CHAPTER 3

Sample Receipt and Laboratory Tracking

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I. Introduction

Laboratory tracking is an important component of Quality Control because it ensures proper sample identification and accuracy in reported test results. This chapter describes the procedures required to retain sample identity and maintain quality assurance throughout the laboratory testing procedures.

II. Initial Documentation During Collection

All samples collected for the Survey will have a record of collection beginning at the time of collection. The record will describe the details of the collection process, as well as, the collector and their agency or affiliation. The collector will be identified sufficiently that any diagnostician at the receiving laboratory is able to contact that person if necessary.

III. Laboratory Case History Number

All samples will receive a unique identifying number or code upon receipt into the laboratory (in this document referred to as "case history number"). The case history number will be recorded on every sample and all subsequent paperwork generated in the laboratory. Labeling of all materials must be sufficient that any other diagnostician can identify the sample and its significance (see example Case History Record and Chain of Custody Form in Appendices
A and B).

IV. Chain of Custody

The location of any sample must be determinable at any time. This is best accomplished by having a chain-of-custody record with all samples. As a person takes possession of any samples, they will mark the date of possession, their printed name, and signature on the next available space on the chain-of-custody record. Emphasis should be placed on the requirement for fixed responsibility upon a particular person for the care, custody, processing, and storage of all samples. This responsibility is initially placed upon the sample collector.

V. Designated Storage Areas

Storage facilities for samples will be determined for each laboratory. Such facilities include refrigerators, freezers, and incubators as appropriate (see sample-specific storage suggestions below). A list of all storage facilities used in a laboratory will be maintained in the lab and available to all responsible parties. The specific storage area used to store specific samples must be indicated in the main case history record (check-in sheet) and updated as samples are moved within the laboratory. The disposition of samples must be recorded from the time of sample check-in until the time that the samples are destroyed.

VI. Sample Received Through a Third Party

Sample receipt through a third party is of utmost importance. The biologist who is the contact for each case should be notified immediately upon receipt of samples in the lab. That person is then responsible for unpacking, examining the samples, and notifying others what processing needs to be done on the samples. Samples must be properly stored to ensure pathogen viability. Samples should be checked in as soon as practical after they are received in the building, and should be completed before moving onto another task.

VII. Sample Receipt

Sample containers whether received in person, via U.S. Mail, Federal Express or other commercial carriers are all treated alike. If there is an address slip on the container (for instance, a Federal Express slip) for the current shipment, that tag is saved and marked with the case history number. If more than one container is received at a time, they are opened one at a time, and all the samples from one container properly put away before the next container is opened. This is to ensure that there is no opportunity for cross contamination of samples received from different locations. If it is clear that multiple containers are from the same site, they can be opened at the same time. All written information contained with the samples needs to be saved and filed with other case history documents. Each sheet of information must be marked with the Case History Number.

VIII. Sample Check-In

The case history number should be a unique number assigned to each case. One way to create a unique numbering system is to record the fiscal year with the number in succession from the previous case assigned from a logbook. The following is a list of minimum information that must be included on the Submission Form and/or the case history or check-in form for the Survey:

1. Date - The date samples are received at the Laboratory and the date collected
2. Case History Number - Assigned when samples are received.
3. Sample collection site.
4. Identification of the sample collector & running chain-of-custody.
5. Species – one Submission Form for each species sampled.
6. Number of fish sampled (per species if multiple species were collected).
7. Type and number of samples: Count the number of samples to ensure that the number reported on the sample collection form agrees with what is actually in the shipping container. Note any discrepancies or specific information about the shipment. Also, note if/how samples are pooled for each specific assay to be performed.
8. Latitude and longitude of collection site.
9. County of collection site.
10. Tests performed and results.

The sample numbers and types must be reconciled to keep proper chain of custody and to ensure that the reporting of the results is accurate. If sample containers (e.g., virology tubes) have leaked in transit, that must be noted, and the number still available for processing recorded. Even if the proper number were collected, obviously a broken tube will result in fewer fish actually being tested, and that is the correct number reporting.

IX. Sample Storage

After the reports and the samples are reconciled, the samples are distributed in the lab as appropriate. Processing of samples will be done according to Manual procedures.

Slants for bacteriology

Each rack of slants is surface-disinfected, and then labeled with the case history number, date, and initials of the person who checked the samples in, and placed in the appropriate incubator.

Virology samples-K/S, WF, WV, OF, other

Virology samples will generally arrive in whirlpak bags, which should be within a larger Ziploc bag. The larger bag should be surface disinfected, and the case history number and date received recorded on label and then stored until processing.

If they are loose in the container, use a new Ziploc, record the case history number and date received on the outside, and store in assigned sample refrigerator until processing. Viral samples must be processed within 48 hours and plated on cell cultures within 72 hours from collection to ensure optimum sample quality for virus detection.

ELISA samples

ELISA samples can be processed immediately and stored frozen (-70°C) until complete analysis is completed. If samples cannot be processed immediately, they can be refrigerated and processed within 24 hours. If unable to process within 24 hours, unprocessed samples should be frozen (-70°C) and stored until a later date.

