development of Technology-based Effluent Limits

8.1 Overview

As authorized by sections 301, 306 and 402(a)(1) of the Clean Water Act, EPA establishes ELGs for many industrial point source categories. EPA develops each ELG around a model treatment technology and the pollution reduction expected when using that technology in a well-operated mode. EPA often expresses the guidelines using production rates that may be scaled to fit different sizes operation in an industrial category. The guidelines are mandatory minimum standards of performance that must be achieved by an industrial discharger. These ELGs are applied as technology-based effluent limits in this permit. This section explains the steps DEQ took to apply the seafood processor ELGs as technology-based effluent limits.

8.2 History of EPA ELGs

EPA developed ELGs based on levels of treatment and phased them in, starting with readily available technologies for existing facilities. These were called Best Practicable Treatments (BPT) and were effective for any processor existing on the rule publication date, either 6/26/74 or 12/1/75. They were to be implemented by 7/1/77. EPA promulgated a second set of ELGs for those same existing sources based on more effective treatment technologies with a later implementation date. These were called the Best Available Technology Economically Achievable (BATEA) and were scheduled for implementation by 7/1/83. These more stringent ELGs were never implemented. Instead, subsequent to a lawsuit, the BATEA regulations for many industries were dismissed. They were replaced by requirements called the Best Conventional Pollutant Control Technology (BCT) and the Best Available Technology (BAT), published on 7/9/1986.

8.3 Applicable EPA ELGs for Permit Development

8.3.1 BAT vs BCT

BAT guidelines address toxic pollutants and are not applicable to the seafood industry; BCT guidelines do apply to seafood processing. For most types of seafood, the BCT guidelines were set equal to the BPT guidelines. When the BPT and BCT guidelines differ, the more stringent guideline applies for existing sources.

In Oregon, for existing sources, oysters and scallops are subject to BCT effluent guidelines that are more stringent than BPT.

8.3.2 Existing Source vs New Source

For processing facilities built after 12/1/1975, more advanced treatment technologies were the basis for their “new source performance standards” or “NSPS.” Sources constructed after publication of the NSPS are termed “new sources.” Sources already in business when the NSPS rules were published became known as “existing sources.” New facilities were to be built with better in-plant controls over wastewater generation and better, more effective treatment technologies. Therefore, the new source requirements are based on more stringent standards than those for existing sources. The date separating new from existing sources is the publication date of the NSPS rules.

For most Oregon seafood processors, the date separating new sources from existing sources is 12/1/1975. For catfish, crab, shrimp, and (canned) tuna, the NSPS rules were published on 6/26/1974 and apply to any source that started operations after that date.

8.3.3 Seafood Processing ELGs

EPA promulgated the ELGs for seafood processing under sections 301 and 306 of the Clean Water Act, published in June 1974 and December 1975. EPA amended these ELGs in 1986 and again in 1995. The seafood processor ELGs are in 40 CFR 408 Canned and Preserved Seafood Processing Point Source Category. These ELGs are applicable to SIC/NAICS codes 2091/ 311711 and 2092/ 311712, which cover "Canned and Cured Seafood" and "Fresh and Frozen Packaged Seafood"; 2048 for "Prepared Feed and Feed Ingredients for Animals and Fowls"; and 2077 for "Animal and Marine Fats and Oils."

The ELGs are divided into subparts. Each subpart addresses a category of seafood and a type of processing. The seafood may be a species or group of species with similar characteristics and processing procedures. Where the seafood characteristics or the method of processing differ by region, the subparts are divided by geographic area. Nationally, seafood processing is divided into 33 subparts. Table 7-1 below lists the ELGs for seafood processing operations potentially applicable in Oregon. Other seafood ELGs pertain to Alaska (Subparts D, E, F, G, I, J, P Q, T, AC, AE), the East Coast or Gulf Coast (Subparts L, Z), or to species/processes not commercially used in Oregon (Subparts A, B, C, AG) and are not listed here. Although only 12 are commercially active in Oregon at present, 17 ELGs potentially relevant to Oregon seafood processors have been adopted as TBELs for this proposed permit. Several types of processing may occur simultaneously at a plant. Typically, the wastewater from each process area flows together for centralized treatment and monitoring. As are result, multiple TBELs may apply to multi-species processors.

Table 8-1: Specific ELGs for Seafood Processors in Oregon

Subcategory	Reference 40 CFR Ch I, §408	Treatment Type for "Existing" Sources Constructed Before 12/1/1975*	Treatment Type for "New" Sources Constructed After 12/1/1975*
Dungeness and Tanner Crab Processing	Subpart H	BPT	NSPS
Northern Shrimp Processing	Subpart K		
Breaded Shrimp	Subpart M		
Tuna Processing	Subpart N		
Fish Meal Processing	Subpart O		
West Coast Salmon Hand-Butchered Processing	Subpart R		
West Coast Mechanized Salmon Processing	Subpart S		
Non-Alaskan Conventional Bottom Fish Processing	Subpart U		
Non-Alaskan Mechanical Bottom Fish Processing	Subpart V		
Hand Shucked Clam Processing	Subpart W		
Mechanized Clam Processing	Subpart X		
Pacific Coast Hand-Shucked Oyster Processing	Subpart Y	BCT	
Steamed and Canned Oyster Processing	Subpart AA	BPT	
Sardine Processing (Canning)	Subpart AB		
Non-Alaskan Herring Fillet Processing	Subpart AF		
Non-Alaskan Scallop Processing	Subpart AD	BCT	
Abalone Processing	Subpart AG		NSPS
*New Source requirements started on 6/26/1974 for sources processing catfish, crab, shrimp and canned tuna that were constructed after 6/26/1974.			

8.4 Existing ELGs Applicable to Other Species/Process Types

The EPA development documents were written in 1974 and 1975 and describe how the seafood processing industry operated at that time. The documents define the fish types and processes used at the time, characterize the wastewaters, and tabulate the treatment efficacy by treatment type. Based on these initial studies, EPA recommended numeric limitation guidelines and, after significant public review and some revision, EPA promulgated final numeric ELGs. The federal ELGs have had very few changes since the 1970s but remain legally valid.

As a result, when DEQ evaluated a pollutant discharge for a species or process, DEQ first determined if an existing ELG applied to the species or process, considering the pollutant characteristics, processing activities, and treatment technologies. DEQ also considered factors such as: same/similar pollutants of concern, similar levels of pollutant concentrations, treatment technologies available and economically achievable, and treatability of the pollutant by those technologies. From this analysis, DEQ made the following conclusion:

- *Subpart R Salmon Hand Butchered* processing includes hand processing of any salmonid and also adequately includes whole frozen salmon.
- *Subpart U Bottom Fish Conventional* processing includes hand processing of many species of benthic and pelagic finfish, including: flounder, ocean perch, haddock, cod, sea catfish, sole, halibut, and rockfish (all named in development documents) plus black cod, red snapper, hake, mackerel, anchovies, sardines, tuna and other miscellaneous finfishes, plus squid (as reviewed by DEQ subsequent to industry questions); and also adequately includes whole frozen or whole round processing. The emphasis in this category is on processing that uses hand methods, and does not include mechanical cutters or canning.
- *Subpart V Bottom Fish Mechanical* processing also adequately includes mackerel and anchovies as well as hake and other finfishes when processed mechanically.
- *Subpart AB Sardine* processing applies to the canning of sardines and other small fishes treated by that process.
- *Subpart AF Non-Alaskan Herring Fillet* processing includes mechanical processing of sea herring and other small fishes, and includes head and gut or other mechanical processing of sardines.
- *Subpart O Fish Meal* states that it applies to the processing of menhaden and anchovy into fish meal, oil and solubles. The development document states: “The reduction of oily species such as menhaden and anchovy for fish meal, oil, and solubles, including the reduction of fish waste when processed at the same facility.” The words “such as” bring other species into this category. The phrase “reduction of fish waste at the same facility” brings fish residuals into the category. The phrasing “reduction of…for fishmeal, oil, and solubles” places the emphasis on processing to achieve certain products rather than on the type of seafood input. EPA’s study contemplated the same basic equipment and process steps yielding wastewater with the same conventional pollutants in similar concentrations and treatability as are found today by Oregon fishmeal processors.

8.5 TBEL Developed by DEQ: In-shell Oysters

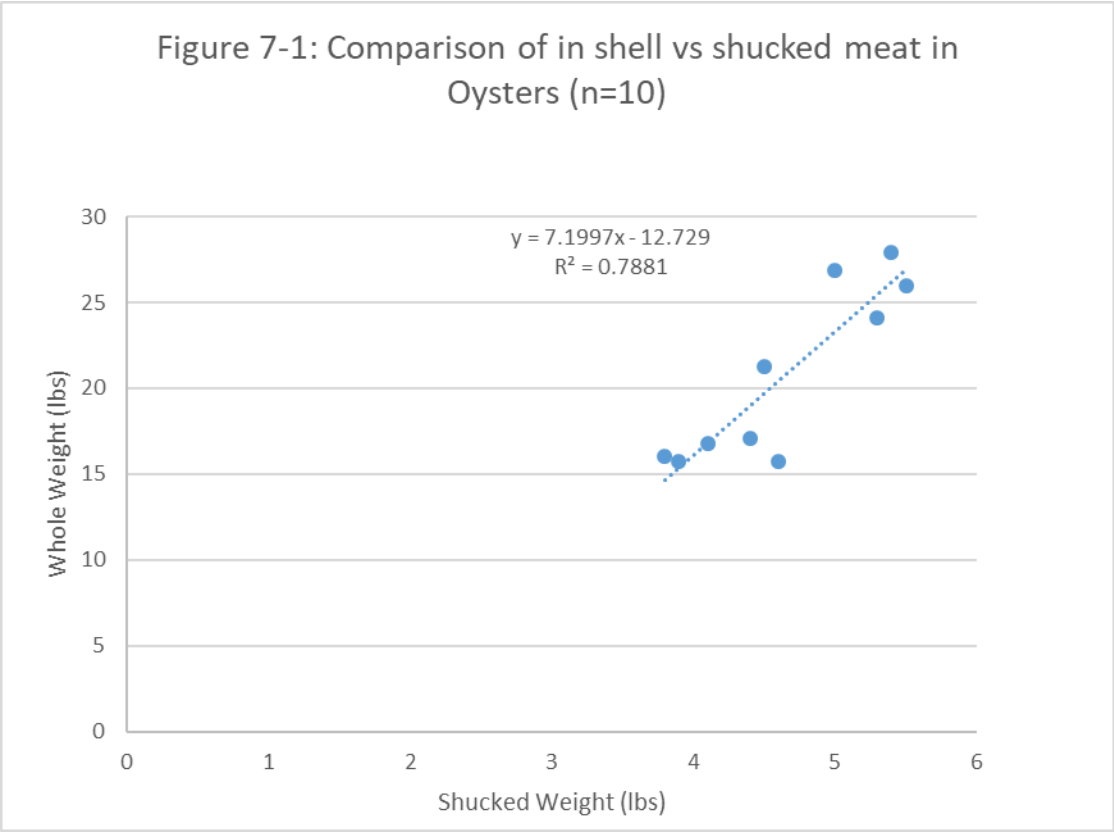
8.5.1 In-shell Oysters TBEL

DEQ has not previously regulated wastewater discharges associated with the processing of in-shell oysters with a TBEL. DEQ was asked by oyster processors in Oregon to include a TBEL for hand and drum-washing whole in-shell oysters in the permit. The request was made to help these processors understand the level of treatment needed for effluent generated from processing in-shell oysters. After careful review, DEQ concluded that in-shell oysters are not regulated by subparts Y and AA of the federal ELGs and would not be appropriately controlled by these ELGs. DEQ determined that a TBEL for in-shell oysters would not be appropriate because the weight of shucked oysters is not a reliable predictor of whole in-shell weight (see discussion below). As a result, the permit does not include production-based limits for processing in-shell oysters.

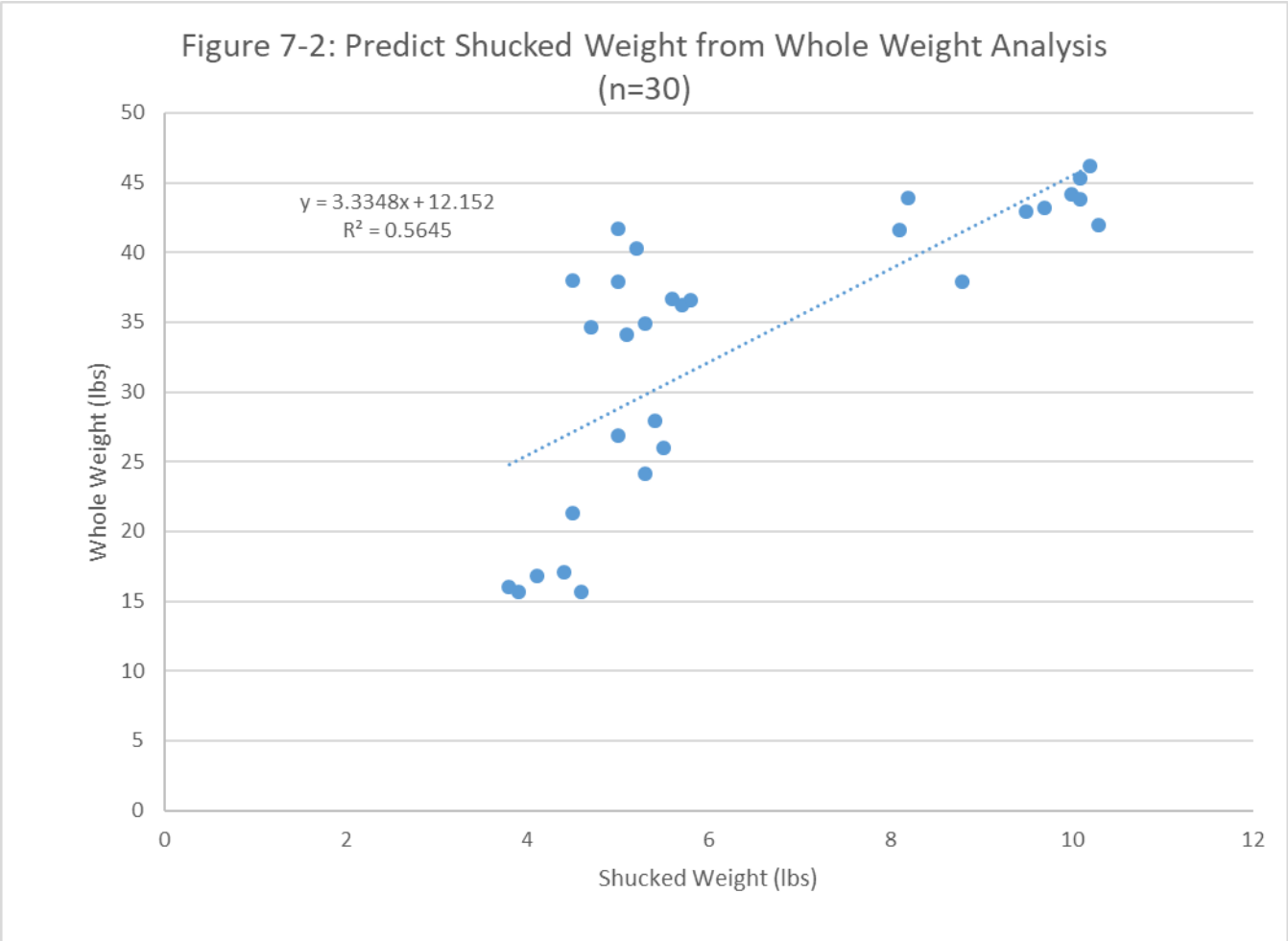
8.5.2 Analysis of Oyster Weights

DEQ reviewed the weights of shucked and whole in-shell oysters and the statistical analysis provided by SLR, an environmental consulting company, meant to demonstrate that the shucked weight of the oysters could be used to predict the whole in-shell weight of the same bushel of oysters via the relative percentage of each weight. DEQ disagreed with SLR's conclusion that the shucked weight of an oyster could be used to predict its whole in-shell weight.

DEQ developed a regression model to determine if there was a statistical relationship that explained whether or not whole oyster weight could be used to predict the shucked weight of those same oysters (Figure 7-1). The model was only able to explain 78% of the variation between the shucked and in-shell weight of oysters, which means there were other factors that influenced the weight of the oysters. DEQ consulted oyster processing facilities in Oregon and determined that weight varies by oyster species and growing method. These factors may explain the variability. Also, the regression line does not cross the X-axis near zero, and this may indicate that the shucked weight cannot be used to accurately predict the whole in-shell weight of the oysters.



