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Tritium Laboratory
16 February 2015

SWAB REPORT #761

SWAB DATE: 4 February 2015

R/V Hugh Sharp
General Purpose Van #2

James
Happell

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Typical LSC instrument background values for ^3H and ^{14}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 dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . 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)	^{14}C (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 $1000 \text{ dpm}/\text{m}^2$ 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}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C 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.

^{14}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 ^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.

REPORT FOR SWAB # 761

LOCATION: Lewes, DE
VESSEL: *R/V Hugh Sharp*

DATE: 4 February 2015
TECHNICIAN: Joe Lachmann, UDEL

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
	<u>General Purpose Van #2</u>				
1	1st Vial Bkgnd	0	0	0	0
2	Initial bucket blank C.O. #1	0 ±	0	10 ±	39
3	Floor inside front door	90 ±	45	49 ±	33
4	Wood countertop across from sink	0 ±	0	0 ±	0
5	Wood countertop across from refrigerator	41 ±	40	34 ±	34
6	Wood countertop across from freezer	0 ±	0	0 ±	0
7	Sink area	0 ±	0	28 ±	36
8	Wood countertop adjacent to sink	0 ±	0	0 ±	0
9	Wood countertop above freezer	*582 ±	69	*412 ±	46
10	Wood countertop adjacent to fume hood	148 ±	48	*103 ±	36
11	Inside fume hood	0 ±	0	0 ±	0
12	Floor inside back entrance	*994 ±	80	*780 ±	56
13	Floor in middle of van	167 ±	49	*127 ±	37
14	Inside freezer	0 ±	0	11 ±	42
15	Inside refrigerator	0 ±	0	0 ±	0
16	Floor below sink	0 ±	0	3 ±	38

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. This is the van that had false positive results on previous SWAB tests. The van was cleaned by an industrial cleaning service prior to this SWAB. This cleaning has now reduced the false positive values considerably.

General Purpose Van #2408-02

Figure 1
SWAB #761
4 February 2015

