



1 June 2012

SWAB REPORT # 630

SWAB DATE: 25 May 2012

*R/V Barnes*

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James D. Happell

Distribution:  
SWAB Committee  
Douglas Russell, UW

## COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for  $^3\text{H}$  and  $^{14}\text{C}$  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  $\text{dpm}/\text{m}^2$ . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in  $\text{dpm}/\text{m}^2$ . An error larger than the activity indicates that the activity is not significantly different from zero.

### Criteria for SWAB Results

Category	$^3\text{H}$ ( $\text{dpm}/\text{m}^2$ )	$^{14}\text{C}$ ( $\text{dpm}/\text{m}^2$ )	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 $\text{dpm}/\text{m}^2$ 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:  $^{14}\text{C}$  and  $^{35}\text{S}$  have peak energies of 156 and 167 KeV, respectively; thus  $^{35}\text{S}$  will be registered as  $^{14}\text{C}$  by our counting techniques. Categories A, B and C are not a health hazard

### Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

$^3\text{H}$ : 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.

$^{14}\text{C}$ : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing  $^{14}\text{CO}_2$ ). Follow up with wash as if for  $^3\text{H}$ .

### 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

REPORT FOR SWAB # 630

LOCATION: Seattle, WA  
VESSEL/LAB: *R/V Barnes*

DATE: 25 May 2012  
TECHNICIAN: Charlene Grall

Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
1	Initial bucket blank	14	± 123	0	± 0
2	Main Lab Sink area	1	± 0	0	± 0
3	Aft benchtop	17	± 56	0	± 0
4	Inside refrigerator	7	± 40	2	± 30
5	Deck below refrigerator	26	± 55	0	± 0
6	Deck at aft entrance to Main Lab	10	± 0	0	± 0
7	Deck below sink in Galley	0	± 0	0	± 0
8	Deck at top of Stair to Pilot House	22	± 78	0	± 0
9	Deck at stbd entrance to Pilot House	19	± 45	0	± 2
10	Final bucket blank	30	± 51	0	± 0

**Comments**

Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested in the ship were free from radioisotope contamination that required cleaning.

*R/V Clifford Barnes*