After that analysis was completed, DEQ requested more oyster weight data from SLR to build another model that could be used to predict the in-shell oyster weight from the weight of shucked oysters. The regression model developed using the larger dataset demonstrated that the variability of both oyster weight types was so high that the whole oyster weight alone cannot be used to predict the shucked oyster weight. The model could only predict 56% of the variability between the datasets. The slope and intercept of the line also indicates that the shucked weight cannot be accurately predicted from the whole oyster weight (Figure 7-2).



8.6 TBEL Developed by DEQ: Whole Frozen Raw Shrimp

8.6.1 Why is a TBEL needed?

The process of producing whole frozen raw shrimp occurs with no form of dressing, cooking, or peeling; however, it does contribute pollutants to waste streams. EPA demonstrated in the development documents for 40 CFR 408 that processing shrimp produces pollutants such as: BOD, TSS, pH, and O&G. DEQ reviewed the EPA development documents for Subpart K, Northern Shrimp to determine if the ELGs from this subpart could be applied to the whole freezing process for raw shrimp. DEQ found the process used for whole frozen raw shrimp was not contemplated by EPA in the original study. Consequently, the ELGs in Subpart K do not directly apply, and DEQ determined there was a need to establish case-by-case TBELs using best professional judgment (BPJ) for whole frozen raw shrimp.

8.6.2 How was the DEQ TBEL developed?

DEQ followed the process described in the EPA NPDES Permit Writers Manual, September 2010 edition to develop a TBEL for whole frozen shrimp. The factors to be considered under Clean Water Act Section 304(b) are described in the regulations at 40 CFR 125.3(c) and (d) and include the analyses of processes, pollutants, equipment, engineering of treatment systems, and costs in the ways characterized as BPT, BCT, BAT, and NSPS.

The analyses of the process steps for whole frozen raw shrimp yielded results similar to those found by EPA for other sectors of this industry, including the following:

- Same pollutants of concern;
- Similar concentration ranges;
- Same range of technologies to be considered;
- Same suitability and effectiveness of those technologies for treating the wastes;
- Same state and age of facilities and equipment already in place;
- Similar relative costs of treatment in relation to effluent reduction benefits;
- Similar comparative cost of industrial treatment vs. discharge to publicly owned treatment plants; and
- Same model technologies for BPT, BCT, and NSPS as EPA found for the most similar subcategories of fish processing.

The TBELs proposed for whole frozen raw shrimp are production normalized because this activity coincides with other activities regulated by other production normalized ELGs whose wastewaters all combine for centralized treatment prior to discharge. The technology limits of this species/process type will be used in compliance calculations.

The case-by-case process that DEQ followed for developing this TBEL included reviewing the regulations, preambles to the regulations, EPA development documents, processes that were originally contemplated, pollutant loads associated with processing activities, and the reduction in pollutant loads achievable by the model technologies, summarized as:

- DEQ reviewed existing processes to see if a similar process had already been analyzed by EPA during development of the ELGs.
- DEQ decided the most similar process is for Northern Shrimp, covered by Subpart K.
- Then DEQ considered the process steps of that subcategory as compared to the steps of the proposed case-by-case subcategory.
- Although the cooking and peeling steps were not relevant to the new category, DEQ found that many of the remaining handling and process steps were the same.
- Next, DEQ examined the data available and the analysis steps used by EPA to determine if it would be appropriate to use data by process step and replicate the EPA analysis to achieve a technology-based limit for the new subcategory.
- DEQ looked for pollutant loading by processing step and treatment efficacy by treatment type, and examined pollutant reduction by model technologies.
- Much of this information was presented as summary data in the development documents.
- Next, DEQ reviewed the EPA process of using the data to develop the final ELGs.
- EPA's process used large whole data sets to perform statistical analyses.

- The original full data sets were not reported or readily available; and a new data set, solely applicable to this new activity, does not exist.
- When using EPA's statistical approach, which relies on a significant data set, it is not credible to perform analyses using summarized or estimated loadings and ranges of technological efficacy.
- However, the EPA development documents (Tables 69-72, pp 165-168) did report flows for Northern Shrimp in units of liters flow per thousand kilograms (L/K-kg) production for the entire process as well as the ranges of flows per production step (as % of flow).
- Process Steps in Northern Shrimp that were not included in whole frozen raw shrimp were:
    - Peelers
    - Blancher
    - Can washer
    - Retort and cooling
- Process Steps in Northern Shrimp that were included were:
    - De-icing tanks
    - Washers and separator
    - Grading line
    - Wash-down
- The wastewater flow from steps included in whole frozen raw shrimp averaged 29% of total flow.
- The maximum wastewater flow attributable to steps included in whole frozen raw shrimp was 33% of total flow.
- A flow-proportioned approach was considered and selected.
- The statistical analyses resulting in final ELGs for Northern Shrimp have already been completed and validated by EPA. They were based on a complete and robust data set.
- The relevant treatment analyses have been completed; the recommended model technology by BPT and BCT analyses for Northern Shrimp was screens, and for NSPS was screens with DAF or equal treatment.
- Based on the work performed by EPA for BPT, BCT and NSPS analyses for the Northern Shrimp subcategory, including the intense review and revisions of BCT that occurred in 1986, DEQ selected screens as the model technology for Existing Sources and screens plus DAF for new sources for this case-by-case analysis for whole frozen raw shrimp.
- These choices of model technologies are further supported by the information on various Oregon shrimp processors, including the processor who requested a limit applicable to this activity. They tend to be large multi-species seafood processers that operate year round using multiple areas of their plants to perform multiple types of processing, with all wastewater flowing to centralized treatment and monitoring. The existing form of treatment already in place is screening by Hydrosieve. DAF or equivalent treatment steps are already needed for compliance with new source limits. Since this treatment is in place, or is necessary for compliance, and equivalent alternates are allowed, it is the most economically accessible and practicable treatment.

- The case-by-case TBELs for whole frozen raw shrimp were calculated as **flow proportional** (33% maximum and 29% average) to the Northern Shrimp ELGs. For Existing Sources (using BPT and BCT) and for new sources (using NSPS).

Table 8-2: Calculations of Limits for Whole Frozen Raw Shrimp, New and Existing Sources

Parameter	Existing Sources	New Sources
BOD maximum	--	0.33(155) = 51 kg/K-kg
BOD average	--	0.29(62) = 18 kg/K-kg
TSS maximum	0.33(160) = 53 kg/K-kg	0.33(38) = 13 kg/K-kg
TSS average	0.29(54) = 16 kg/K-kg	0.29(15) = 4.4 kg/K-kg
O&G maximum	0.33(126) = 42 kg/K-kg	0.33(14) = 4.6 kg/K-kg
O&G average	0.29(42) = 12 kg/K-kg	0.29(5.7) = 1.7 kg/K-kg

Table 8-3 below summarizes the case-by-case TBELs for each pollutant parameter for whole frozen raw shrimp processing. These limits are incorporated in Schedule A of the proposed permit.

Table 8-3: DEQ TBELS for Whole Frozen Shrimp

(Pounds pollutant per thousand pounds seafood processed.)

Species/Process Type	BOD_5		TSS		Oil & Grease	
Limits, by BPJ	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Whole Frozen Raw Shrimp- Existing Sources	--	--	16	53	12	42
Whole Frozen Raw Shrimp- New Sources	18	51	4.4	13	1.7	4.6

This case-by-case analysis to produce TBELs for whole frozen raw shrimp was a necessary step to add another tool to those used for wastewater limitations in Oregon fish processing permits. These TBELs can be used beyond the general permit in other Oregon permits to place fair, achievable treatment standards on processers producing whole frozen raw shrimp.

This case-by-case analysis carries out the intent and meets the requirements of the Clean Water Act and associated regulations.

8.7 Application of ELGs as TBELs in this Permit

DEQ used the information presented in Sections 7.2 through 7.6 of this document to apply the ELGs listed in 40 CFR 408 as TBELs in this permit (see Table 7-3).

Table 8-4: ELGs used to designate TBELs for the 900-J Permit

Common Names and Species/Process Types	TBEL Coverage in the 900-J Permit References to BPJ or Federal Basis 40 CFR §408
Crab, fully processed or partially processed the same day	Subpart H – Dungeness and Tanner Crab Processing in the Contiguous States Subcategory (§§ 408.80 - 408.87)
Crab, partially processed one day, further processed on a different day	Subpart H – Dungeness and Tanner Crab Processing in the Contiguous States Subcategory (§§ 408.80 - 408.87). Use the pounds partially processed each day of processing.
Shrimp, fully processed or partially processed, such as cooked but not peeled	Subpart K - Northern Shrimp Processing in the Contiguous States Subcategory (§§ 408.110 - 408.117).
Shrimp, partially processed one day, further processed on a different day	Subpart K - Northern Shrimp Processing in the Contiguous States Subcategory (§§ 408.110 - 408.117). Use the pounds partially processed each day of processing.
Shrimp, breaded	Subpart M - Breaded Shrimp Processing in the Contiguous States Subcategory (§§ 408.130 - 408.137).
Shrimp, whole frozen raw, with no cooking or peeling	DEQ BPJ TBEL
Tuna cooked and canned	Subpart N – Tuna Processing Subcategory (§§ 408.140 - 408.147).
Fishmeal and other related seafood residuals prepared by various grind, cook, press, oil recovery, and solubles management process steps	Subpart O - Fish Meal Processing Subcategory (§§ 408.150 - 408.157). NEW SOURCES see 408.155. EXISTING SOURCES "WITH Solubles Plant" see 408.152(a) and EXISTING SOURCES with "NO Solubles Plant" see 408.152(b).
Salmon, whole frozen *(salmonids, steelhead and related fish)*	Subpart R - West Coast Hand-Butchered Salmon Processing Subcategory (§§ 408.180 - 408.187).
Salmon, hand processed, *(salmonids, steelhead and related fish)*	Subpart R - West Coast Hand-Butchered Salmon Processing Subcategory (§§ 408.180 - 408.187).

Common Names and Species/Process Types	TBEL Coverage in the 900-J Permit References to BPJ or Federal Basis 40 CFR §408
Salmon, mechanically processed *(salmonids, steelhead and related fish)*	Subpart S - West Coast Mechanized Salmon Processing Subcategory (§§ 408.190 - 408.197).
Benthic and pelagic finfish species and squid, hand processed *(various, including: flounder, ocean perch, haddock, cod, sea catfish, sole, halibut, rockfish, hake, red snapper, black cod, mackerel, anchovies, sardines, tuna, squid and others, excluding salmonids, when hand processed)*	Subpart U – Non-Alaskan Conventional Bottom Fish Processing Subcategory (§§ 408.210-408.217) and BPJ.
Benthic and pelagic finfish species and squid, mechanically processed *(various, including hake, mackerel, anchovies, other finfish, and squid; excludes salmonids)*	Subpart V - Non-Alaskan Mechanized Bottom Fish Processing Subcategory (§§ 408.220 - 408.227).
Whole frozen fish, processed whole and frozen *(various as listed above for Subpart U, BFC)*	Subpart U - Non-Alaskan Conventional Bottom Fish Processing Subcategory (§§ 408.210 - 408.217).
Glazing only (any fish species)	Subpart U - Non-Alaskan Conventional Bottom Fish Processing Subcategory (§§ 408.210 - 408.217).
Sturgeon	Subpart U - Non-Alaskan Conventional Bottom Fish Processing Subcategory (§§ 408.210 - 408.217).
Mince (any fish species)	Subpart V - Non-Alaskan Mechanized Bottom Fish Processing Subcategory (§§ 408.220 - 408.227).
Offloading or receiving with same day processing on site	This activity is included in the applicable species/process type.
Offloading or receiving with different day processing	Apply the weight offloaded or received on the day offloading or receiving occurs, using the applicable species/process type.
Clams, hand shucked	Subpart W – Hand Shucked Clam Processing Subcategory (§§ 408.230 - 408.237).
Clams, mechanically processed	Subpart X – Mechanized Clam Processing Subcategory (§§ 408.240 - 408.247).
Oysters, hand shucked	Subpart Y– Pacific Coast Hand Shucked Oyster Processing Subcategory (§§ 408.250 - 408.257).
Oysters, steamed and canned	Subpart AA– Steamed and Canned Oyster Processing Subcategory (§§ 408.270 - 408.277).

Common Names and Species/Process Types	TBEL Coverage in the 900-J Permit References to BPJ or Federal Basis 40 CFR §408
Sardines, canned	Subpart AB–Sardine Processing Subcategory (§§ 408.280 - 408.287). This is CANNED Sardines. NEW Sources see 408.285. EXISTING Sources with DRY Transport see 408.282(a). EXISTING with FLUME transport see 408.282(b).
Scallops	Subpart AD–Non-Alaskan Scallop Processing Subcategory (§§ 408.300 - 408.307).
Herring and sardines, filleted or steaked, when mechanically processed	Subpart AF - Non-Alaskan Herring Fillet Processing Subcategory (§§ 408.320 - 408.327).

Notes:

1. *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the CATFISH, CRAB, SHRIMP, AND TUNA Segment of the Canned and Preserved Seafood Processing Point Source Category* (June 1974 EPA-440/1-74-020-a); and *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the FISH MEAL, SALMON, BOTTOM FISH, CLAM, OYSTER, SARDINE, SCALLOP, HERRING, AND ABALONE Segment of the Canned and Preserved Fish and Seafood Processing Industry Point Source Category* (September 1975, EPA-440/1-75/041a).

8.8 TBELs for Offloading Activities

DEQ concluded that offloading activities that generate wastewater would be appropriately regulated using the appropriate TBEL for the process that will be employed to create the end product from the raw seafood. The TBELs derived from EPA ELGs include offloading as one of several steps EPA considered when developing most of the ELGs.

DEQ uses the entire TBEL value when only offloading occurs in a given day, as follows:

- If offloading occurs and there is no additional processing in the same day, the offload wastewater discharged must be treated to meet the production-based TBELs for whichever process will be used to process the seafood (i.e., BFM, BFC, shrimp, crab, etc.) on the day and at the site of discharge. The pounds offloaded are used in the compliance calculation.
- If offloading and processing occur on the same day, the discharged wastewater from both activities is subject to the applicable TBEL.

8.9 Calculating Permit Limits from ELGs

EPA generally intends for industrial individual permits to have limits expressed as mass load limits in pounds per day. The scalable ELGs are production-normalized, expressed in pounds of pollutant per thousand pounds of production. To calculate mass load limits for a permit, two things are needed: the relevant ELGs and the production rate in thousands of pounds per day.

$$Load\ limit \frac{lbs}{day} = ELG \frac{lbs.pollutant}{1000\ lbs\ production}\ X\ Average\ Daily\ Production\ \frac{1000\ lbs}{Day}$$

Since this calculation is site specific (using each site's Average Daily Production) and beyond the scope of a general permit, DEQ has not pursued this approach. Further, the variability of species and combinations of species being processed, and the variability of daily production rates for the seafood processing industry, do not provide data that meet the EPA process for calculating average daily production in service of mass load limits. Therefore, DEQ is retaining scalable limits in the permit.

8.10 Compliance Calculations for Technology-Based Effluent Limits

8.10.1 Overview

DEQ proposes a method of performing compliance calculations for BOD, TSS, and O&G that addresses a number of concerns communicated by both seafood processing operators and DEQ staff. Concerns about compliance calculations for TBELs include: lack of clarity, lack of consistency, compliance determination variables, and complexity of calculations, particularly regarding monthly average calculations for scenarios based on multi-species and multi-samples per month. DEQ's proposed method achieves the following outcomes:

- Is clear and consistent, providing one standard method of handling the data and performing the calculations
- Clearly addresses compliance determination
- Provides for and requires use of an automated spreadsheet to perform the calculations, thus avoiding possible simple math errors by containing embedded formulas
- Simplifies industry inputs to using data already reported and entered in one location
- Reduces monthly reporting efforts for industry by performing both the calculations and the compliance determination
- Is consistent with all of the following: the structure of the EPA ELGs (many separate subparts); compliance determination by reporting in the same units as the limits are set (production based, pounds pollutant per thousand pounds processed); the daily compliance determination ("maximum for any one day" means every day monitored has to be independently compared to the daily limit for compliance); and the calculation of monthly average as shown in the effluent limitation guidelines (monthly average is the average of daily values, in those same units)
- Is consistent with the federal electronic reporting rule which guides that compliance determination be automated in the electronic reporting system

For multiple species processing, final wastewater load is affected by the relative quantity of each contributing process line.
A summary of DEQ's analysis leading to the proposed method follows.

