Industry Biotoxin Sample Protocol

INTRODUCTION

The following field sampling protocol is required for analysis of paralytic shellfish poisoning (PSP or saxitoxin), amnesic shellfish poisoning (ASP or domoic acid) and any other marine biotoxins the Department of Marine Resources (DMR) identifies as necessary to protect public health. Because a preservative cannot be used at the time of sample collection, it is imperative that the field collectors follow established protocols to ensure the integrity of each sample. Failure to follow the established protocols will result in an invalid sample and appropriate management action will be taken pending submission of a new sample.

FIELD SAMPLING

A biotoxin sample consists of a single species of bivalve shellfish (mussels, oysters, clams, etc.) collected randomly from the sampling site.

- Each sample will include a **minimum of 12-20 live animals**; this provides adequate material for all analyses.
- A representative sample of intended market product is required; do not collect only very large or very small animals: this may provide misleading information on the presence or absence of toxin and not represent the true risk to the consuming public.

SAMPLE COLLECTION: PHYTOPLANKTON WATER SAMPLES

Label the 50mL tube with sample location, date, and time. Fill the spray bottle by filtering seawater from the collection site through the nylon mesh sieve. Fill bucket to the 5L mark with surf water and pour into the sieve making sure all water goes through the funnel and into the sieve. Repeat for a total of 10 filtered liters. Attach the 50mL tube to the funnel. Once all seawater has drained from the sieve, flip the sieve upside down on top of funnel/centrifuge tube. Use the mist spray bottle to spray the backside of the sieve allowing everything captured on the mesh to drain through the funnel and into the tube. Fill the tube to the 15mL line. Cap the tube and put it in a cooler but not directly on ice stored at less than 10°C until it is picked up by DMR staff. Note the location, date, and time; and write it on the field sheet.

SAMPLE COLLECTION: LIVE SAMPLES

1. **Collect shellfish**: place in plastic sample bags (provided at drop locations or by DMR staff) and identify the sample by writing on the bag with a permanent marker the following information: **Location ID/Lease Site**, **Collection Date, Collection Time, Type of Shellfish (mussels, scallop, etc.).**

2. **Refrigerate samples immediately**: place samples under refrigeration and/or always keep the shellfish samples shaded and well iced**. The samples must be alive**

and kept under 10° C (50° F) until processing. Transport to a DMR designated drop location or processing lab is required on the **same day as harvest**.

3. **Fill out field sheet**: provide the required information (date, time, location, species, #animals, and comments) including your name and telephone number so we can contact you if necessary. These field sheets can be downloaded from the DMR website: http://www.maine.gov/dmr/shellfish-sanitation-management/programs/biotoxinmonitoring.html

SAMPLE COLLECTION: SHUCKED SAMPLES (SCALLOP ONLY)

This protocol is used only for scallop samples and in coordination with DMR approved private testing laboratories. See the list of approved regulatory testing facilities at: http://www.maine.gov/dmr/shellfish-sanitation-management/programs/biotoxinmonitoring.html. Training and authorization by DMR can be requested through the MOU process which is required for all scallop aquaculture marketing product other than the adductor muscle only.

- Thoroughly clean the outside of shellfish with water.
- Open shell by cutting the adductor muscle(s). Do not use heat or anesthetic before opening shell. **Cut carefully to avoid damage to body of mollusk**.
- Rinse the opened shellfish to remove sand or other foreign materials if needed.
- Drain off excess liquid. Remove all contents including meat and viscera (guts) from shell without damaging tissue.
- Drain shucked contents on a **#10 mesh sieve** without layering for five (5) minutes.
- Place in plastic sample bags (provided at drop locations or by DMR staff) and with a permanent marker, write on the lower third of the bag (this helps us to read the label after the top has been tied up) **Location ID/Lease Site**, **Collection Date, Collection Time, Type of Shellfish (e.g. scallop).** Do not overfill the bag; be sure to leave an air space to accommodate expansion upon freezing.
- Place shucked sample in a cooler with a cooler thermometer and keep the sample **under 10° C (50° F) until frozen. Freeze sample within six hours**; ensure that sample is frozen prior to transport to laboratory.

TRANSPORT TO DROP/PICK-UP LOCATIONS:

Sample pick up locations will be established by region and weekly pick-ups by DMR will generally occur from May 1st -August 31st (details are specified in individual **MOU requirements**), details need to be coordinated with DMR. Drop off/pick-up location and time will be pre-scheduled for the entire season**. If a scheduled drop off time is missed by industry it will be their responsibility to coordinate and communicate the delivery of the sample(s) to a DMR facility; no drop off/pick up locations can be used.** If a missed or delayed sampling occurs in a high-risk area with a high-risk species this may result in a precautionary closure until the sample is received and analyzed.

Upon delivery to the drop off/pick-up location, drop the samples in an agreed upon temperature controlled location and fill out the chain of custody on the field sheet noting **drop location, date, time and temperature (cooler thermometer, walk-in cooler or DMR refrigerator)**. Be sure to leave the field sheet with the sample. If using a private laboratory, arrangements should be made directly with that laboratory (please note a separate MOU is required for use of private labs).

SAMPLE RESULTS AND CLOSURES

Industry samples of high-risk species in high-risk areas will be prioritized with the goal of having results reported by 5pm the day following sample collection. DMR will make closures at levels below quarantine (e.g. 60µg/100g STX for PSP or 15ppm for ASP) according to the high-risk species/high-risk area document unless industry coordinates and pays for additional sampling and results permit them to remain open. DMR may make precautionary closures at levels below the thresholds on the high-risk species/high-risk area document at its discretion when data indicate that toxicity is likely to increase very rapidly. Phytoplankton counts and historical data guide this risk analysis. In the event of a precautionary closure, the following week's scheduled sample may be able to reopen the MOU location.

FOR FURTHER QUESTIONS PLEASE CONTACT

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