Tritium Laboratory
October 4, 2014

SWAB REPORT #295

SWAB DATE: 01-02 December 2001

R/V Nathaniel B. Palmer
NBP Radioisotope Vans

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Distribution:
SWAB COMMITTEE
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REPORT FOR SWAB # 295

LOCATION : Punta Arenas, Chile
TECHNICIAN: Cecilia Roig
VESSEL/LAB: *R/V Nathaniel B. Palmer*

DATE: 01-02 December 2001
STATUS: The ship is clean, except inside the freezer compartment of the refrigerator/ freezer in the helicopter Shop on the 02 Deck. Rad Van NSF0 4582 is highly contaminated with tritium. See **COMMENTS** below.

SAMPLE #	SAMPLE IDENTIFICATION	NET ACTIVITY EXTRACTED ^{3}H dpm/m^2	^{14}C dpm/m^2
1	Machine blank	-	-
2	Initial bucket blank (C.O.#2)	76	0
	Radioisotope Van NSF0 4582 (See Figure 1)		
3	Workbench left of sink	8,441*	28
4	Inside fume hood	4,658*	3
5	Workbench across from sink	6,291*	0
6	Inside Haier refrigerator/freezer, top	3,978,818***	237
7	Inside Haier refrigerator/freezer, bottom	359,813***	87
8	Workbench right of door	1,158	0
9	Deck below sink	6,970*	0
10	Deck below fume hood	2,639*	0
	Radioisotope Van, U of TN (See Figure 1)		
11	Workbench left of sink	126	17
12	Workbench under window	119	0
13	Workbench across from sink	192	0
14	Deck under fume hood area	255	0
15	Deck below sink	44	0
16	Deck at entrance	0	0
17	Final bucket blank (C.O.#2)	0	0
	Hydro Lab (See Figure 2)		
18	Initial bucket blank (C.O.#3)	19	0
19	Stbd sink area	0	0
20	Deck below sink area	0	5
21	Deck of Shop	7	0
22	Refrigerator NSF#01905, bottom	0	0
23	Refrigerator NSF#01905, freezer top	0	0
24	Deck of Haz-Mat Locker	0	0
	Wet Lab (See Figure 2)		
25	Workbench right of sink	0	0
26	Deck below sink area	39	0
	Dry Lab (See Figure 3)		
27	Deck inside aft port entrance	3	0
28	Aft workbench/sink area	68	0
29	Deck just inside aft double door entrance	89	0
30	Deck inside fwd port entrance	0	0
31	Inside incubator NSF#02883	9	3

SAMPLE #	SAMPLE IDENTIFICATION	NET ACTIVITY EXTRACTED ^{3}H dpm/m^2	^{14}C dpm/m^2
32	Inside incubator NSF#016613	281	20
33	Inside incubator NSF#016612	0	0
34	Deck between cryofridge and incubators	67	0
35	Top of cryofridge	425	0
36	Workbench right of sink	61	0
	Forward Dry Lab (See Figure 3)		
37	Deck inside aft port entrance	0	0
38	Deck below ship monitoring computer station	0	0
39	Deck below computer station	17	0
	Bio Lab (See Figure 4)		
40	Inside fume hood	226	0
41	Deck just inside entrance to Electronics Lab	92	0
42	Inside NSF#018041 Freezer/refrigerator, top	0	0
43	Inside NSF#018041 Freezer/refrigerator, bottom	0	0
44	Inside Kenmore freezer, bottom	0	0
45	Deck just outside door to Cold Room	112	0
46	Deck below port sink	97	0
47	Walk-in Cold Room 918: Workbench right of sink	49	0
48	Walk-in Cold Room 920: Workbench left of sink	0	0
49	Inside NSF #04693 freezer, top	3	0
50	Inside NSF #04693 refrigerator, bottom	143	5
51	Inside So-Low freezer, bottom	0	0
	02 Deck/Helodeck (See Figure 5)		
52	Inside refrigerator/freezer, top	9,031**	0
53	Refrigerator/freezer, bottom	240	0
54	Deck below sink	207	0
55	Workbench area left of sink	0	0
56	Final bucket sample (C.O.#3)	0	0

COMMENTS

The ship, itself, is completely free of contamination by tritium or radiocarbon. However, the refrigerator/freezer located in the Helicopter Workshop, obviously had been used to store tritium at some time, and never cleaned. This must be cleaned if it is to be used by non-radioisotope scientific personnel. The Radioisotope Van NSF0 4582 is contaminated with tritium, especially inside the Haier refrigerator/freezer, which is so highly contaminated that we consider it a health hazard. The proper authorities were notified by email. This unit should be thoroughly decontaminated or even dismantled and treated as radioactive waste, immediately. Also, the deck of the van is tritium contaminated, so this contamination could be tracked around the ship. All these areas must be cleaned thoroughly and decontaminated before any further use.