8.10.2 Analysis for Compliance Calculation

Early in the implementation of the Clean Water Act, EPA studied industrial practices, engineering standards and the "state of the art" of treatment at that time across industry types and across many subtypes within a given industrial category. EPA established a baseline for the degree of efficiency that could be achieved with available and achievable treatment technology. The baseline became the Effluent Limitation Guidelines. To be available for all sizes of businesses within an industry type, all the standards were presented as "scalable." For some industries that meant the guidelines were in units of concentration. However, EPA did not select the concentration approach for the seafood industry because production rate was determined to be the best predictor of pollutant discharged. For seafood, and other similar industries, the guidelines became production-based standards, such as 'pounds of pollutant per 1,000 pounds of seafood processed in a day.'

Converting scalable production-based effluent guidelines into concentration-based limits (such as mg/L) requires site-specific production information which is beyond the scope of a *general* permit. Therefore, the *limits* in the general permit remain production-based. Permit compliance is determined by comparing monitoring results with permit limits. Since the limits are in production-based units, the results of monitoring must be expressed in those same units. This entails calculations from concentration to mass load and from mass load to load per production basis. The calculations are built into the compliance spreadsheet provided by DEQ with instructions for the general calculations in Appendix 1 of the permit.

Appendix 1 of the permit presents the actual formulas and describes the input data. Registrants enter the same data that they already report in a single spreadsheet. The spreadsheet then performs the calculations based on their input data. The spreadsheet accommodates up to ten samples per month. All species/process types used in Oregon are listed in the permit. The spreadsheet is arranged so that the most common data entry and the most reported types are co-located to minimize scrolling left to right.

8.10.3 Single Species/Process Type Calculations

This is simple and straightforward for a processor with only one species/process type. It is simple for multiple days because each sample day result is compared to the daily limit and the average of daily values is compared to the monthly average limit.

- Each sample day yields a daily concentration value for each pollutant (mg pollutant/liter water).
- Sample concentrations are converted to the same units as the permit limits (pounds pollutant per 1,000-pounds production).
    a. First, the sample concentrations are converted to the mass loads of the pollutants (that is, BOD, TSS, and O&G) discharged.
    b. Next, the Production-Normalized Daily Mass Loads of the pollutants are calculated by dividing this by the daily production in units of 1,000 pounds.

- The Production-Normalized Daily Mass Load of the pollutant is compared to the Daily TBELs for compliance.
    a. Each value of the Production-Normalized Daily Mass Load is directly compared, by pollutant, to the Schedule A Daily TBEL for that species/process type.
    b. If the Production-Normalized Daily Mass Load is less than the Schedule A Daily TBEL for that species/process type, the sample is in compliance with the permit.
- Averages of daily values are compared to the monthly limits.
    a. The Production-Normalized Monthly Average Mass Load is calculated by dividing the sum of the Production-Normalized Daily Mass Loads by the number of actual production days.
    b. For compliance determination, each value of the Production-Normalized Monthly Average Mass Load is directly compared, by pollutant, to the Schedule A Monthly TBEL for that species/process type.
    c. If the Production-Normalized Average Monthly Mass Load is less than the Schedule A Monthly TBEL for that species/process type, the sample is in compliance with the permit.

8.10.4 Multiple Species/Process Type Calculations

Some of Oregon's seafood processing operations process multiple species/process types within the same calendar month. Typically, the waste streams are commingled prior to treatment and monitoring. In order to determine compliance with permit limits, the daily concentration of BOD, TSS, and O&G for registrants in all tiers must be converted to a combined mass load for each pollutant as follows:

- Each sample day yields a daily concentration value for each pollutant (mg pollutant/liter water).
- Sample concentrations are converted to the same units as the permit limits (pounds pollutant per 1,000-pounds production).
    a. First, the sample concentrations are converted to the mass loads of the pollutants discharged (this is the same calculation as that used for a single species/type process).
    b. Next, the Production-Normalized Daily Mass Loads of the pollutants are calculated by dividing this by sum of the production of all species/process types conducted over the sample day, in units of 1,000 pounds.
- The Multi-Species Daily Maximum Permit Limit is calculated based on the production that day.
    a. For each species/process type, the production is multiplied by the corresponding Daily TBEL.
    b. These are added together to obtain the total allowable discharge (in pounds).

d. The total allowable discharge is production-normalized by dividing it by the sum of the production of all species/process types conducted over the sample day, in units of 1,000 pounds. This is the Multi-Species Daily Maximum Permit Limit for that day.

e. Each day will have one Multi-Species Daily Maximum Permit Limit. The Multi-Species Daily Maximum Permit Limit will be different each day, depending on the production for each day.

- The Production-Normalized Daily Mass Load of each pollutant is compared to the Multi-Species Daily Maximum Permit Limit for compliance.
    a. Each value of the Production-Normalized Daily Mass Load is directly compared, by pollutant, to the Multi-Species Daily Maximum Permit Limit for that day.
    b. If the Production-Normalized Daily Mass Load is less than the Multi-Species Daily Maximum Permit Limit for that day, the sample is in compliance with the permit. In other words, the Production-Normalized Daily Mass Load of BOD, TSS, or O&G discharged **for the combined waste stream of all of the species/processes** used on each sample day must be less than the corresponding Multi-Species Daily Maximum Permit Limit for that day.
- Averages of daily values are compared to the monthly limits.
    a. The Production-Normalized Monthly Average Mass Load is calculated by dividing the sum of the Production-Normalized Daily Mass Loads by the number of actual production days.
    b. The Multi-Species Monthly Average Permit Limit is calculated based on the production that month.
        i. For each species/process type, the total monthly production is multiplied by the corresponding monthly average TBEL.
        ii. These are added together to obtain the total monthly allowable discharge (in pounds).
        iii. The total allowable discharge is production-normalized by dividing it by the sum of the production of all species/process types conducted over the month, in units of 1,000 pounds. This is the Multi-Species Monthly Average Permit Limit for that month.
    c. For compliance determination, each value of the Production-Normalized Monthly Average Mass Load is directly compared, by pollutant, to the Multi-Species Monthly Average Permit Limit.
    d. If the Production-Normalized Average Monthly Mass Load is less than the Multi-Species Daily Maximum Permit Limit for that day, the sample is in compliance with the permit.

8.10.5 Tips for Completing the Compliance Calculation Spreadsheet

When entering information and data into the compliance spreadsheet, the registrant will need to do the following to determine daily and monthly compliance:

- Complete the header of the spreadsheet, including whether the facility is considered a "new" or "existing" source based on when the facility was constructed.
- Enter the sample concentration values for each sample day in milligrams per liter.
- Enter the amount of production for each species/process type for each sample day in pounds of seafood product.

8.11 Oregon Highest and Best Practicable Treatment/Control Requirement and Minimum Design Criteria for Industrial Wastes

OAR 340-041-0007(1) requires the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels. OAR 340-041-0007(15) further requires minimum design criteria for treatment and control of wastes.

The technology-based effluent limitations included in this permit require the forms of treatment and waste control methods that represent the highest and best practicable treatment and control requirement and design criteria specified by rule. The TBELs are based on EPA effluent limitation guidelines that determined in-plant controls, best management practices, screening and model technologies (such as dissolved air flotation) appropriate to treat fish processing wastewater and feasible to the sites on which this processing occurs. The EPA development documents indicate that these controls, practices, and technologies perform well: 70-90% removal of TSS, 85-90% removal of O&G, and 30-50% removal of BOD. DEQ has determined that these removal rates are consistent with secondary treatment removal rates. As allowed by rule, specific industrial waste treatment requirements may also be determined on an individual basis but none are being made for this permit renewal.

9. Water Quality Standards

9.1 Applicable Water Quality Standards

Water quality standards are the foundation of the water quality-based pollution control program mandated by the Clean Water Act. The standards define the goals for a water body by designating its beneficial uses, setting water quality numeric and narrative criteria to protect those uses and establishing antidegradation policies.

9.1.1 Statewide beneficial uses

The statewide beneficial uses applicable to this permit are:

Public Domestic Water Supply	Resident Fish and Aquatic life
Salmonid Fish Rearing	Aesthetic Quality
Boating	Livestock Water
Industrial Water Supply	Wildlife and Hunting
Salmonid Fish Spawning	Hydro Power
Water Contact Recreation	Anadromous Fish Passage
Irrigation	Fishing
Transportation	Commercial Navigation

9.1.2 Numeric criteria

DEQ's water quality standards are described in OAR 340-041, which includes tables containing the numeric criteria for the protection of aquatic life and human health. When DEQ establishes or revises water quality standards, DEQ identifies the beneficial uses and establishes criteria based on the levels needed to protect those uses. For example, beneficial uses typically most sensitive to dissolved oxygen are fish and aquatic life. Fish and other aquatic organisms need an adequate supply of oxygen in the water to be healthy and productive. In this case, the criteria identify amounts of dissolved oxygen levels or concentrations necessary to protect fish. In other cases, as with many of the toxic pollutants, numeric criteria identify water column concentrations that are protective of aquatic life and human health.

9.2 Antidegradation Policy

The purpose of the antidegradation policy in OAR 340-041-0004 to "guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses."

DEQ has determined that this permit is sufficient to maintain and protect the water quality necessary to ensure that existing and designated beneficial uses are protected. Permit renewals with the same discharge loadings are not considered to lower water quality from the existing condition. The permit continues to include TBELs based on varying production levels and maintains the size of the regulatory mixing zone. Registration under this permit has also declined over the years from 35 processors covered by the 1999 permit to 24 initially covered by the 2006 permit. Currently, there are 18 processors covered by this permit.

9.3 Antibacksliding

This proposed permit renewal action will not violate the antibacksliding provisions in 40 CFR 122.44(l) because the proposed permit maintains the limits in the 2006 version of the permit.

9.4 Water Quality-Based Effluent Limitations

WQBELs are permit limits that are developed to protect water quality by ensuring that numeric water quality criteria are met in the receiving water body. In addition to TBELs, DEQ must determine if there are any applicable WQBELs that are needed to protect water quality.

EPA developed a statistical methodology known as a reasonable potential analysis or RPA to: 1) determine if there is a reasonable potential for a discharge to cause or contribute to the exceedance of numeric criteria; and 2) if there is a reasonable potential, set a limit. Such an analysis takes into account effluent variability, available dilution (if applicable), receiving stream water quality, and aquatic and human health numeric criteria. DEQ uses EPA's methodology.

DEQ determined that additional data was needed to prior to setting WQBELs and set benchmarks instead. See Section 10, p. 33 for more detail.

10. Schedule A: Waste Discharge Requirements

10.1 Overview

NPDES permits must contain limits consistent with 40 CFR 122.44(d). DEQ is required to develop permits that are protective of the designated uses of the receiving water bodies. Unlike individual permits, which include requirements tailored to site-specific considerations, general permits are tailored to industrial processes or types of discharges and do not contain site-specific limits.

When renewing a permit, DEQ evaluates the existing limits in the permit against limits based on technology-based standards and water quality-based standards. With very few exceptions, the anti-backsliding provisions described in Clean Water Act Section 402(o) and 40 CFR 122.44(l) do not allow relaxation of effluent limits in renewed permits. The most stringent of the existing or new limits must be included in the renewed permit.

10.2 Technology-Based Effluent Limitations

The TBELs are listed in Tables A1 and A2 of the permit. Supporting information for the development of the TBELs may be found in Section 8, p. **Error! Bookmark not defined.** of this document. The TBELs were derived from the ELGs listed in 40 CFR 408 and DEQ's best professional judgment.

10.3 Ammonia and Chlorine Benchmark

10.3.1 Background

Ammonia and chlorine may be found in the effluent from seafood processors because they are common cleaning and disinfection chemicals. Ammonia may also be present due to the degradation of seafood wastes and chlorine may be found in the drinking water supply. DEQ initially proposed effluent limitations for these pollutants in the 2018 proposed permit based on the assumption that they would be present in levels that would exceed the water quality standards because the standards are very low (see Table 10-1, p. 34 below). DEQ did not conduct a reasonable potential analysis using existing effluent data because such data was not available. DEQ had included a requirement in the 2006 permit for registrants to monitor their discharges for chlorine and ammonia upon development of sampling and analysis protocol by DEQ. DEQ did not, however, develop this protocol until 2018. DEQ distributed an updated monitoring protocol to registrants in early 2018 requesting that ammonia and chlorine monitoring be conducted in 2018. While DEQ received some effluent data in 2018, DEQ has determined that additional data is needed to adequately characterize the species processed, seasonality and different processes covered by this general permit.

10.3.2 Benchmark approach and applicability

Due to the lack of representative effluent data, DEQ instead developed ammonia and chlorine benchmarks in this permit (see Table 10-2, p. 34 below). To calculate the benchmarks, DEQ used the section of the Reasonable Potential Analysis spreadsheet (version 1.61 for ammonia and version 3.8 for chlorine) typically used for calculating permit limits with the assumptions listed in Table 10-3, p. 35 below. Appendix B: Ammonia Benchmarks, p. 47, and Appendix C: Chlorine Benchmarks, p. 49, provide overviews of these spreadsheets.

10.3.3 Benchmark applicability

Tier 1 and Tier 2 registrants will be required to monitor chlorine and ammonia in their effluent on a regular basis and report test results on a monthly basis. See Schedule B of the permit for monitoring and reporting requirements. Tier 3 facilities are exempt from the ammonia and chlorine benchmarks because their discharge flows are extremely low and the amount of ammonia and chlorine in their discharges are not expected to exceed water quality standards outside of the regulatory mixing zone. Exceedance of a benchmark is not considered a violation but the registrant will need to implement a corrective action plan whenever a benchmark is exceeded as discussed in section 10.5.4 *Response to Benchmark Exceedances*, p. 38.

Table 10-1: Ammonia and Chlorine Criteria

	Freshwater		Saltwater	
OAR 340-041-0833, Table 30	**Acute**	**Chronic**	**Acute**	**Chronic**
Ammonia For more information: https://www.oregon.gov/deq/wq/Pages/WQ-Standards-Toxics.aspx	*The ammonia criteria are pH and temperature dependent.*		*The ammonia criteria are pH, temperature and salinity dependent.*	
Chlorine	19 µg/l	11 µg/l	13 µg/l	7.5 µg/l

Table 10-2: Ammonia and Chlorine Benchmarks

	Monthly Average	Daily Maximum
Freshwater		
Ammonia as N (mg/l)	28	48
Chlorine, Total Residual (mg/l)	0.1	0.1
Saltwater		
Ammonia as N (mg/l)	2.7	1.5
Chlorine, Total Residual (mg/l)	0.1	0.1
Note: The chlorine benchmark calculation results in values of 0.002 mg/l and 0.003 mg/l. However, 0.1 mg/l is used as the permit benchmark because it represents the actual detection level of chlorine.		

Table 10-3: Assumptions for Ammonia and Chlorine Benchmarks

	Freshwater	Saltwater	Comments
Dilution factor at edge of regulatory mixing zone	11	11	Based on dilution ratio of 10 (Qe/Qr) in permit where dilution factor = (Qe+Qr)/Qr.
Dilution factor at edge of zone of immediate dilution	6	6	Based on dilution ratio of 5 (Qe/Qr) in permit where dilution factor = (Qe+Qr)/Qr.
Effluent			
Salinity	5 ppt	5 ppt	
Alkalinity ($CaCO_3$)	25 mg/l	25 mg/l	No significant influence on benchmarks.
Temperature	20°C	20°C	
pH	7 S.U.	7 S.U.	
Receiving water (background)			
Salinity	NA	34 ppt	From NOAA data.
Alkalinity ($CaCO_3$)	25 mg/l	25 mg/l	No significant influence on benchmarks.
Ammonia	0	0	
Chlorine	0	0	
Temperature	20°C	20°C	
pH	7 S.U.	8 S.U.	
Required sampling in permit	2	2	Based on Tier 2 sampling requirement.

10.4 Temperature Benchmark

10.4.1 Background

Pursuant to OAR 340-041-0028(7), bays, oceans and the Columbia River below river mile 7 may not be warmed by more than 0.3°C (0.5°F) above the natural condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life. For rivers and streams, OAR 340-041-0028(4) sets a rolling seven-day average maximum numeric temperature criteria for a water body based on how it is used by salmonids (e.g., migration corridor, rearing, spawning). For migration corridors, the rolling seven-day average maximum of 20.0°C (68.0°F) may not be exceeded in the water body. Effluent discharges with the potential to warm receiving water bodies are further limited by OAR 340-041-0053(2)(d), which sets temperature thermal plume limitations to protect salmonid spawning areas, prevent thermal shock of fish, prevent blockage of fish migration, and protect fish from lethal temperatures.

