

Operation SWAB: Monitoring of Shipboard Contamination

Objective: to detect low-level ^{14}C and ^3H contamination that could compromise background level measurements of these isotopes.

When should a SWAB test be performed?

- Whenever practical, immediately after every cruise that involves any radioisotope use.
- Samples can be collected by UM personnel, or by operating institution personnel (courtesy SWAB).
- At least one SWAB per year should be performed by UM personnel.

How to request a SWAB

- Contact either:

- Jim Happell (jhappell@rsmas.miami.edu, 305-361-4111).

- or Charlene Grall (cgrall@rsmas.miami.edu, 305-361-4119).

More information on the SWAB program can be found at:
<http://www.rsmas.miami.edu/groups/tritium/SWAB.html>

What is a SWAB test?

- 200 ml of a heavy-duty detergent and water solution is spread over a 1 m² sampling area.
- ~ 50 ml of the solution is soaked up with a sponge and transferred to a sample bottle.
- Samples are returned to the lab and counted in a low-background LSC.

SWAB test versus wipe test

- The soapy water solution is much more efficient at picking up radioisotopes than the dry wipe test.
- SWAB samples are collected over a much larger area.
- SWAB samples are counted in a low-background LSC. Wipe samples usually are not.
- SWAB testing can detect radioactivity at levels ~ 1,000 times less than a wipe test is capable of measuring.

Radiation Vans

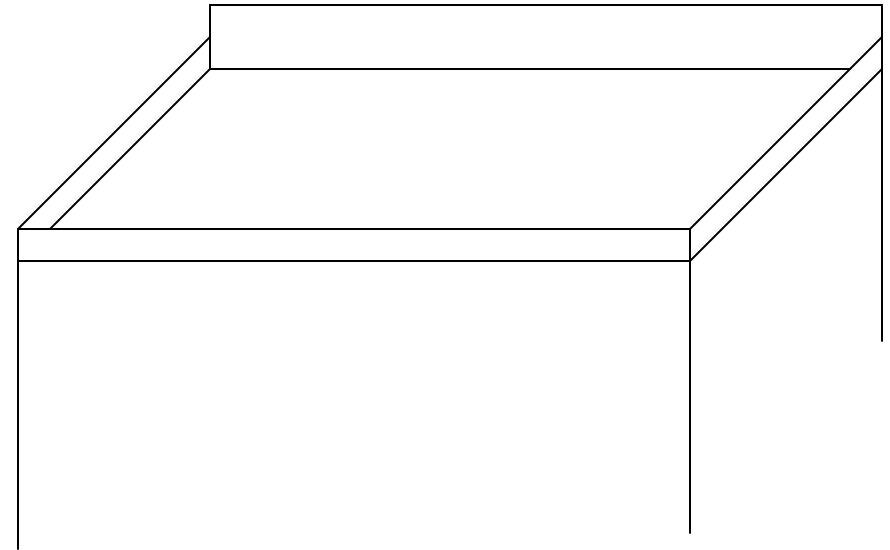
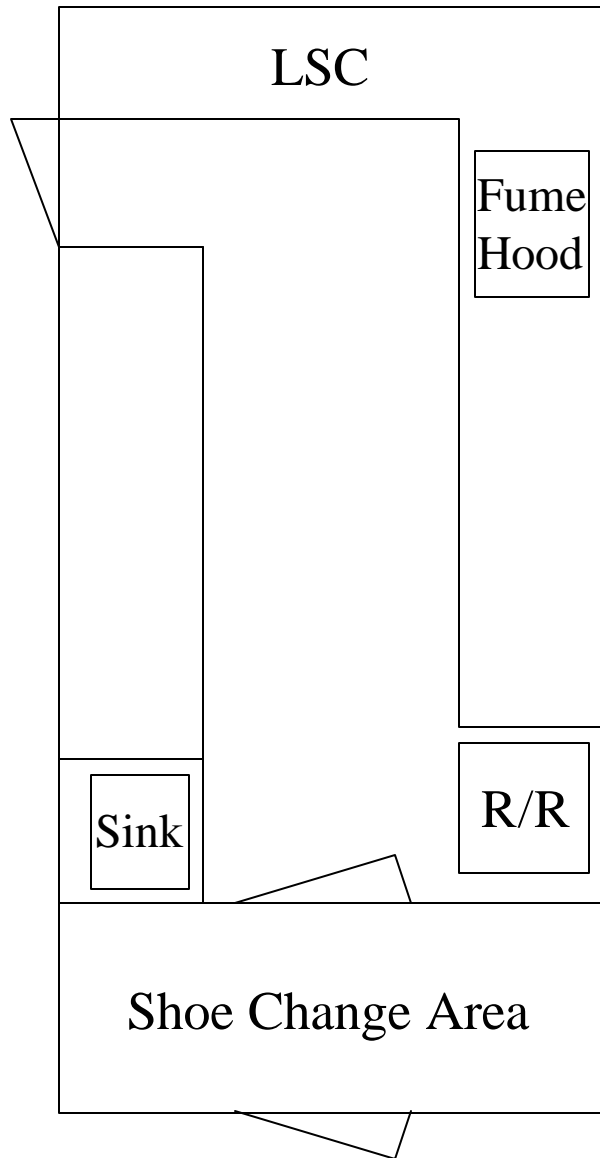
Purpose – to contain and isolate radioisotopes.

Location – On a deck in a low traffic area
away from air intakes.

Rad. Van Internal Configuration

- All surfaces (walls, deck, & bench tops) should be made of non-porous, impermeable material.
- Wood should not be used, if it is used it must be sealed.
- All bench tops should have a water-tight lip on all edges.
- Caulking the fume-hood base helps keep spills in the hood from leaking out.
- Rad waste container(s) should be in the van.
- Sink drainage should be self contained.
- Shoe change area should be present.

Typical Radioisotope Van Configuration



All workbenches should have backsplashes and lipped edges that are sealed with silicone caulk to retain spills.

Proper Rad. Van Uses

- Only scientists working with radioisotopes are permitted in the van.
- Anyone entering the van should change shoes or put on shoe covers.
- LSC should be in the van.

Rad Vans should never be used for:

- Non-radioactive science work.
- Storage containers.
- Shipping containers.
- It is especially important that sampling equipment never be put in a van.