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Tritium Laboratory
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SWAB REPORT # 805

SWAB DATE: 16 February 2016

R/V Kilo Moana

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Distribution:
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COMMENTS TO SWAB REPORTS

12 May 2014

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 contact your institution's radiation safety office.

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

REPORT FOR SWAB # 805

LOCATION: Honolulu, HI

DATE: 16 February 2016

Vessel: *Kilo Moana*

TECHNICIAN: Cecilia Roig

Sample #	Sample Identification	^3H dpm/m ²			^{14}C dpm/m ²		
		activity	error		activity	error	
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	-10	±	18	9	±	39
	<u>Lab #1 (Figure 1)</u>						
3	Deck below aft sink	5	±	90	-5	±	45
4	Deck at forward entrance	-45	±	83	10	±	48
	<u>Miscellaneous Areas (Figure 1)</u>						
5	Deck on hallway between Lab 1 and Hydro	-17	±	31	5	±	45
6	Deck below water fountain and eye wash	-27	±	49	8	±	44
	<u>Chemistry Lab (Figure 1)</u>						
7	Deck inside port entrance	1	±	4	32	±	37
8	Deck in front of fume hood	-38	±	70	20	±	41
9	Starboard benchtop aft section	-27	±	49	4	±	55
10	Inside fume hood	-57	±	106	21	±	43
11	Benchtop between forward sink and hood	-14	±	26	12	±	39
12	Forward sink area	-21	±	38	7	±	43
13	Inside small Kenmore fridge	-4	±	62	8	±	37
14	Aft sink area	-31	±	56	15	±	41
	<u>Hydro Lab (Figure 1)</u>						
15	Deck between forward and port entrances	-39	±	71	3	±	178
16	Deck below starboard benchtop mid section	-17	±	32	12	±	40
17	Aft sink area	-69	±	127	29	±	43
18	Forward benchtop	-18	±	33	-21	±	32
19	Port benchtop	2	±	13	13	±	36
20	Starboard benchtop aft section	-17	±	31	5	±	44
	<u>Scientific Storage (Figure 1)</u>						
21	Top of port GE freezer	-44	±	81	13	±	44
22	Inside Cospolich #1	316	±	72	14	±	17
23	Inside Cospolich #2 top	131	±	57	15	±	25
24	Inside Cospolich #2 bottom	-16	±	29	5	±	45
25	Inside Cospolich #3 top	51	±	59	-9	±	43
26	Inside Cospolich #3 bottom	9	±	32	12	±	35
27	Deck under sink	-16	±	30	4	±	46

Sample #	Sample Identification	^3H dpm/m ²			^{14}C dpm/m ²		
		activity	±	error	activity	±	error
28	Forward benchtop next to sink	-28	±	51	5	±	52
29	Deck center area	-34	±	62	9	±	45
<u>Lab #2 (Figure 1)</u>							
30	Forward port benchtop	-37	±	68	13	±	43
31	Deck inside entrance	-38	±	70	24	±	40
32	Aft starboard sink area	-51	±	94	13	±	46
33	Deck between lab spaces	-39	±	73	18	±	42
34	Deck under forward sink	-26	±	48	17	±	40
35	Deck below aft port sink	-11	±	20	14	±	38
36	Forward benchtop right of fwd. sink	19	±	36	21	±	35
<u>Miscellaneous Areas (Figure 1)</u>							
37	Deck at top of stair of Science Storage	-28	±	52	18	±	40
38	Deck at aft entrance to Staging Bay	-38	±	69	-22	±	44
39	Deck at forward entrance to Staging Bay	-20	±	37	19	±	39
40	Final bucket blank CO#1	-29	±	54	7	±	47
<u>Radioisotope Van (Figure 2)</u>							
41	Initial bucket blank CO#2	-20	±	37	-24	±	49
42	Deck inside side entrance	*1281	±	112	*80	±	22
43	Deck inside rear entrance	*575	±	82	*50	±	24
44	Benchtop across from side entrance	182	±	58	31	±	28
45	Benchtop adjacent to LSC	255	±	65	28	±	25
46	Top of LSC	13	±	36	12	±	35
47	Benchtop opposite LSC	295	±	68	-1	±	2
48	Benchtop adjacent side entrance	387	±	73	0	±	1
49	Inside fume hood	66	±	52	8	±	25
50	Inside fridge closest to fume hood	323	±	55	*274	±	43
51	Inside fridge closest to side entrance	143	±	57	23	±	28
52	Deck center of van	*1913	±	137	*111	±	23
53	Final bucket blank CO #2	-30	±	55	17	±	41

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. The reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. All areas tested in the ship were free from isotope contamination that requires cleaning. Minor ^3H and ^{14}C contamination found in rad van. No action is needed.