DEQ expects that the majority of seafood operations covered by this permit will continue to be located in bays or in estuarine waters. Based on DEQ inspections and knowledge of current operations, existing outfalls are located in areas with wide cross sections or amongst the docks allowing for fish passage. Heated water from cooking or cleaning activities are typically commingled with cooler wastewater and/or washdown water streams or held prior to discharge resulting in lower temperatures. Discharges are also intermittent, varying during the day and dependent on season and daily fish supply.

10.4.2 Benchmark approach and applicability

Due to the potential heat load from cooking and cleaning activities and the absence of temperature effluent data, DEQ developed temperature benchmarks and monitoring requirements for Tier 1 and Tier 2 registrants to ensure that salmonids are protected. DEQ does not expect Tier 3 registrants to exceed the criteria outside of the regulatory mixing zone because effluent flows are extremely low and intermittent. Tier 1 and Tier 2 registrants have a daily maximum benchmark of 32°C (89°F) based on the OAR 340-041-0053(2)(d)(B): *Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32.0*°C *(89.6* °F*) or more to less than 2 seconds.* In addition, Tier 1 registrants (the larger facilities that have a greater possibility to run for more than seven days in a row) have a benchmark for the sevenday rolling average of daily maximum temperatures of 20°C based on the migration instream standard. Tier 1 registrants will be required to collect a temperature sample once per hour while discharging. Tier 2 registrants will collect two samples per month when discharging. Tier 3 registrants will collect temperature data annually prior to permit renewal for renewal application purposes.

Table 10-4: Temperature Benchmarks for Tier 1 and Tier 2 Sources

Parameter	Tier 1 7-day Rolling Average of Daily Maximum Temperatures	Daily Maximum
Temperature (°C)	20	32

10.5 Bacteria Benchmark

10.5.1 Background

Oregon's bacteria standards in OAR 340-041-0009 were updated and approved by EPA in Nov. 2017 to protect people that recreate in ocean waters. In addition to revising the bacteria standards for coastal recreation, DEQ clarified where *E. coli*, enterococcus, and fecal coliform standards apply by identifying freshwater and coastal recreation and shellfish harvesting areas. EPA has determined that *E. coli* are better indicator organisms for predicting potential illness from exposure to freshwater while enterococcus levels should be used in coastal waters. Fecal coliform, a broader test that includes *E. coli*, enterococcus, and other bacteria associated with fecal matter from warm-blooded animals, is the indicator for ensuring shellfish harvesting areas are protected.

10.5.2 Benchmark approach

Registrants covered by the 2006 permit were required to monitor for *E. coli* and fecal coliform once a month if effluent flows were greater than 5,000 gallons/day. Results indicated that these bacteria are present in effluent and could exceed water quality standards. DEQ initially proposed bacteria limits in the 2018 version of this permit based on registrant data. DEQ received comments that the source of fecal bacteria is from wildlife and not from the processing of seafood itself. In addition, DEQ cannot assume that enterococcus levels are exceeding standards because there is no enterococcus data and *E.* coli or fecal coliform data do not clearly correlate to enterococcus because enterococcus is not a subset of fecal coliform bacteria as is *E. coli*. To address these issues, DEQ determined that it would be appropriate in this permit to require: 1) best management practices to minimize the exposure of stormwater to industrial activities (see Schedule D, condition 5 of the permit); and 2) additional monitoring of the applicable bacteria species to determine the origin of fecal bacteria.

The benchmarks for bacteria are listed in the tables below. For freshwater, the benchmark is based on the *E. coli* standard. For saltwater, the benchmark is based on the fecal coliform standard for shellfish harvesting areas and enterococcus to protect coastal recreation.

10.5.3 Benchmark applicability

DEQ will inform applicants when permit coverage is granted which benchmark is applicable to its discharge. Shellfish harvesting areas are illustrated in *DEQ Issue Paper: Revisions to the Water Quality Standard for Bacteria, Appendix A: Figures Supporting Use Designation (2016)* (see Appendix D, p. 50). Existing seafood processors covered by the 2006 permit that discharge to the Columbia River and the northern portion of Yaquina Bay off of Bay Boulevard are not be required to conduct fecal coliform monitoring as these areas do not support shellfish harvesting. Existing processors in Charleston will be required to conduct fecal coliform monitoring. For other areas, DEQ will review the shellfish harvesting use maps referenced above for other coastal areas prior to assigning permit coverage.

Table 10-5: Bacteria Benchmarks for Tier 1 and Tier 2 Sources

Parameter	Monthly Geometric Mean	Daily Maximum
Freshwater: *E. coli* (org/100 ml)	126	406

Parameter	Monthly Geometric Mean	No more than 10% of samples in a month
Saltwater near shellfish harvesting areas		
Fecal Coliform (org/100 ml)	14	43
Enterococcus (org/100 ml)	35	130
Saltwater		
Enterococcus (org/100 ml)	35	130

10.5.4 Response to Benchmark Exceedances

Tier 1 and Tier 2 registrants are be required to monitor for temperature, ammonia, chlorine, and bacteria according to the frequencies specified in Table B2 of the permit. The registrant is required to compare results to the benchmarks in Tables A3 and A4 of the permit. Exceeding a benchmark is not a violation of the permit; however, corrective action by the registrant is required. The registrant must submit a Level 1 corrective action plan to DEQ for approval by March 31 of the next year if benchmarks are exceeded in the first year of permit coverage. If benchmark exceedances continue in the second year of permit coverage, the registrant must submit a Level 2 corrective action plan for DEQ approval by March 1 of the following year to meet benchmarks by the end of the fourth year of permit coverage. The Level 2 plan must be developed by an Oregon professional engineer.

In the corrective action response to DEQ, the registrant may demonstrate that its discharge does not violate the water quality standard for which the benchmark was set. For example, the registrant could use its mixing zone study and discharge data to support that its discharge did not impact shellfish harvesting areas on the day or month fecal coliform benchmarks were exceeded. For temperature, the registrant could demonstrate that the 7-day rolling maximums were not for continuous discharges and demonstrate that receiving water body temperatures will be protected. DEQ will consider relevant data submitted by the registrant and inform the registrant whether additional corrective actions are necessary. In no case will DEQ remove the benchmark or monitoring requirements from the permit for a particular registrant. Such an action would require public notice and is not appropriate because this is a general permit. General permits are not developed for an individual activity.

10.6 Overview of Regulatory Mixing Zones

Federal regulations and Oregon Administrative Rules allow DEQ to suspend all or part of the water quality standards in small, designated areas around a discharge point. Initial mixing of the wastewater with the receiving stream occurs in these small areas. These are known as “allocated impact zones” or “regulatory mixing zones.” Two mixing zones can be developed for each discharge: 1) The acute mixing zone, also known as the “zone of initial dilution” (ZID), and 2) the chronic mixing zone, usually referred to as “the regulatory mixing zone.” The ZID is a small area where acute criteria can be exceeded as long as the exceedance does not cause acute toxicity to organisms drifting through it. The regulatory mixing zone is an area where acute criteria must be met but chronic criteria can be exceeded. It must be designed to protect the integrity of the entire water body. The applicable rules are found in OAR 340-041-0053.

10.6.1 Regulatory Mixing Zone

The fact sheet for the 2006 version of the 900-J permit maintained a 100 foot regulatory mixing zone for each discharge registered under the permit. There was no zone of immediate dilution. DEQ added a 10 foot ZID to the permit to make it consistent with current DEQ mixing zone policies.

The allowable mixing zone is that portion of the receiving water body within a radius of 100 feet of the point of discharge (e.g., the end of the outfall diffuser). The Zone of Immediate Dilution is defined as that portion of the allowable mixing zone that is within a radius of 10 feet of the point of discharge.

DEQ is also clarifying that the dilution requirements of 10 to 1 and 5 to 1 of the regulatory mixing zone and zone of immediate dilution, respectively, are dilution ratios. The dilution ratio of the discharge to receiving water body must be a minimum of 1 to 10 at the edge of regulatory mixing zone and a minimum of 1 to 5 at the edge of the zone of immediate dilution.

10.7 Groundwater Protection

The proposed permit requires that registrants prevent adverse impacts on beneficial uses of groundwater. DEQ added this requirement to ensure that all wastewater and seafood process related residuals must be managed and disposed of in a manner that will not cause a violation of the Groundwater Quality Protection Rules at OAR 340-040.

11. Schedule B: Minimum Monitoring and Reporting Requirements

Schedule B describes the minimum monitoring and reporting necessary to demonstrate compliance with the conditions of this permit. DEQ is authorized to require periodic reporting by registrants by ORS 468.065(5) and 40 CFR 122.41. Self-monitoring requirements are the primary means of ensuring that permit limits are being met.

11.1 Tiered Approach to Monitoring and Reporting

DEQ proposes a three-tiered approach to both monitoring and reporting requirements. Goals of the three-tiered approach are to provide:

- Clear regarding monitoring requirements.
- Equitable between comparable processors – similar operations will have similar requirements.
- Equitable with other industries – requirements at seafood processing facilities will be similar to requirements in industries with similar potential water quality impacts.

11.2 How were the Tiers Developed?

The tiers are based on the size of the facility and the potential magnitude of the water quality impact. The sizes of facilities is based on the average annual flow, and to some extent on the duration of operations. The potential magnitude of the water quality impact is based on the daily average BOD load and the total annual BOD load (Table 10-1). The flow and load from the Tier 3 facilities are less than 5,000 gallons per day (gpd) and less than 100 pounds per day BOD, respectively.

11.3 Tier Assignments

DEQ will assign a Tier to each registrant based on their historical data. DEQ will communicate the assigned Tier to each registrant within their permit assignment letter and on the cover page of the permit. If substantial changes in the operations have occurred (which might affect the designated Tier) between when an application was submitted and when the 900-J is issued, the registrant may submit amended application materials. However, once assigned, the Tier will remain the same for the term of the permit.

11.4 Tier Requirements

All processors in the same Tier will have the same monitoring and reporting requirements. Proposed monitoring and reporting requirements for Tier 1 dischargers are similar to those for other industries/facilities of their size and pollutant load. Tier 1 facilities will be required to monitor more often because the pollutant loads are much higher than at other facilities. These facilities are also typically in operation throughout the year. In comparison, Tier 2 and 3 facilities process less frequently, with lower pollutant loads. These facilities will require fewer samples to determine if they are in compliance with the permit limits.

Based on years of discharge monitoring report review, DEQ determined that Tier 3 discharges are adequately represented and characterized by the proposed quarterly sampling and monitoring requirements. Further, DEQ determined there is no reasonable potential for the parameters and loads discharged by Tier 3 processors to cause or contribute to an exceedance of water quality standards. DEQ is confident that the proposed monitoring and reporting requirements, both for parameters and frequency, for Tier 3 facilities reflect the actual discharges from these facilities and are protective of the receiving water bodies.

Table 10-1: Basis of Tiers for Monitoring and Reporting Requirements

Parameter	Tier 1	Tier 2	Tier 3
		Not Tier 3	
		AND	
Volume of Flow (gallons per day)	Greater than or equal to 150,000	Less than 150,000	Less than 5,000
	OR	AND	AND
Average Daily BOD Loading (lbs/day)	Greater than or equal to 2,000	Less than 2,000	Less than 100
	OR	AND	AND
Total Annual Loading (lbs/year)	Greater than or equal to 150,000	Less than 150,000	Less than 5,000
	OR	AND	AND
Duration of Operations	Typically, 9 to 12 months of operations per year; fewer months if flow and loads as stated	Typically, 3 to 6 months of operations per year; some longer durations with lower loads	Any duration, provided the BOD loading is less than 100 lbs/day

11.5 Minimum Monitoring Requirements

11.5.1 Protocols

The permit includes new monitoring and reporting protocols that directs the registrant to use DEQ-approved discharge monitoring reports, develop a quality assurance and quality control program, what to do if QA/QC measures are not met, how to take effluent samples, calculate TBELs, and determine compliance with TBELs.

11.5.2 Minimum Monitoring Requirements

As discussed earlier, DEQ has classified seafood processors into different tiers. Monitoring frequencies for Tier 1 and 2 processors has significantly increased. See Schedule B of the permit for details. Tier 1 and 2 processors also have new requirements to monitor for enterococcus when discharging into or near shellfish harvesting areas and temperature. Except for total flow, product processed, and screen inspections (which are all required daily when discharging), monitoring requirements for Tier 3 facilities have been reduced to quarterly. Note that registrants may sample more frequently than the permit requires. Any additional data must be reported as required by Schedule F, condition C6.

11.6 Permit Renewal Monitoring Requirements

To prepare for the renewal of this permit in five years, the registrant must collect additional data as detailed in Table B3 of the permit for pH, temperature, alkalinity, dissolved oxygen, carbonaceous BOD (CBOD), ammonia as N, Total Kjeldahl Nitrogen (TKN), total phosphorus, total zinc, and total selenium.. All tiers are subject to this requirement. The permit requires concurrent sampling of effluent and receiving water, which means effluent and receiving water body samples must be collected within a 2-hour range of one another. Samples of the receiving water body must be taken upstream of the regulatory mixing zone. As stated in the permit, unless otherwise approved by DEQ in writing, the owner or operator must submit to DEQ the information listed in Table 2 and Schedule B, Table B3, of the permit at least 180 days before this permit expires

11.7 Outfall Inspection

DEQ added an outfall inspection requirement for the first and fourth years of permit coverage to ensure that the registrant's outfall functions properly. If the 900-J is administratively extended beyond its expiration date, an outfall inspection is required every 5 years (e.g., 9th year, 14th year). The results from these studies are used by DEQ to ensure that the effluent is properly dispersed into the receiving water body.

11.8 Minimum Reporting Requirements

Table B4 of the permit specifies reporting requirements and due dates.

- Discharge monitoring reports are due the 15th day of the following month and results must be submitted on a DEQ-approved discharge monitoring reports. Unlike the previous permit, monthly reporting is required even when the processor is not operating.
- Concurrent monitoring results for the next permit renewal are due 180 days before the permit expires.
- Outfall inspections are due by Dec. 31 of the year they are conducted.

12. Schedule C: Compliance Schedule

There is no compliance schedule in this permit.

13. Schedule D: Special Conditions

The following special conditions were added to Schedule D of the permit.

13.1 Dilution Study for Tiers 1 and 2

DEQ added a requirement for registrants covered under the 2006 permit to submit results of a mixing zone dilution study to DEQ within two years of registration to the permit. This study is required to verify that the registrant's mixing zone provides the required dilution. Additional information on what DEQ expects in a mixing zone may be found in DEQ's *Regulatory Mixing Zone Internal Management Directive, Part Two: Reviewing Mixing Zone Studies (2013)* at https://www.oregon.gov/deq/Filtered%20Library/RMZIMDpart2.pdf.

13.2 Sanitary Wastes

DEQ added a condition to clarify that this permit does not allow the discharge of sanitary wastes and registrants must discharge all sanitary wastes from sinks, showers, and toilets to a sewage treatment system operated in conformance with DEQ regulation.

13.3 Environmental Supervisor

DEQ added a requirement that the registrant designate an environmental supervisor to coordinate and/or carry out all necessary functions related to maintaining compliance with the 900-J. This person must have access to all information pertaining to the generation of wastewater in all areas of the plant.

13.4 Notification of Non-compliance

DEQ added a reference for the registrant to Schedule F, conditions B6, B7, and D5 that detail required reporting to DEQ of any bypass, upset or other noncompliance in accordance with the notifications provisions in. This is not a new condition; it is a standard requirement of the NPDES permit program.

13.5 Commingled Stormwater

DEQ expanded on the stormwater provision in the 2006 permit to provide additional clarification and direction to the registrant. The registrant may discharge stormwater commingled with process wastewater under this permit if the stormwater is contained, collected, treated, and discharged in accordance with the requirements of this permit. The registrant must:

a. Minimize exposure of manufacturing, processing, and material storage areas, including loading and unloading, disposal, cleaning, maintenance and fixed fueling areas to rain, snow, snowmelt, and runoff to the extent technologically available and economically practicable and achievable in light of best industry practice.

b. Locate materials and activities indoors or protect them with storm resistant covers if stormwater from affected areas discharges to surface waters. Acceptable covers include, but are not limited to, permanent structures such as roofs or buildings and temporary covers such as tarps.

c. Use grading, berming, or curbing to capture, contain and treat co-mingled stormwater with the process wastewater and also to divert the remaining stormwater away from processing areas to prevent stormwater contamination.

