

RPR 51A. SEALED SOURCE LEAK TEST RECORD

Responsible User: _____ Group #: _____ Location: _____

Source description: _____ Device/Inventory #: _____ Task #: _____

Manufacturer: _____ Serial No.: _____

Nuclide: _____ Activity: _____ μCi mCi Ci (Circle one)

Analysis of liquid in which immersed. Sample volume, $V =$ _____ mL

Counted as a liquid or as an evaporated solid

Acceptance criterion for immersion liquid = 0.2 pCi/L = 0.4 net alpha dpm/mL.

Direct wipe of source capsule or **accessible surface of housing**

Acceptance criterion = 0.005 μCi on wipe.

Counting instrument:

Model: _____ Ser. No.: _____ Cal. date: _____

Reference source identification: _____

Nuclide: _____ Activity, $A_r =$ _____ μCi (preferably $<0.005 \mu\text{Ci}$ or 10,000 dpm)

Background obtained from tap water or from instrument only

RESULT:

	<u>Background</u>	<u>Reference</u>	<u>Sample</u>
Total counts recorded:	$C_b =$ _____	$C_r =$ _____	$C_s =$ _____

Total count time (minutes):	$T_b =$ _____	$T_r =$ _____	$T_s =$ _____
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Count rate (counts/minute):	$R_b =$ _____	$R_r =$ _____	$R_s =$ _____
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Efficiency, $E = (R_r - R_b) / A_r =$ _____ net cpm/ μCi , or _____ cpm/dpm

Activity on wipe, $A_s = (R_s - R_b) / E =$ _____ μCi , or

Concentration in liquid, $A_s = (R_s - R_b) / (E \cdot V) =$ _____ $\mu\text{Ci/mL}$

If the result is less than the acceptance criterion, the source is acceptable for use. If the result exceeds the acceptance criterion, the source is assumed to be leaking and must be repaired or disposed of as radioactive waste.

Any sealed source that shows evidence of leaking must be reported in writing to the licensing agency (NRC or state) within 5 days.

Tested by: _____ Date: _____