PCR samples

PCR samples are frozen (-70°C) if they cannot be immediately processed. It is important to store PCR samples separately from areas of the laboratory used for DNA extraction, amplification, and storage of specific PCR primers. See Chapter 9 -Corroborative Testing of Parasites by PCR, for a full description of designated work and storage areas for PCR.

Heads and/or gill arches for parasitology

Heads are usually received in a plastic Ziploc back. The bags are surface disinfected with 70% isopropyl alcohol, labeled with the case history number, initials, and date, and frozen (-70°C). If they can be processed the following day, they can be refrigerated overnight.

Heads may be halved during processing to create an archive tissue in addition to the tissue being tested by Pepsin-Trypsin Digest. This can be done upon receipt of samples or at a later date.

Intestinal Tracts for parasitology

Gastrointestinal tracts will be kept in physiological saline in the refrigerator until they can be examined (within 24-48 h) for presence of *Ceratomyxa shasta* and/or *Bothriocephalus acheilognathi*, as appropriate. If samples cannot be processed within 24-48 hours, they can be frozen and examined at a later time.

Other samples

If other samples are received (e.g., tissues preserved in Neutral Buffered Formalin or Davidson's Fixative) for other types of processing, notify the appropriate person to process them.

X. Notification of Laboratory Personnel

The person primarily responsible for each area of testing should be informed immediately of sample arrival. In that person's absence, their designated alternate should be notified. When each individual

takes possession of any samples, he or she should initial and date the case history record to that effect. From that point until that person both completes testing and destroys the samples or until another staff member takes possession, the responsible party must be aware of the exact location and disposition of the samples. He or she is also responsible for noting the final disposition (discarded, archived, etc.) of the samples they are responsible for.

XI. Data Sheets / Worksheets

Individual datasheets or worksheets of testing performed are maintained differently in each laboratory. For each major division of work, all procedures performed, their dates, and the initials of the diagnostician should be noted. The main case history record must contain records of the logs kept for each procedure (See Appendix A for example forms).

Appendix 3.A – Fish Health Center Case History Record

CASE #:_____ **DATE REC:**_____ **REC BY:**_____

FACILITY:_____ **STATE:**_____

Type: ☐ **NFH** ☐ **SFH** ☐ **TFH** ☐ **WFS** ☐ **FERAL** ☐ **CFH**

☐ **OTHER:**_____

SERVICE:

Type: ☐**Complete** ☐**Virology** ☐**Bacteriology** ☐**Diagnostic**

☐**OTHER:**_____

FISH SPECIES:

1)_____ **2)**_____ **3)**_____ **4)**_____

5)_____ **6)**_____ **7)**_____ **8)**_____

MEMO:_____

_____

_____

TYPE & NUMBER OF SAMPLES:

_____

_____

_____

_____

_____

_____

_____

_____

ALL DIAGNOSTICIANS NOTIFIED: **Initials**_____

Possession Assumed/Initials:

☐**Virology**_____ ☐**Bacteriology**_____ ☐**Parasitology**_____ ☐**DFAT**_____

☐**ELISA**_____ ☐**PCR**_____ ☐**Other**_____

LABORATORY FINDINGS:

☐ **VIROLOGY:**_____

_____

_____

Completed/Date/Initials:_____ **Sample Disposition:**_____

☐**BACTERIOLOGY:**_____

_____

_____

Completed/Date/Initials:_____**Sample Disposition:**_____

☐**PARASITOLOGY/plankton centrifuge, digest, PCR:**_____

_____

_____

Completed/Date/Initials:_____**Sample Disposition:**_____

☐**(BKD)R. Salmoninarum/DFAT:**

ELISA:

PCR:

Completed/Date/Initials:_____**Sample Disposition:**

Results and Recommendations (if applicable):_____

_____

_____

Appendix 3.B - Chain of Custody Form

U.S. Fish & Wildlife Service
Wild Fish Health Survey
Chain of Custody Record

Source of Samples____
Case History Number (to be filled in by receiving lab)______________________

FROM: (print name, agency) TO: (print name, agency)	RELEASE SIGNATURE: RECEIPT SIGNATURE:	RELEASE DATE: RECEIPT DATE:	DELIVERED VIA: ☐ U.S. Mail ☐ Fed Ex ☐ UPS ☐ In person ☐ Other:
FROM: (print name, agency) TO: (print name, agency)	RELEASE SIGNATURE: RECEIPT SIGNATURE:	RELEASE DATE: RECEIPT DATE:	DELIVERED VIA: ☐ U.S. Mail ☐ Fed Ex ☐ UPS ☐ In person ☐ Other:
FROM: (print name, agency) TO: (print name, agency)	RELEASE SIGNATURE: RECEIPT SIGNATURE:	RELEASE DATE: RECEIPT DATE:	DELIVERED VIA: ☐ U.S. Mail ☐ Fed Ex ☐ UPS ☐ In person ☐ Other:

☐ **Continuation of Chain-of-Custody on Further Sheets**