13.6 Treatment System Residuals Management

DEQ added provisions to clarify that the registrant must manage treatment system residuals as follows:

a. Discharge of treatment system residuals to waters of the state is prohibited.
b. The use or disposal of all treatment system residuals must be monitored and reported following the provisions in Schedule B.
c. The reuse or disposal of treatment system residuals must be managed in accordance with all applicable federal, state, and local requirements.

This is not a new requirement. Schedule F, condition B8 of the 2006 permit required proper disposal of "removed substances": *Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.* Schedule F, condition B8 also remains in this permit.

13.7 Spill Prevention and Response Plan

In addition to the *Emergency Response and Public Notification Plan* required by Schedule F, condition B7 for bypasses and upsets, which is a standard condition in NPDES permits, DEQ added the requirement that registrants must develop and implement a plan to prevent spills of chemicals, hazardous materials, and wastes and respond to such spills when they occur. The plan must contain the following information:

a. A description of the types of equipment to be used to clean up spills.
b. Proper handling and safety procedures for each type of chemical, hazardous material, and waste.
c. Description and implementation of an education program for employees and contractors on the potential hazards to humans and the environment from spills and/or leaks.
d. A protocol and schedule for making updates to the spill prevention plan and clean up materials at least annually and as changes occur to the types of chemicals and hazardous materials used at the facility, including any changes to waste storage.

The registrant may use a Spill Prevention Control and Countermeasure Plan if it meets the above requirements. The plan must be kept current and maintained onsite. A copy of the plan must be made available to DEQ upon request.

13.8 Operation and Maintenance Protocols

DEQ added provisions to clarify the expectations regarding how and when any treatment systems used to treat effluents registered under this permit are inspected and maintained.

13.9 Required response benchmark exceedances

DEQ added provisions to the proposed permit that explain the steps a registrant must follow when benchmarks are exceeded. This is discussed in more detail in section 10.5.4, p. 38.

14. Schedule E: Pretreatment Activities

There are no pretreatment requirements for this permit.

15. Schedule F: NPDES General Conditions

The general conditions that are applicable to all NPDES permits are included in Schedule F. The general conditions address operation and maintenance, monitoring and recordkeeping, and reporting requirements. These provisions are updated periodically, and incorporated in permits when they are renewed. The special conditions were last updated on July 31, 2016, and are included in the updated 900-J permit.

Appendix A: 2012 and 2018/2020 303(d) Impairments by Water Body for Existing 2006 900-J Registrants

City	Stream Name	River Mile	2012 303(d) Listings (Approved by EPA in December 2018)	2018/2020 303(d) Listings (Pending EPA approval)
ASTORIA, WARRENTION	Columbia River	10-15	Cat 4A[1]: Arsenic; DDE 4,4; Dioxin; Fecal Coliform; PCBs; Total Dissolved Gas	Cat 4A: Arsenic; DDE 4,4; Dioxin; Fecal Coliform; PCBs; Total Dissolved Gas, Temperature
NORTH BEND	Haynes Inlet	2-3	Cat 5[2]: Fecal coliform	Cat 5: Arsenic, Dissolved Oxygen - Year Round, *E. coli*, Fecal coliform, Temperature - Year Round
WARRENTON	Skipanon River	1-2	Cat 5: *E. coli*; Dissolved Oxygen Cat 4A: Fecal coliform	Cat 5: Dissolved Oxygen Spawning and Year Round, Iron Cat 4A: Fecal coliform
CHARLESTON	South Slough	0-1.5	Cat 5: *E. coli*; Fecal coliform; Tissue - soft shell clam - arsenic	Cat 5: Arsenic, Dissolved oxygen - Year Round, E. coli, Fecal coliform, Temperature - Year Round
BAY CITY	Tillamook Bay – Douthy Creek	2	Cat 4A: Fecal coliform	Cat 5: Arsenic, *E. coli* Cat 4A: Temperature, Fecal coliform
WINCHESTER BAY	Winchester Creek	0.5	Cat 5: Fecal coliform; Biocriteria; Tissue - soft shell clam - arsenic	Cat 5: Arsenic, Dissolved Oxygen - Year Round, *E. coli*, Fecal coliform, Temperature - Year Round
NEWPORT	Yaquina River	0-6	Cat 5: Fecal coliform; Temperature; Dissolved Oxygen; Tissue - soft shell clam - arsenic	Cat 5: Aquatic weeds, Arsenic, Temperature, Dissolved Oxygen - Year round

Notes:

[1] Cat 4A = TMDL developed

[2] Cat 5 = TMDL needed

Appendix B: Ammonia Benchmarks

SALTWATER

Ammonia RPA Calculation (2013 Criteria) Revision 1.6

RPA Run Information

Facility Name:	Seafood Processors
DEQ File Number:	900-J
Permit Writer Name:	Feldman, McFetridge, Nomura
Outfall Number:	001
Date of RPA Run:	2/27/2019

RPA Run Notes: This is an assumed RP for Ammonia for seafood processor discharge to a saltwater waterbody

KEY:	--	Intermediate calc.s
* Enter data here	--	Calculated results

Please complete the following General Facility Information

1. Enter Facility Design Flow (MGD)		0.3
2. Do I have dilution values from a mixing		Yes
3. If answered "No" to *Question 2*, then fill in the following table		
Stream Flow: 7Q10	CFS	na
Stream Flow: 30Q5	CFS	na
Stream Flow: 1Q10	CFS	na
% dilution at ZID	%	10%
% dilution at MZ	%	25%
Calculated Dilution Fact.		
Dilution @ ZID		#VALUE!
Dilution @ MZ (7Q10)		#VALUE!
Dilution @ MZ (30Q5)		#VALUE!

4. If answered "Yes" to *Question 2*, then fill in dilution factors from mixing zone study		
Dilution @ ZID (from study)		6
Dilution @ MZ 7Q10 (from study)		11
Dilution @ MZ 30Q5 (from study)		11
5. Is the receiving waterbody fresh or salt water?		Salt
6. If answered "*Salt*" to *Question 5*, then enter salinity		
Ambient Salinity	ppt	34
Effluent Salinity	ppt	5
7. Are Salmonid present? (Yes/No) (Mussels presumed present)		Yes
8. Please enter statistical *Confidence* and *Probability* values (note: defaults already entered)		
Confidence Level	%'ile	99%
Probability Basis	%'ile	95%

Dilution Calculations

Inputs

	ZID	MZ (7Q10)	MZ (30Q5)
Dilution Factors	6.0	11.0	11.0

Upstream Characterization		
Temperature	deg. C	20
pH		8
Alkalinity	mg/L $CaCO_3$	25

Effluent Characterization		
Temperature	deg. C	20
pH		7
Alkalinity	mg/L $CaCO_3$	25

*Calculation of pH of a mixture of two flows based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)
** Selection of alkalinity %ile is based on pH of effluent vs ambient.

Outputs

		ZID	MZ (7Q10)	MZ (30Q5)
Upstream				
pKa		6.4	6.4	6.4
Ionization Fraction		1.0	1.0	1.0
Total Inorganic Carbon	mg/L $CaCO_3$	25.6	25.6	25.6
Effluent				
pKa		6.4	6.4	6.4
Ionization Fraction		0.8	0.8	0.8
Total Inorganic Carbon	mg/L $CaCO_3$	31.0	31.0	31.0
Mixing Zone				
Temperature	deg. C	20.0	20.0	20.0
Alkalinity	mg/L $CaCO_3$	25.0	25.0	25.0
Total Inorganic Carbon	mg/L $CaCO_3$	26.5	26.1	26.1
pKa		6.4	6.4	6.4
pH		7.6	7.7	7.7
Salinity	ppt	29.2	31.4	

Benchmarks

Pollutant Parameter	# of Req's Samples	Waste Load Allocations				Long Term Average					Benchmarks	
		Acute WLA	Chronic WLA (4 day avg.)	Chronic WLA (7Q10)	Chronic WLA (30Q5)	Acute LTA	Chronic LTA (4 day avg.)	Chronic LTA (7Q10)	Chronic LTA (30Q5)	Min. LTA	Max Daily (MDL)	Monthly (AML)
	#/month	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	99%	95%
Ammonia (Freshwater Salmonids)	--	--	--		--	--	--		--	--	--	--
Ammonia (Freshwater, Salmonids absent)	--	--	--		--	--	--		--	--	--	--
Ammonia (Salt Water)	2	14.4		1.6		4.6		0.9		0.9	2.7	1.5

FRESHWATER

Ammonia RPA Calculation (2013 Criteria) Revision 1.6

RPA Run Information

Facility Name:	Seafood Processors
DEQ File Number:	900-J
Permit Writer Name:	Feldman, McFetridge, Nomura
Outfall Number:	001
Date of RPA Run:	2/27/2019
RPA Run Notes: This is an assumed RP for Ammonia for seafood processor discharge to a freshwater waterbody with salmononids present	

KEY:	--	Intermediate calc.s
* Enter data here	--	Calculated results

Please complete the following General Facility Information

1. Enter Facility Design Flow (MGD)		0.3
2. Do I have dilution values from a mixing		Yes
3. If answered "No" to *Question 2*, then fill in the following table		
Stream Flow: 7Q10	CFS	na
Stream Flow: 30Q5	CFS	na
Stream Flow: 1Q10	CFS	na
% dilution at ZID	%	10%
% dilution at MZ	%	25%
Calculated Dilution Fact.		
Dilution @ ZID		#VALUE!
Dilution @ MZ (7Q10)		#VALUE!
Dilution @ MZ (30Q5)		#VALUE!

4. If answered "Yes" to *Question 2*, then fill in dilution factors from mixing zone study		
Dilution @ ZID (from study)		6
Dilution @ MZ 7Q10 (from study)		11
Dilution @ MZ 30Q5 (from study)		11
5. Is the receiving waterbody fresh or salt water?		Fresh
6. If answered "*Salt*" to *Question 5*, then enter salinity		
Ambient Salinity	ppt	na
Effluent Salinity	ppt	na
7. Are Salmonid present? (Yes/No) (Mussels presumed present)		No
8. Please enter statistical *Confidence* and *Probability* values (note: defaults already entered)		
Confidence Level	%'ile	99%
Probability Basis	%'ile	95%

Dilution Calculations

Inputs

		ZID	MZ (7Q10)	MZ (30Q5)
Dilution Factors		6.0	11.0	11.0
Upstream Characterization				
Temperature	deg. C		20	
pH			7	
Alkalinity	mg/L $CaCO_3$		25	
Effluent Characterization				
Temperature	deg. C		20	
pH			7	
Alkalinity	mg/L $CaCO_3$		25	

*Calculation of pH of a mixture of two flows based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)
** Selection of alkalinity %ile is based on pH of effluent vs ambient.

Outputs

		ZID	MZ (7Q10)	MZ (30Q5)
Upstream				
pKa		6.4	6.4	6.4
Ionization Fraction		0.8	0.8	0.8
Total Inorganic Carbon	mg/L $CaCO_3$	31.0	31.0	31.0
Effluent				
pKa		6.4	6.4	6.4
Ionization Fraction		0.8	0.8	0.8
Total Inorganic Carbon	mg/L $CaCO_3$	31.0	31.0	31.0
Mixing Zone				
Temperature	deg. C	20.0	20.0	20.0
Alkalinity	mg/L $CaCO_3$	25.0	25.0	25.0
Total Inorganic Carbon	mg/L $CaCO_3$	31.0	31.0	31.0
pKa		6.4	6.4	6.4
pH		7.0	7.0	7.0
Salinity	ppt	--	--	

Benchmarks

Pollutant Parameter	# of Req's Samples	Waste Load Allocations				Long Term Average					Benchmarks	
		Acute WLA	Chronic WLA (4 day avg.)	Chronic WLA (7Q10)	Chronic WLA (30Q5)	Acute LTA	Chronic LTA (4 day avg.)	Chronic LTA (7Q10)	Chronic LTA (30Q5)	Min. LTA	Max Daily (MDL)	Monthly (AML)
	#/month	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	99%	95%
Ammonia (Freshwater Salmonids)	--	--	--		--	--	--		--	--	--	--
Ammonia (Freshwater, Salmonids absent)	2	100.1	50.9		19.8	32.1	26.8		15.4	15.4	48.0	27.7
Ammonia (Salt Water)	--	--		--		--		--		--	--	--

Appendix C: Chlorine Benchmarks

SALTWATER

RPA Run Information	
Facility Name:	Seafood Processors
DEQ File Number:	900-J
EPA Identification #:	ORG523508
Permit Number:	900-J
Permit Writer Name:	man, McFetridge, Nor
Outfall Number:	001
Determination Date:	enter det. Date
Facility Flow Rate (MGD):	0.3
RPA Run Notes:	
Color Key:	"*" = Enter data
Intermediate Calc.s	"--" = Will
Calculation Results	calculate

* All criteria and effluent limits are in terms of total concentration

Facility Information				
1. Do I have dilution values from a mixing zone study? (Yes/No)				yes
2. Is the receiving waterbody fresh water? (Yes/No)				no
3. If answered "No" to Question 1, then fill in the following table				
Eff. Flow Rate	MGD	N/A	Calculated dilution Factors	
Stream Flow: 7Q10	CFS	N/A	Dilution @ ZID	N/A
Stream Flow: 1Q10	CFS	N/A	Dilution @ MZ	N/A
% dilution at ZID	%	10%		
% dilution at MZ	%	25%		
4. If answered "Yes" to Question #1, then fill in		Dilution @ ZID (from study)		6
		Dilution @ MZ (from study)		11
5. Please enter Water Hardness Data below to reflect critical conditions (values from 25 to 400 mg/l of CaCO3)		Effluent	mg/L $CaCO_3$	25
		Up-stream	mg/L $CaCO_3$	25
		ZID boundary	mg/L $CaCO_3$	25
		MZ boundary	mg/L $CaCO_3$	25
6. Probability basis for WLA Multipliers and Effluent Limits		Probability Basis	%	99%
		Confidence Level	%	95%
		Confidence Level	%	99%

Pollutant Parameter	Analysis req? (Is there RP? Yes/No)		WQ Crit: 1 Hour (CMC)	WQ Crit: 4 Day (CCC)	Ambient Conc.	CV	Compliance Monitoring Req.	Effluent Limit: Monthly	Effluent Limit: Max Daily	Compliance Limit: Monthly	Compliance Limit: Max Daily
	Acute	Chronic	(µg/l)	(µg/l)	(µg/l)	(µg/l)	#/Month	AML (µg/l)	MDL (µg/l)	AML (µg/l)	MDL (µg/l)
Conventional and Nonconventional Pollutants Required to be Tested by Existing Discharges if Expected to be Present (equivalent to Table IV)											
Chlorine, Total Residual	yes	yes	7.5	13	0	0.6	2	25.96737	45	100	100

WLAs	
WLA: Acute	WLA: Chronic
(µg/l)	(µg/l)
45	143

LTAs		
Acute LTA	Chronic LTA	Min. LTA
(µg/l)	(µg/l)	(µg/l)
14.45	75.42	14.45

Calculations							
Sigma	Sigma 4	Sigma N	Acute	Chronic	AML (µg/l)	MDL (µg/l)	
		σ^n	WLA	WLA	LTA	LTA	
0.55451	0.29356	0.40683	0.32102	0.52738	1.7976	3.1151	0.1 mg/L is the assumed detection level for chlorine

FRESHWATER

RPA Run Information	
Facility Name:	Seafood Processors
DEQ File Number:	900-J
EPA Identification #:	ORG523508
Permit Number:	900-J
Permit Writer Name:	man, McFetridge, Nor
Outfall Number:	001
Determination Date:	enter det. Date
Facility Flow Rate (MGD):	0.5
RPA Run Notes:	
Color Key:	"*" = Enter data
Intermediate Calc.s	"--" = Will
Calculation Results	calculate

