

Tritium Laboratory
15 June 2012

SWAB REPORT # 633

SWAB DATE: 18 May 2012

R/V Atlantis

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Distribution:
SWAB Committee
Ann McNichol

Typical LSC instrument background values for 3H and 14C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m². Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m². An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	3H (dpm/m ²)	14C (dpm m ²)	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above 1000 dpm/m ² should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: 14C and 35S have peak energies of 156 and 167 KeV, respectively; thus 35S will be registered as 14C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

3H: Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

14C: Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing 14CO₂). Follow up with wash as if for 3H.

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

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LOCATION: Woods Hole, MA
VESSEL: *R/V Atlantis*

DATE: 18 May 2012
TECHNICIAN: Ann McNichol

Sample #	Sample Identification	³ H dpm/m ²			¹⁴ C dpm/m ²		
		activity	error		activity	error	
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	0	±	0	8	±	36
3	Sampling bench	0	±	0	26	±	36
4	Floor including mat	0	±	0	18	±	38
5	Floor	0	±	0	24	±	38
6	Final bucket blank	0	±	0	27	±	36

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. The areas sampled are free of any tritium or radiocarbon contamination that requires cleaning.