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Tritium Laboratory
14 September 2012

SWAB REPORT # 646

SWAB DATE: 10 September 2012

R/V Savannah

James D. Happell

Distribution:
SWAB Committee
John Bichy
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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 insitition promptly by phone or email.

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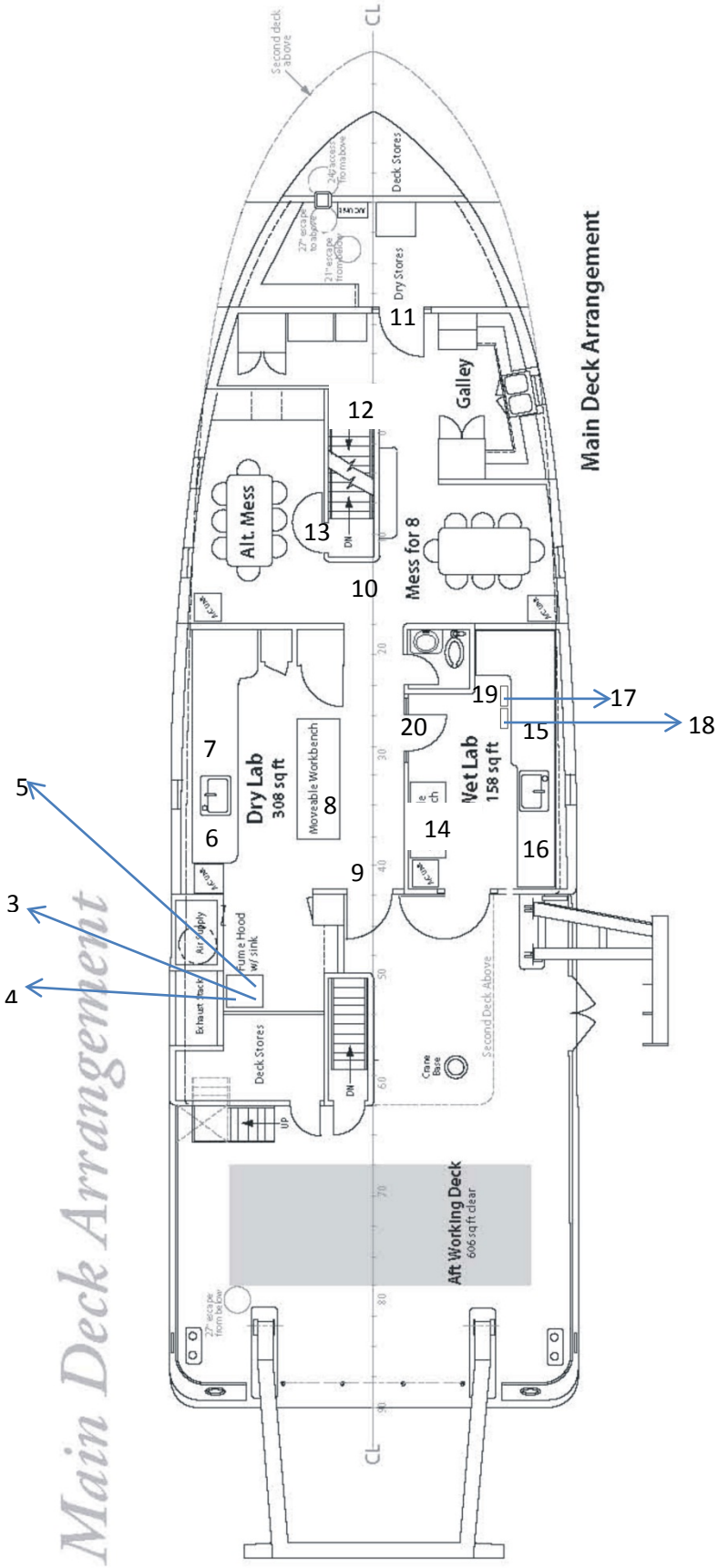
LOCATION: Savannah, GA
VESSEL: R/V Savannah

DATE: 10 September 2012
TECHNICIAN: Cecilia Roig

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	11 ±	30	10 ±	30
	<u>Dry Lab (See Figure)</u>				
3	Inside hood	0 ±	0	18 ±	0
4	Benchtop port of hood	8 ±	39	1 ±	18
5	Deck in front of hood	0 ±	0	17 ±	37
6	Benchtop aft of sink	0 ±	0	0 ±	0
7	Benchtop fwd. of sink	0 ±	0	7 ±	36
8	Center benchtop	0 ±	0	19 ±	37
9	Deck at entrance	0 ±	0	20 ±	37
	<u>Miscellaneous Areas (See Figure)</u>				
10	Deck under water fountain	0 ±	0	14 ±	34
11	Deck inside fwd. door	0 ±	0	8 ±	46
12	Deck at bottom of stairs	0 ±	0	8 ±	39
13	Deck at top of stairs	0 ±	0	10 ±	40
	<u>Wet Lab (See Figure)</u>				
14	Port bench top	0 ±	0	1 ±	0
15	Benchtop fwd. of sink	0 ±	0	8 ±	44
16	Benchtop aft of sink	0 ±	0	4 ±	91
17	Inside Thermo refrigerator	0 ±	0	10 ±	48
18	Inside Isotemp freezer	0 ±	0	0 ±	0
19	Deck in front of Fire Locker	1 ±	0	0 ±	0
20	Inside port entrance	0 ±	0	0 ±	0
21	Final bucket blank	0 ±	0	1 ±	0

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested on ship were clean from isotope contamination.



Main Deck Arrangement

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