* All criteria and effluent limits are in terms of total concentration

Facility Information				
1. Do I have dilution values from a mixing zone study? (Yes/No)				Yes
2. Is the receiving waterbody fresh water? (Yes/No)				yes
3. If answered "No" to Question 1, then fill in the following table				
Eff. Flow Rate	MGD	N/A	Calculated dilution Factors	
Stream Flow: 7Q10	CFS	N/A	Dilution @ ZID	N/A
Stream Flow: 1Q10	CFS	N/A	Dilution @ MZ	N/A
% dilution at ZID	%	10%		
% dilution at MZ	%	25%		
4. If answered "Yes" to Question #1, then fill in		Dilution @ ZID (from study)		6
		Dilution @ MZ (from study)		11
5. Please enter Water Hardness Data below to reflect critical conditions (values from 25 to 400 mg/l of CaCO3)		Effluent	mg/L $CaCO_3$	25
		Up-stream	mg/L $CaCO_3$	25
		ZID boundary	mg/L $CaCO_3$	25
		MZ boundary	mg/L $CaCO_3$	25
6. Probability basis for WLA Multipliers and Effluent Limits		Probability Basis	%	99%
		Confidence Level	%	95%
		Confidence Level	%	99%

Pollutant Parameter	Analysis req? (Is there RP? Yes/No)		WQ Crit: 1 Hour (CMC)	WQ Crit: 4 Day (CCC)	Ambient Conc.	CV	Compliance Monitoring Req.	Effluent Limit: Monthly	Effluent Limit: Max Daily	Compliance Limit: Monthly	Compliance Limit: Max Daily
	Acute	Chronic	(µg/l)	(µg/l)	(µg/l)	(µg/l)	#/Month	AML (µg/l)	MDL (µg/l)	AML (µg/l)	MDL (µg/l)
Conventional and Nonconventional Pollutants Required to be Tested by Existing Discharges if Expected to be Present (equivalent to Table IV)											
Chlorine, Total Residual	yes	yes	19	11	0	0.6	2	65.78401	114	0.1	0.1

WLAs	
WLA: Acute	WLA: Chronic
(µg/l)	(µg/l)
114	121

LTAs		
Acute LTA	Chronic LTA	Min. LTA
(µg/l)	(µg/l)	(µg/l)
36.60	63.81	36.60

Calculations							
Sigma	Sigma 4	Sigma N	Acute	Chronic	AML (µg/l)	MDL (µg/l)	
		σ^n	WLA	WLA	LTA	LTA	
0.55451	0.29356	0.40683	0.32102	0.52738	1.7976	3.1151	0.1 mg/L is the assumed detection level for chlorine

Appendix D:
DEQ Issue Paper: Revisions to the Water Quality Standard for Bacteria, Appendix A: Figures Supporting Use Designation (2016)

Appendix A – Figures Supporting Use Designation

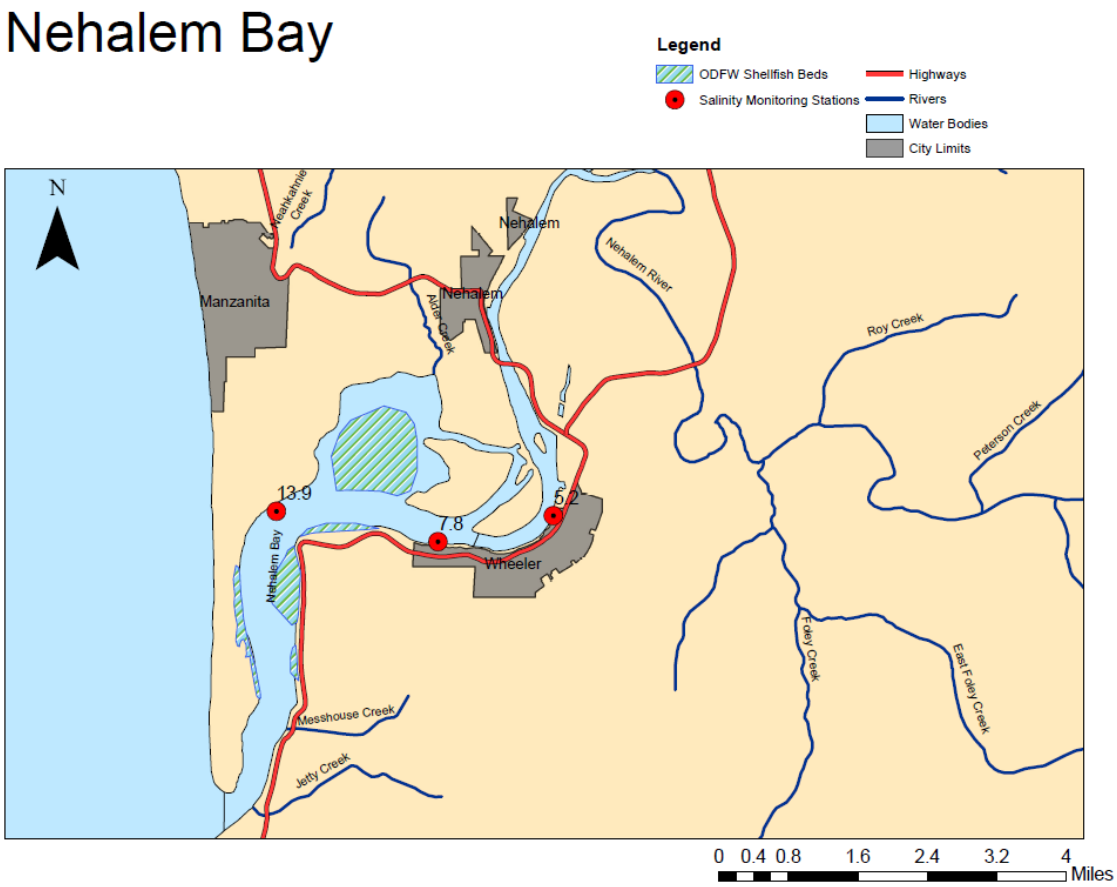


Figure 3. ODFW shellfishing areas and median salinity (ppth) at DEQ monitoring Stations, Nehalem Bay.

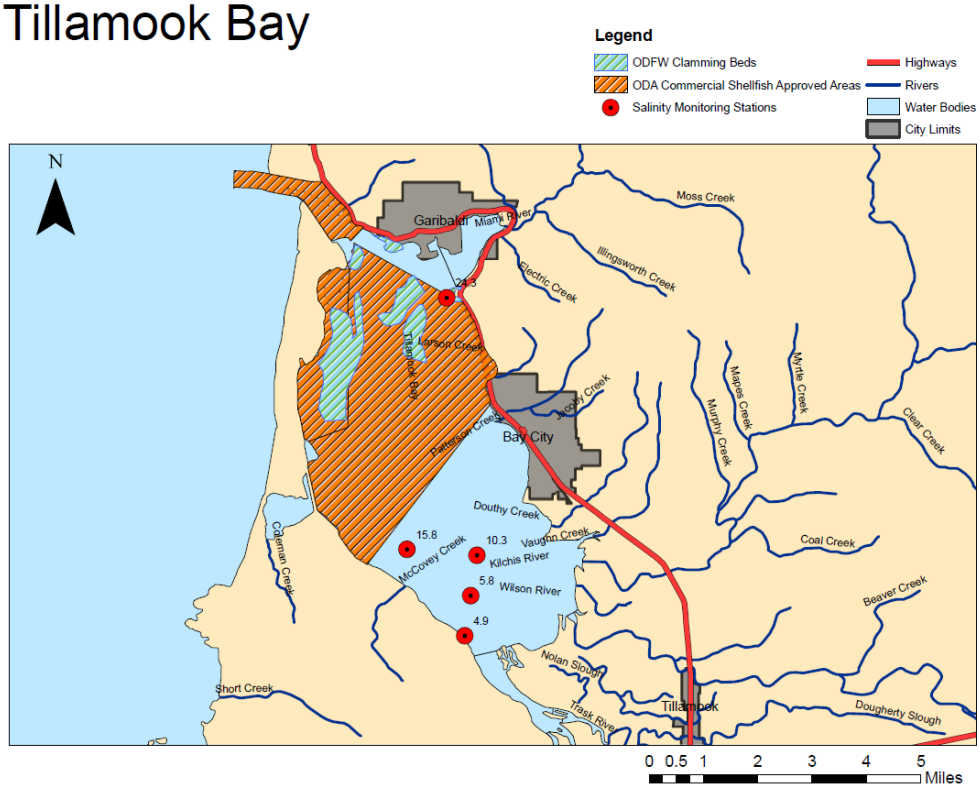


Figure 4. ODFW and ODA shellfishing areas and median salinity (ppth) at DEQ monitoring stations, Tillamook Bay

Figure II.A.2.-14. Distribution of softshell clams (*Mya arenaria*) in Tillamook Bay, Oregon. (See Fig. II.A.2.-8 for areas not surveyed.)

Figure 5. Softshell clam distribution, Tillamook Bay. Source: Hancock, et al. 1979

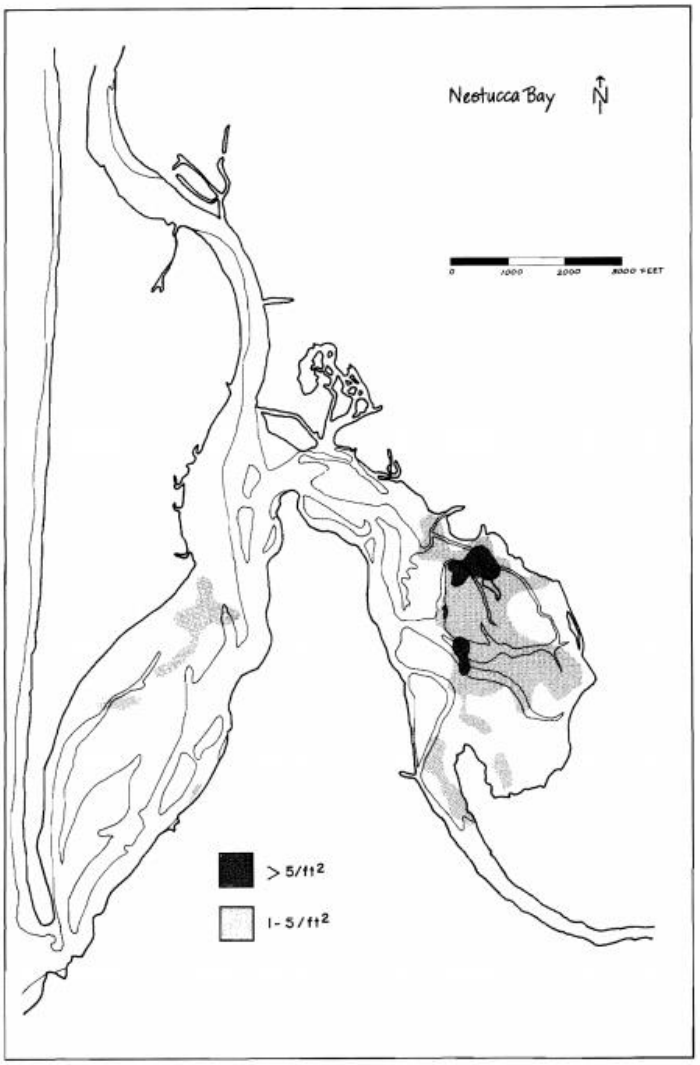


Figure II.A.2.-42. Distribution of softshell clams (*Mya arenaria*) in Nestucca Bay, Oregon. (See Fig. II.A.2.-41 for areas not surveyed.)

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Figure 6. Softshell clam distribution, Nestucca and Little Nestucca Bays. Source: Hancock, et al. 1979

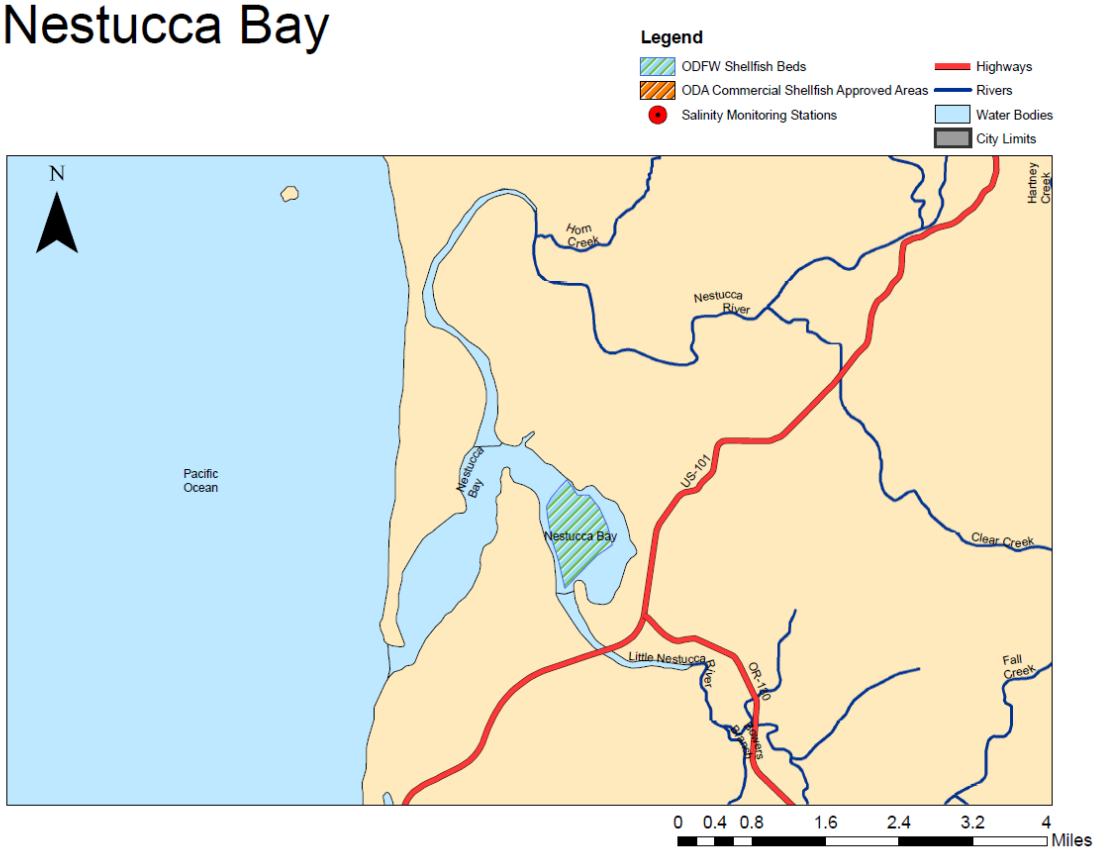

Figure 7. ODFW shellfishing areas, Nestucca Bay.

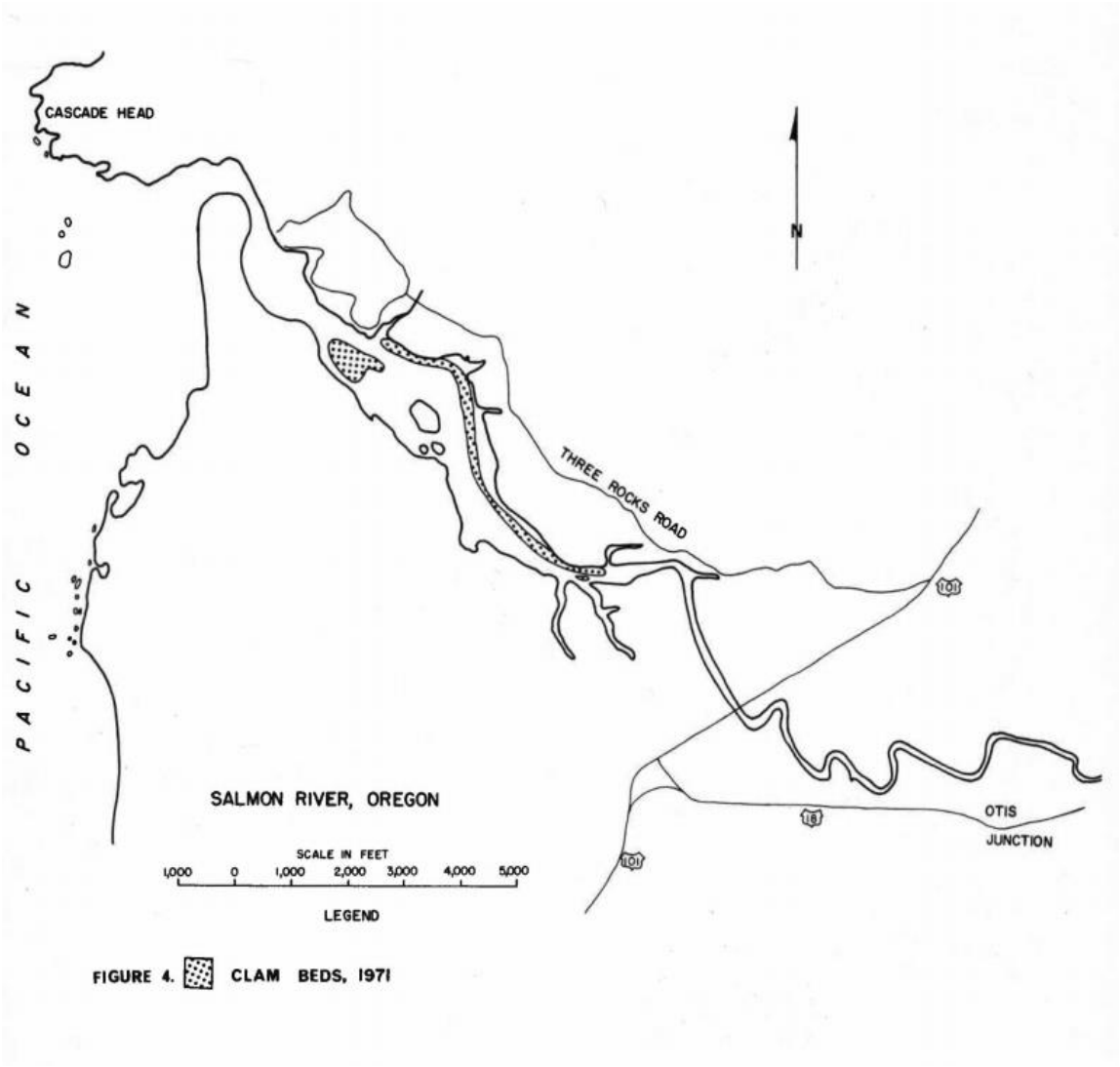

Figure 8. Clam beds, Salmon River Estuary. Source: Gaumer, et. al. 1973.

