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3 October 2011

SWAB REPORT # 598

SWAB DATE: 23 September 2011

R/V Pelican

James Happell

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James D. Happell

Distribution:
SWAB Committee
Joe Marbrough

COMMENTS TO SWAB REPORTS 23 November 2010

Typical LSC instrument background values for ^{3}H 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	^{3}H (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 dpm/m2 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 Proceedure

Wearing ordinary household rubber gloves:

^{3}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}C: Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}CO_2$). Follow up with wash as if for ^{3}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 # 598

LOCATION: Cocodrie Louisiana
VESSEL/LAB: *R/V Pelican*

DATE: 23 September 2011
TECHNICIAN: Jim Happell

Sample #	Sample Identification	^{3}H dpm/m^{2} activity	±	error	^{14}C dpm/m^{2} activity	±	error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	50	±	44	24	±	32
Dry Lab (see figure 1)							
3	Forward bench top	0	±	0	*64	±	37
4	Port bench top	0	±	0	40	±	36
5	Starboard bench top	0	±	0	49	±	37
6	Fume hood	38	±	49	16	±	31
7	Deck in front of door	53	±	50	13	±	29
Main Deck (see figure 1)							
8	Deck in computer roon near door	31	±	35	39	±	35
9	Deck between galley and mess	0	±	0	37	±	37
10	Deck at top of forward stairs	0	±	0	*65	±	38
Wet Lab (see figure 1)							
11	Inside aft freezer	0	±	0	36	±	39
12	Inside forward freezer top	0	±	0	35	±	36
13	Inside forward refrigerator bottom	0	±	0	*50	±	37
14	Bench top next to port door	0	±	0	*53	±	38
15	Bench top next to forward sink	13	±	23	37	±	35
16	Deck in front of forward refrigerator	1	±	3	*52	±	36
17	Bench top across from fwd.refrigerator	0	±	0	22	±	35
18	Bench top across from port sink	10	±	36	10	±	33
19	Sink area od bottle lab	0	±	0	33	±	37
20	Aft deck of wetlab	112	±	54	16	±	26
21	Bench top forward of port sink	0	±	0	44	±	37
22	Deck inside port entrance	10	±	23	27	±	35
23	Center of deck	33	±	57	0	±	0
24	Top of aft freezer	3	±	8	37	±	36
25	Intermediate bucket blank	0	±	0	32	±	37

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
Radiation Van (see figure 2)							
26	Inside refrigerator #1	711	±	72	*559	±	50
27	Inside refrigerator #2	*8497	±	251	*810	±	44
28	Top of LSC	256	±	57	*123	±	36
29	Fume hood	202	±	56	*77	±	33
30	Deck near double doors	**16475	±	331	*923	±	40
31	Deck near single door	*2509	±	117	*927	±	56
32	Bench top next to LSC	*1967	±	99	*2817	±	94
33	Final bucket blank	0	±	0	6	±	42

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. Minor ^{14}C contamination was found in several areas of the ship. These areas should be cleaned before any natural tracer work. Minor ^{14}C and minor to moderate ^{3}H contamination was found in the rad van. The deck of the rad van must be cleaned before any additional use to prevent tracking contamination into the ship.

R/V Pelican

Figure 1
SWAB #354
24 September 2011

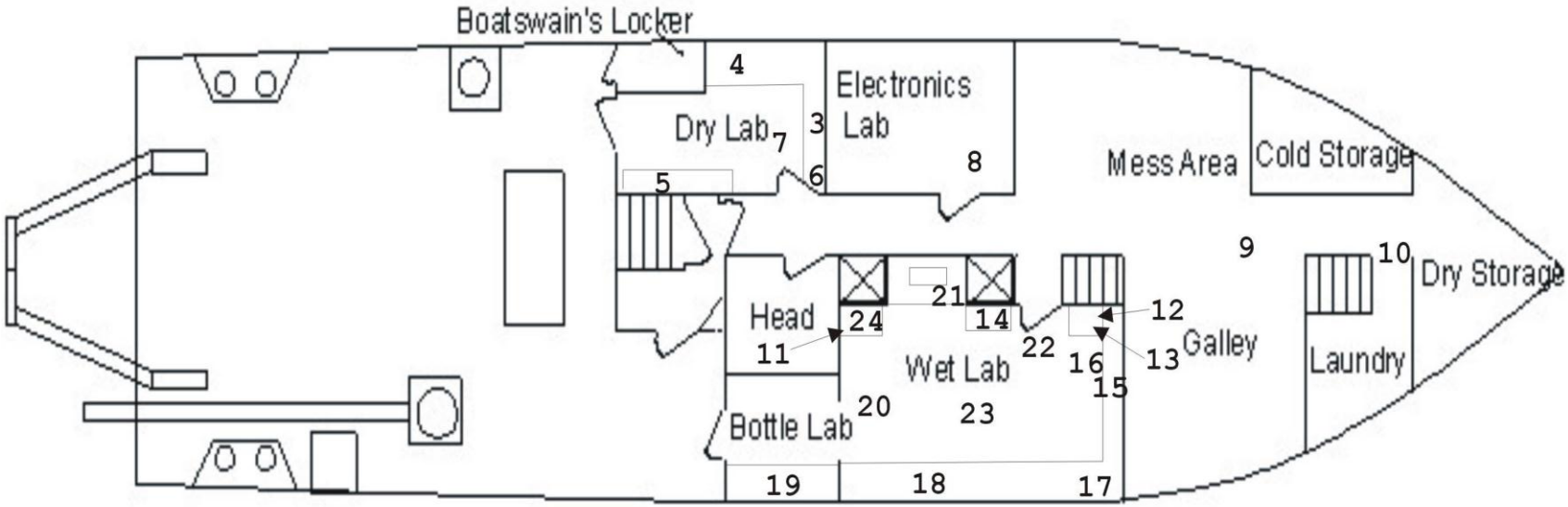

Figure 2
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