

Leak Test Sampling Certificate

provided by **Form No:**
ALARA Consultants Inc. - CNSC Approved Leak Testing

CNSC Licensee Information

CNSC Licence No:

Company Name:

Contact Person:

Address:

Telephone No:

Fax No:

Sampler & Sampling Information

Sampling Date:

Company Name:

Sampler's Name:

Address:

Telephone No:

Sampler's Signature:

Send Leak Test Certificates to: CNSC Licensee Address Email _____

Send Invoice to: CNSC Licensee Address Email _____

Wipe sampling method - With a wet Q-tip (or filter disk) wipe accessible surfaces of nuclear device

Wipe location & procedure - Refer to manufacturer or other documented leak test procedure. Procedure on second page can only be used as a guideline.

Prior to collecting wipe sample, review wipe sampling procedure and operating instructions of each nuclear source or device to be sampled. Complete information on this certificate and sample container number. After you have finished collecting the wipe sample, place it in a sample container (envelope) and seal container. Courier the sample(s) to ALARA Consultants Inc. for measurement.

Sample Envelope No.	Source or Device	Serial Number	Radioisotope	Manufacturer & Model Number	Usage or storage location
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

NOTE: Leak Test Measuring Certificate(s) will be delivered to the contact person indicated above. If leakage exceeds allowable limit, the contact person will be contacted immediately by phone or fax. Staple together copies of Leak Test Sampling Certificate, Sealed Source Inventory, and Leak Test Measurement Certificate(s) and retain for a minimum of 3 years.

For Leak Test Measurement Return to: ALARA Consultants Inc. 9524 27 Ave Edmonton AB, T6N 1B2
For additional Leak Test Kits or Information Call: 1(780) 944-2557 or 1(800) 538-8138

ALARA Consultants Inc.

APPROVED SEALED RADIOACTIVE SOURCE LEAK TEST PROCEDURES

Leak Test Sampler Requirements:

Know requirements of CNSC REGDOC 1.6.1, Appendix AA; know the types, activity, and location of sealed sources (see inventory record); be able to recognize and minimize radiation hazards associated with performing leak test procedure; obtain and follow written leak test sampling procedure(s).

Pre Leak Test Instructions:

Prior to collecting a leak test sample: obtain and review wipe sampling procedure(s) and operating instructions of each source or device; ensure that sufficient leak test wipe sampling materials (Q-tips and sample containers/envelopes) and blank leak test sampling certificates are available; complete all information on the Leak Test Sampling Certificate and assign a number to the Leak Test Sample Container (envelope). Sample envelope number must correspond to sample container number listed on Leak Test Sampling Certificate.

Leak Test Instructions:

1. Perform a visual check on the nuclear source or device to ensure that it is in good condition. If applicable, before taking the leak test sample, ensure the source/device is in the shielded position.
2. When nuclear devices are equipped with shutter mechanisms the movement of the shutter mechanism from the open to closed position may not always be a reliable indication that the shutter mechanism is in fact closed. Due to corrosion and mechanical failure shutter mechanisms have been known to fail. If the device or source employs a shutter mechanism use a radiation survey meter to confirm closed position.
3. **Radiation Hazard Warning:** Wipe samples are not to be taken directly from the radioactive source capsule. This practice will result in an unnecessary and potentially hazardous radiation dose being received by the leak test sampler. Locate yourself at the backside of the device when performing leak test and/or if possible shield yourself from the source. Caution must be used to ensure that no body parts are placed in front of the primary radiation beam. Familiarity with the device being leak tested is essential.
5. Moisten the Q-tip wipe sample (or filter disk can be used) with water or alcohol and perform wipe with reasonable pressure using fibre tipped end of Q-tip.
6. Wipe the following locations on the different types of nuclear devices:
 - a) **Fixed Nuclear Gauge** - Wipe seams of source holder, source-housing interfaces, around radiation label, exit beam port and shutter mechanism.
 - b) **Portable Nuclear Gauge** - Wipe gauge housing, exterior of exposed source rod (while in shielded position), shield entrance for source rod on gauge base and if applicable remove top gauge shell cover and wipe the radiation warning label covering Am-241/Be source in base.
 - c) **Down-hole Logging Sources** - Wipe exterior seams of storage/transport container and the interior of storage cavity (while storing source in another container).
 - d) **Industrial Radiography** - Wipe camera exterior surfaces, seams, housing interfaces and source exit port (shutter must be in shielded position).
 - e) **Electron Capture Detection** - Wipe detector entrance and exit ports, exterior and interior (if possible) of detector housing.
 - f) **Self-Shielded Irradiators** - Wipe the exterior (top and bottom) of the stationary shield, exterior of rotating shield, interior of sample chamber.
 - g) **Nuclear Medicine Calibration and Flood Sources** - Wipe all external surfaces of the source including the source seal area.
 - h) **Un-Shielded Sources:** Only perform under direct supervision of the RSO or specialist. Attached the wooden 6 inch wooden sticked and fibre tipped Q-tip to a ≥ 1.5 m tongs (use elastic or tape) and perform wipe as per procedure in c) above or if the source / holder is physically damaged and suspected leaking, wipe the actual source with the tonged equipped Q-tip and employing time, distance and shielding..

After you have collected the leak test wipe, place the Q-tip in the labeled sample container (envelope) and seal envelope. Ensure the envelope number corresponds to the sample container number indicated on the certificate. **Caution:** Treat used leak test sample wipes as being potentially contaminated with radioactivity until proven otherwise.

Post Leak Test and Measurement Procedures:

Send the collected leak test sample(s) and a copy of a signed Leak Test Sampling Certificate to ALARA Consultants Inc. (CNSC approved sample measurement agency).

Shipping Instructions for Collected Leak Test Samples:

If a radiation contamination monitor is available check the wipe samples for gross radioactive contamination ($> 2 \times$ background). If gross contamination is evident contact ALARA Consultants Inc. for further instruction. If gross contamination is not evident courier Leak Test Samples to ALARA Consultants Inc. Sending collected leak test sample kits via Canada Post is prohibited.

Licensee Leak Test Record Keeping Requirements:

Staple together, original copies of Sealed Source Inventory, Leak Test Sampling Certificate and Leak Test Measuring Certificate(s) and file as proof of compliance with CNSC licence requirements. All records relating to leak test performance and measurement are required to be retained for a minimum of 3 years.

CLIENT INFORMATION:

What frequency are you required to leak test your sealed radioactive source leak tests? Every:

6 Months 12 Months 24 Months

We wish to have leak test kits sent to us automatically at the scheduled date indicated above:

Yes No