Figure 9. ODFW shellfishing areas, Siletz Bay.

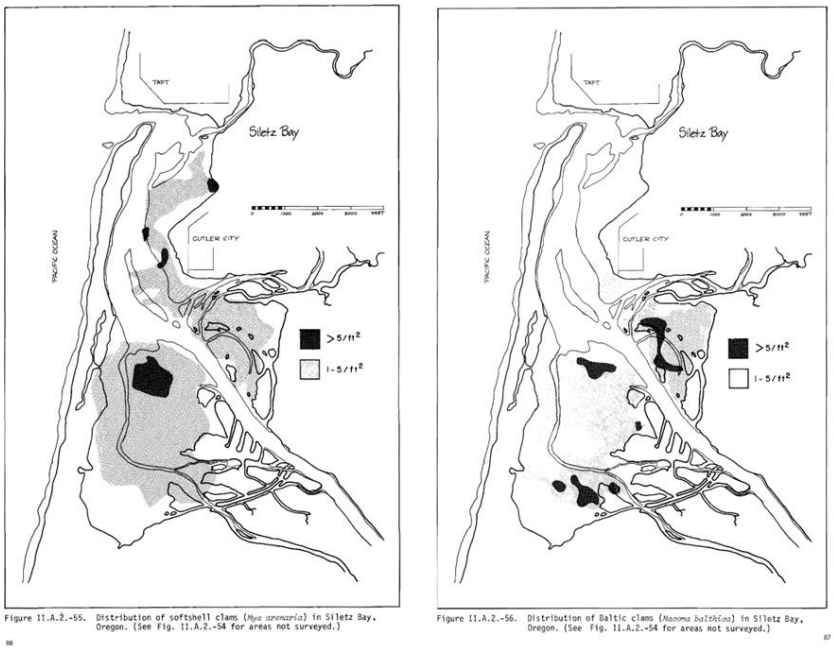

Figure II.A.2.-55. Distribution of softshell clams (*Mya arenaria*) in Siletz Bay, Oregon. (See Fig. II.A.2.-54 for areas not surveyed.)

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Figure II.A.2.-56. Distribution of Baltic clams (*Macoma balthica*) in Siletz Bay, Oregon. (See Fig. II.A.2.-54 for areas not surveyed.)

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Figure 10. Softshell Clams and Baltic Clam distribution, Siletz Bay. Source: Hancock, et al. (1979).

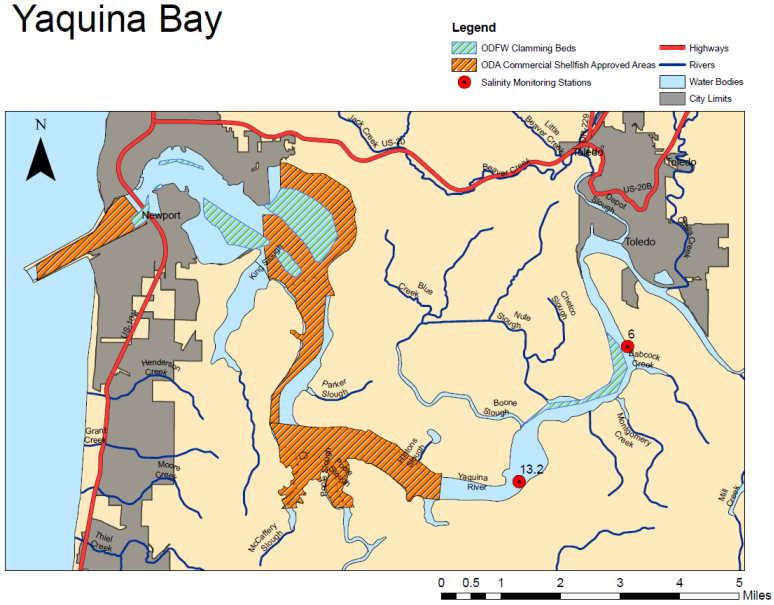

Figure 11. ODFW and ODA shellfishing areas and median salinity (ppth) at DEQ monitoring stations, Yaquina Bay

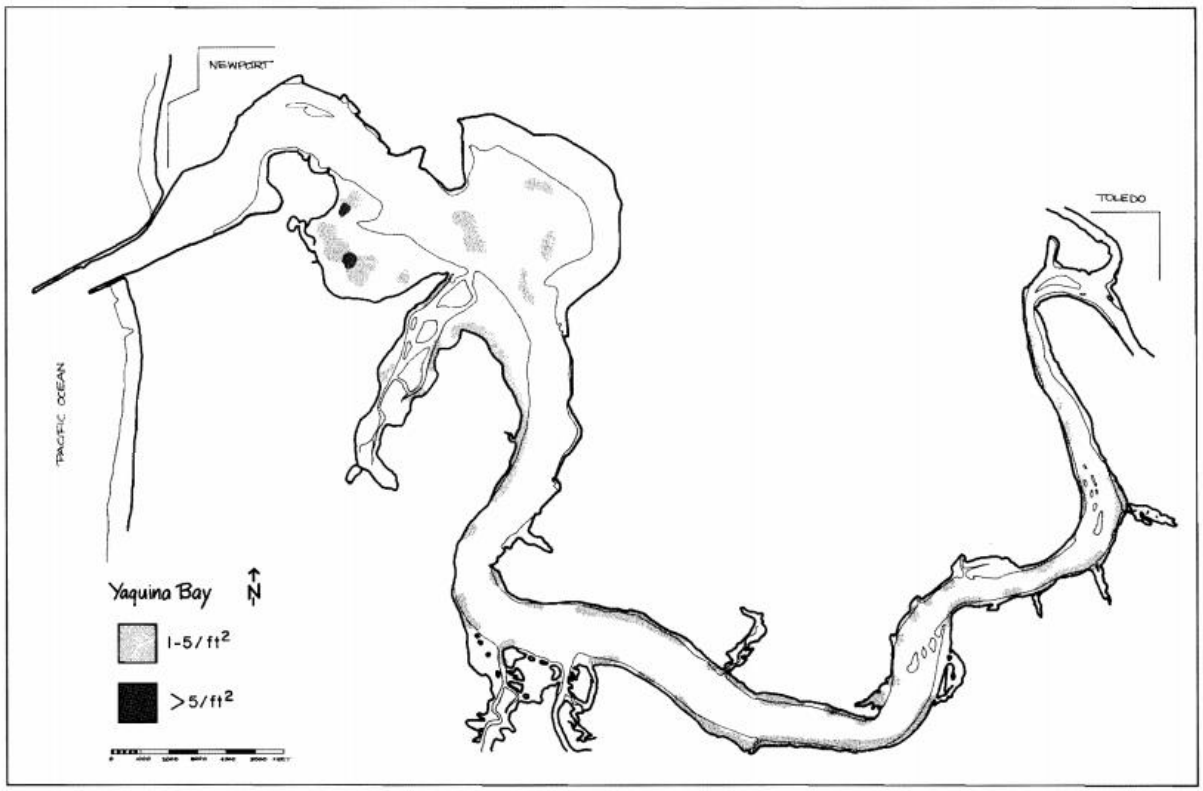

Figure II.A.2.-68. Distribution of softshell clams (*Mya arenaria*) in Yaquina Bay, Oregon. (See Fig. II.A.2.-62 for areas not surveyed.)

Figure 12. Softshell clam distribution, Yaquina Bay (Hancock, et al. 1979)

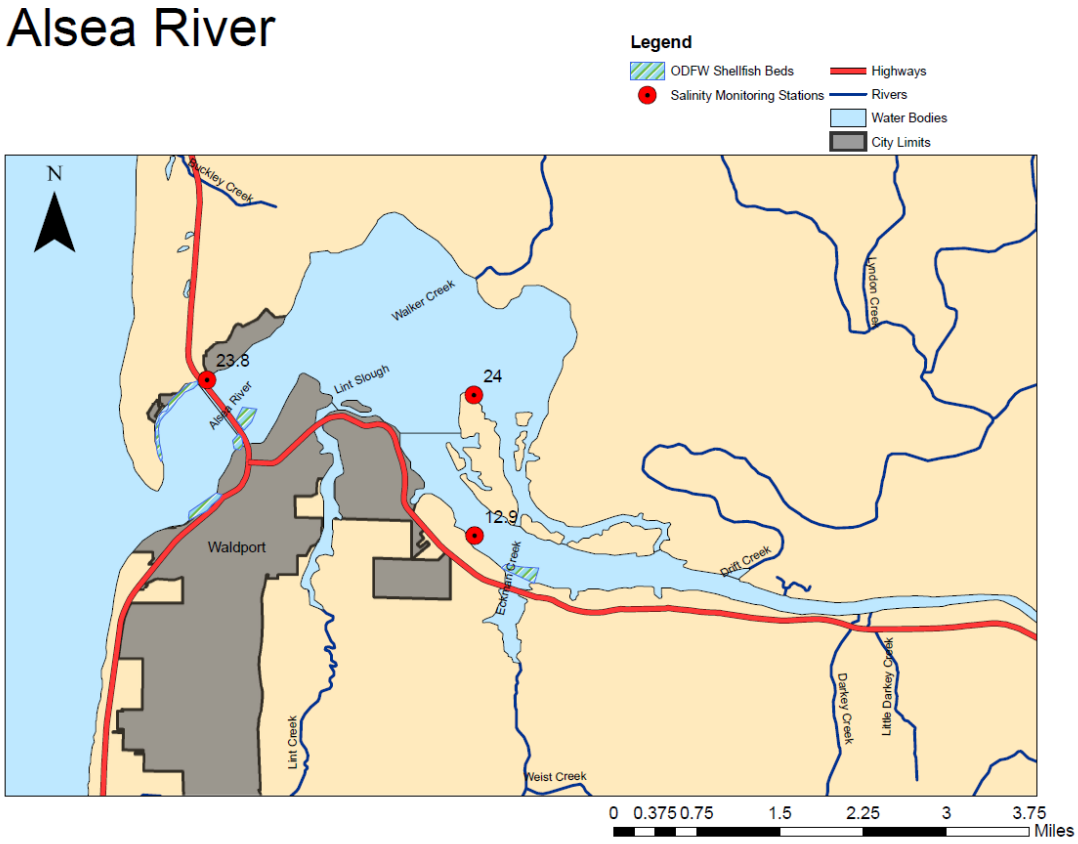

Figure 13. ODFW shellfishing areas and median salinity (ppth) at DEQ monitoring stations, Alsea Bay.

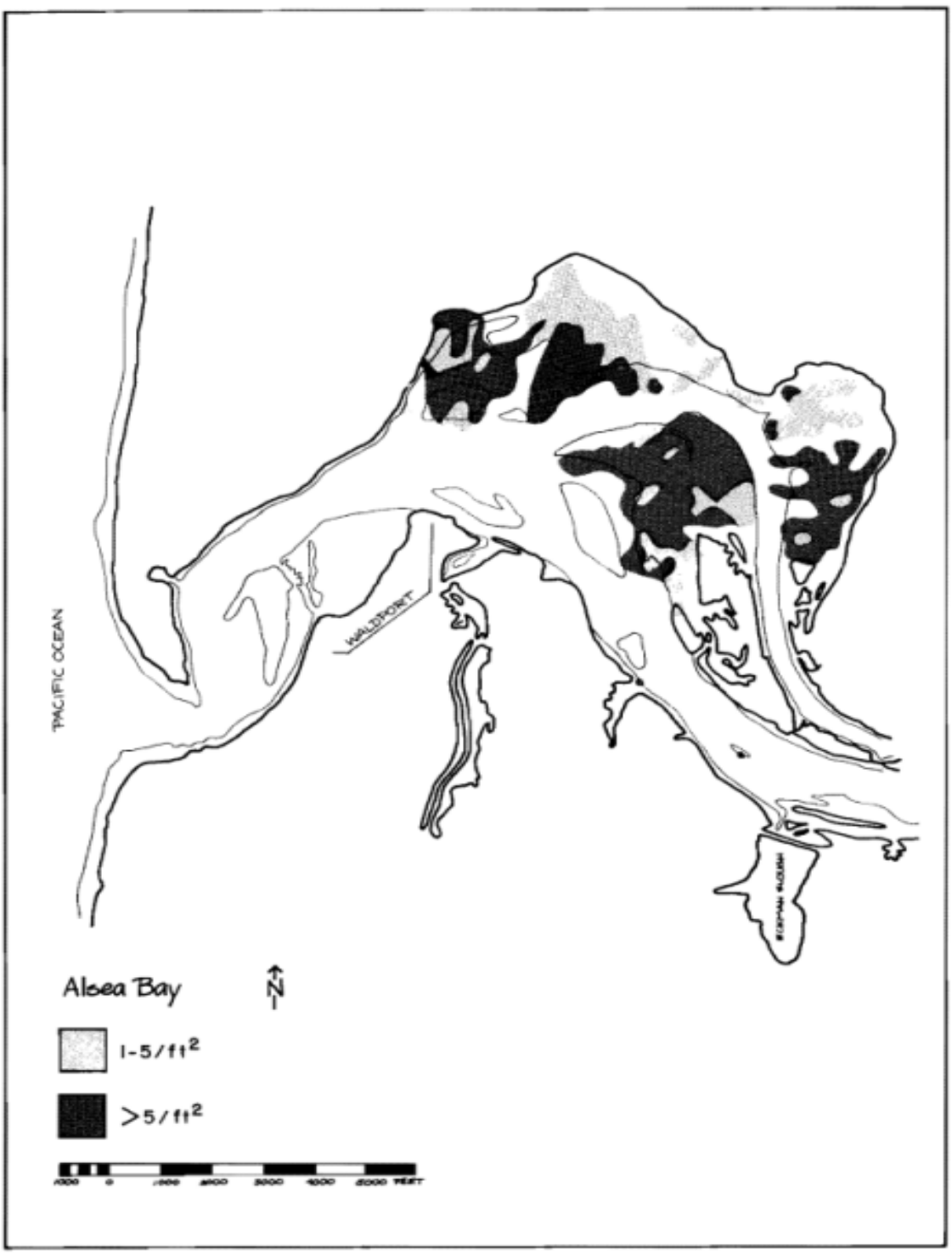

Figure II.A.2.-80. Distribution of softshell clams (*Mya arenaria*) and California softshells (*Cryptomya californica*) in Alsea Bay, Oregon. (See Fig. II.A.2.-76 for areas not surveyed.)

