



# Technical Safety



## RADIATION PROCEDURES MANUAL Procedure Cover Sheet

Procedure Title: Chain of Custody for Bioassay Urinalysis Samples

Procedure Number: TSO-08-15-REV 0

Effective Date: September 1, 2008

Approved By:  Date: 27 July, 2009  
Technical Safety Office Director



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## A. INTRODUCTION

Although the emphasis of radiation protection is primarily on prevention of exposures, measurement and evaluation of exposures is also necessary. In vitro (analysis of material excreted from the body) measurement of radioactive material in the body through urinalysis is an important tool for monitoring and evaluating internal exposures. It is, therefore, important to assure the integrity of these samples through the proper use of the chain of custody (CoC).

## B. PURPOSE

The purpose of this procedure is to:

1. Assure that each sample is properly labeled.
2. Assure that each sample has a CoC seal.
3. Assure that the CoC record is properly filled out.
4. Assure that each sample is logged into the sample tracking worksheet.
5. Assure that each sample has its own unique sample number.

## C. REQUIRED MATERIAL(S)

Sample(s) with appropriate CoC forms  
Marking pen  
Writing pen  
Computer with access to tsoshare

## D. PROCEDURE

Each individual urine sample is to have its own specific CoC. If there are multiple samples from the same individual, multiple CoCs are to be filled out. The CoC record is to follow the sample from its creation to its destruction. It is therefore important that the following procedure be followed by the generator of these samples:

1. Fill out the name, e-mail address, department, phone number, and permanent mailing address for the individual providing the sample under the generator information section of the CoC.
2. Fill out the sample volume, date collected, time collected, and any other pertinent description of the sample in the sample information section of the CoC.
3. Assign the sample a unique, sequential IAC number.  
NOTE: The IAC number is to be in this form:  
IAC – (individual's initials) – 0001
4. Place a CoC seal on the container that is connected to both the lid and the bottle to ensure that if the lid is opened it will break this seal.
5. Sign and date the CoC seal.
6. Place a label on the bottle and enter the individual's name, the IAC number, and the date and time collected.
7. Return the sample and the CoC to the Technical Safety Office (TSO).
8. Print and sign your name in the relinquished by portion of the chain of custody signatures section on the CoC.
9. Enter the date and time relinquished.

Once the sample and CoC are received by TSO personnel the following procedure is to be followed:

1. Ensure that the previous procedure has been followed by the generator.
2. Print and sign your name in the received by portion of the chain of custody signatures section on the CoC.
3. Enter the date and time received.
4. Open the Bioassay Urinalysis Sample Tracking Worksheet.
  - a. Open tsoshare
  - b. Select the folder Bioassay Urinalysis
  - c. Open the spreadsheet
5. Assign the sample the next sequential ISU number and mark this number on the CoC and the label on the sample.
6. Enter the IAC number, CoC number, individual's name, sample volume, date collected, time collected and the date received into the spreadsheet and save the changes.
7. Store the sample along with the CoC in the lab in room 102 of the physical science building until it is shipped.
8. Ship samples to GEL Laboratories LLC. The address where the samples are to be shipped is listed on the CoC.
9. Log the date shipped into the Bioassay Urinalysis Sample Tracking Worksheet and save the changes.

## **REFERENCES**

Acceptable Concepts, Models, Equations and Assumptions for a Bioassay Program. Reg. Guide 8.9 1973  
General Concepts for the Dosimetry of Internally Deposited Radionuclides. Report No. 84, 1984.

An Assessment of Internal Contamination Resulting from Recurrent or Prolonged Uptakes. ICRP Publ. 10A, 1971.  
Evaluation of Radiation Doses to Body Tissues from Internal Contamination Due to Occupational Exposure. ICRP Publ. 10, 1968.

Limits for Intakes of Radionuclides by Workers. ICRP Publ. 30, Parts 1, 2 and 3 with Supplements, 1979-82.

General Principles of Monitoring for Radiation Protection of Workers. ICRP Publ. 35, 1982.

## **ATTACHMENTS**

Chain of Custody Record for Bioassay Urinalysis Samples



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## REVISION TRACKER

Revision 0	September 1, 2008	Original Procedure
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