Figure 14. Softshell clams and California softshell clam distribution, Alsea Bay. Source: Hancock, et al. (1979)

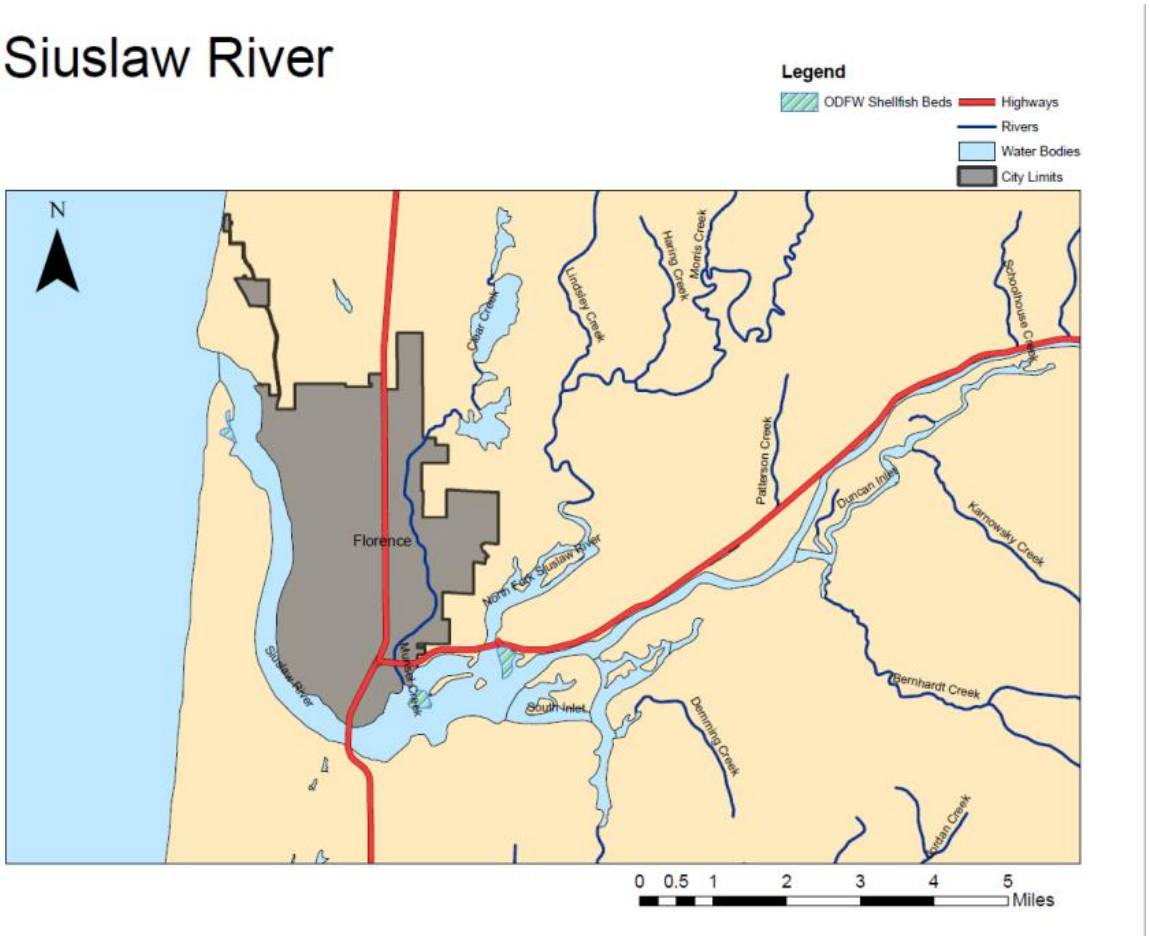

Figure 15. ODFW shellfishing areas, Siuslaw River.

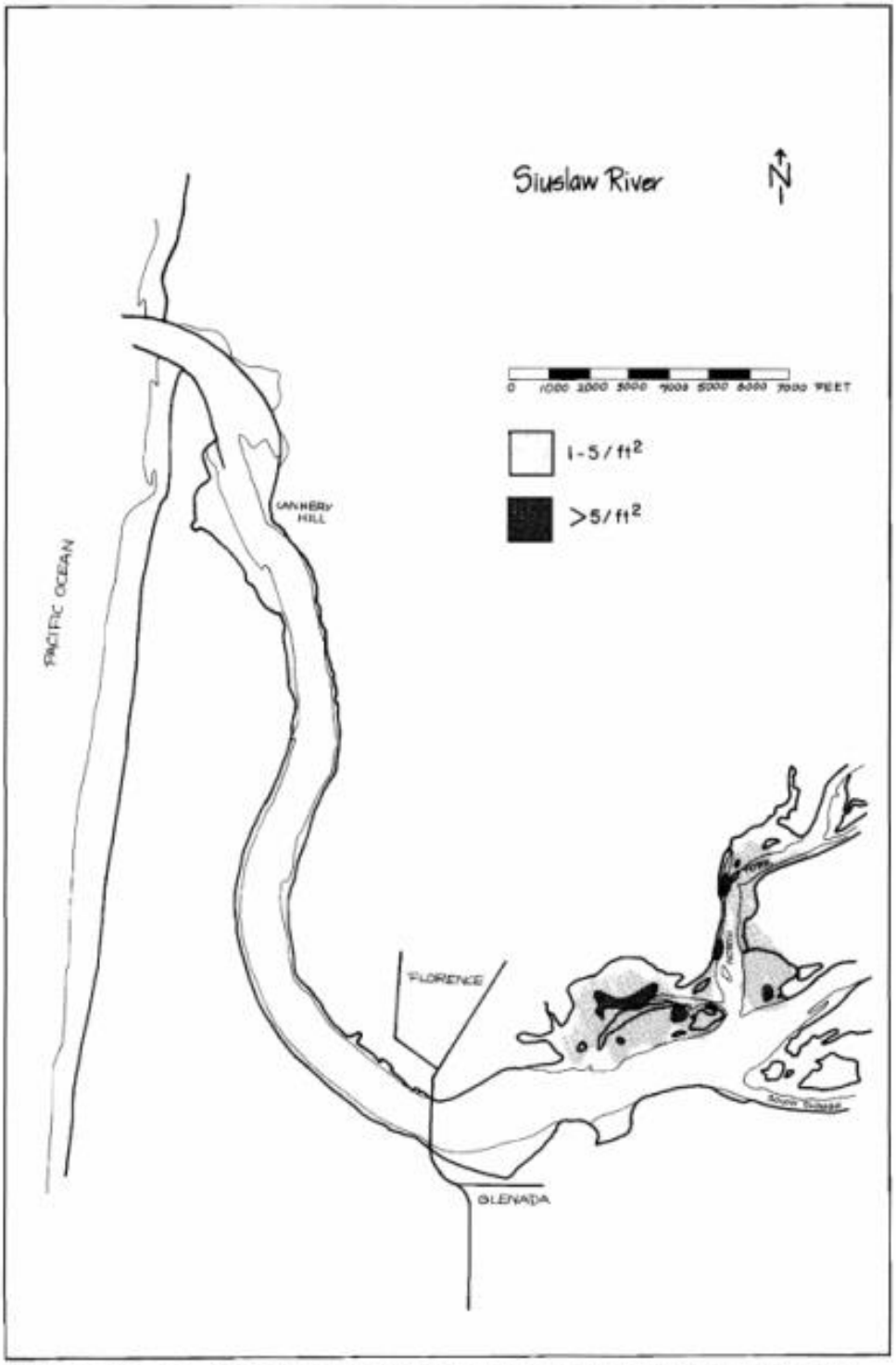

Figure II.A.2.-88. Distribution of softshell clams (*Mya arenaria*) in the Siuslaw River, Oregon. (See Fig. II.A.2.-85 for areas not surveyed.)

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Figure 16. Softshell clam distribution, Siuslaw River Estuary. Source: Hancock, et al. (1979).

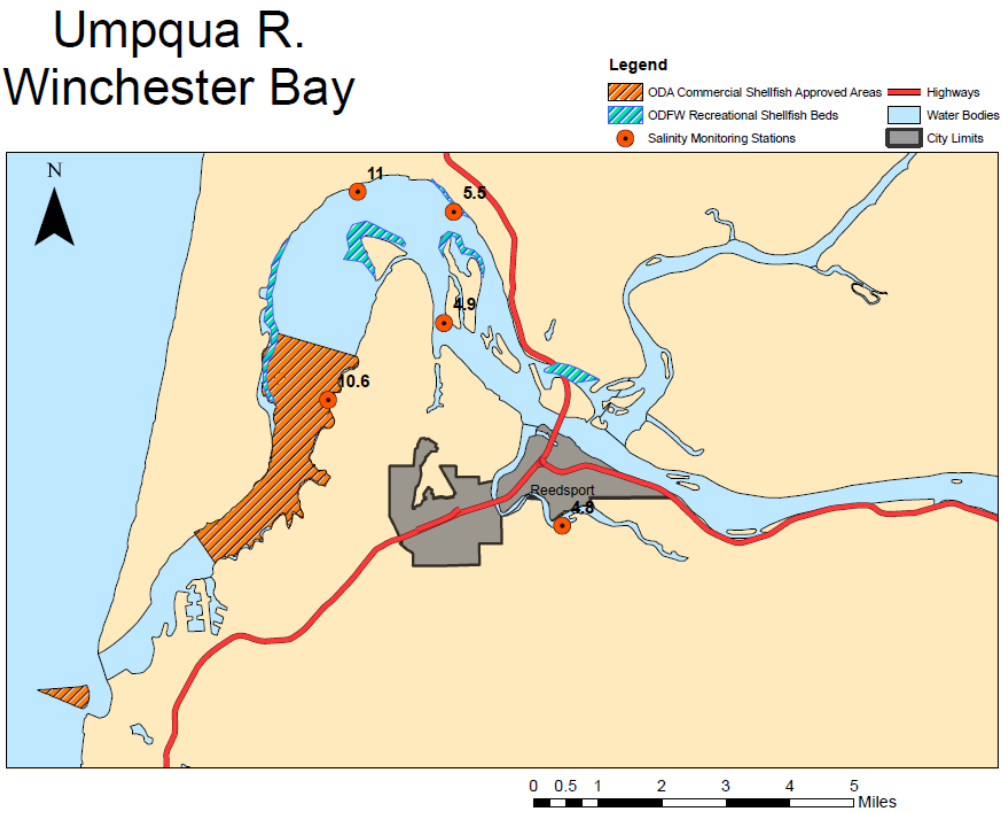

Figure 17. ODFW and ODA shellfishing areas and median salinity (ppth) at DEQ monitoring stations, Umpqua River/Winchester Bay.

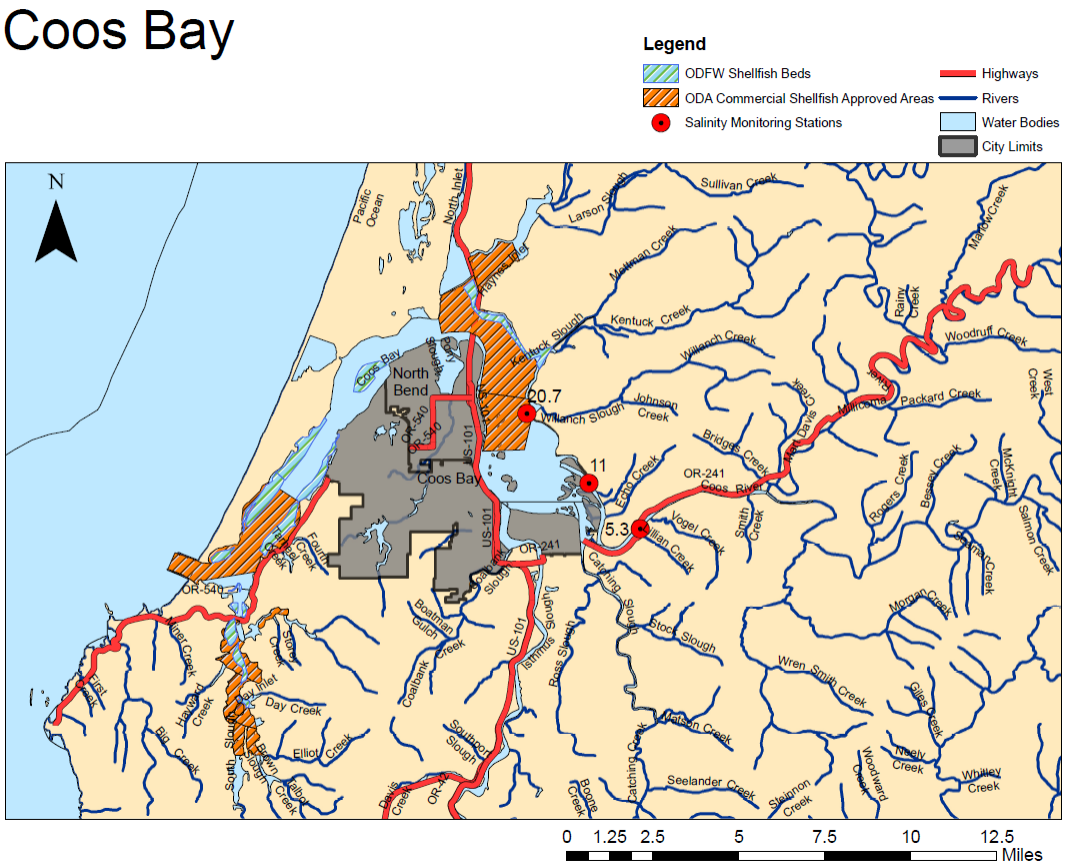

Figure 18. Accessible shellfish areas, ODA commercial shellfish approved areas and median salinity (ppth) at DEQ monitoring stations, Coos Bay.

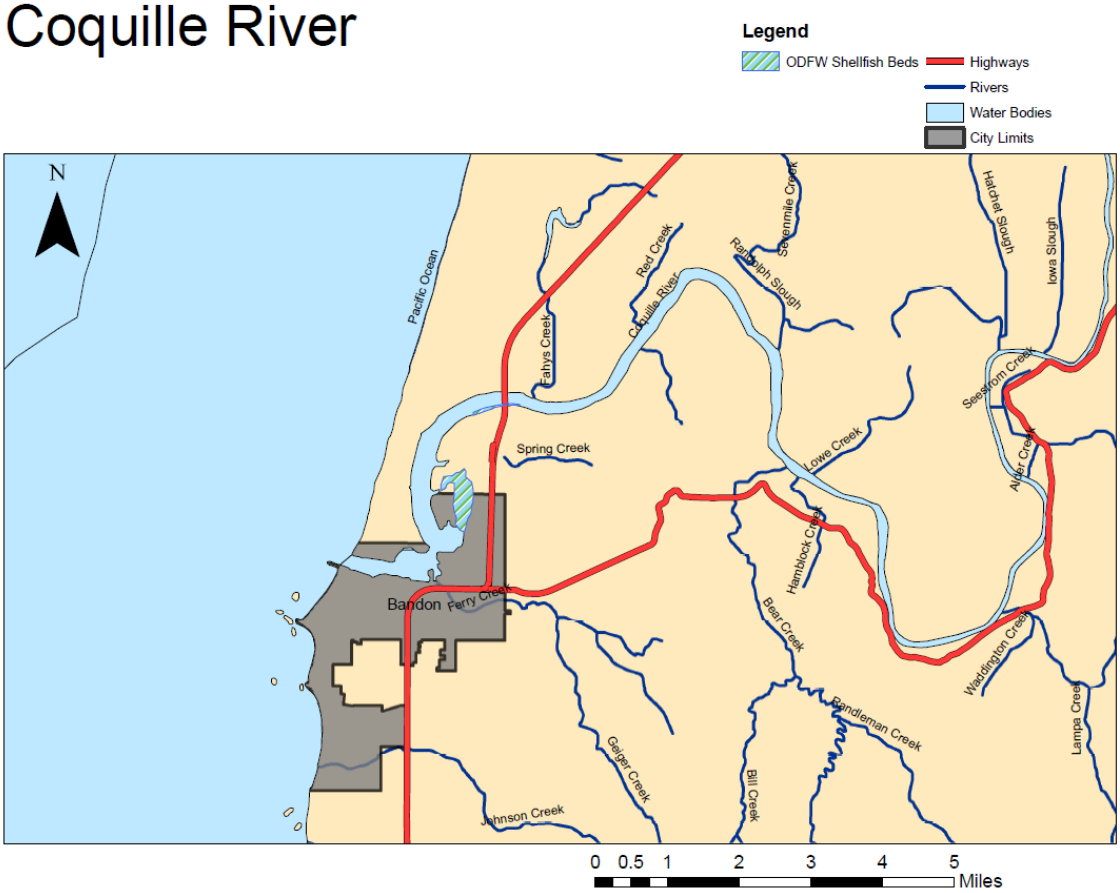

Figure 19. ODFW shellfishing areas, Coquille River Estuary