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Tritium Laboratory
16 January 2019

SWAB REPORT # 928

SWAB DATE: 1 December 2018

R/V Laurence M. Gould and USAP Rad Van #1

James Happell

Digitally signed by James Happell
Date: 2019.01.16 11:39:38 -05'00'

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Jamee Johnson

COMMENTS TO SWAB REPORTS 12 May 2014

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/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 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 contact your institution's radiation safety office.

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

REPORT FOR SWAB #928

LOCATION: Punta Arenas, Chile
VESSEL: *R/V Laurence M Gould*

DATE: 1 December 2018
TECHNICIAN: D. Hutt

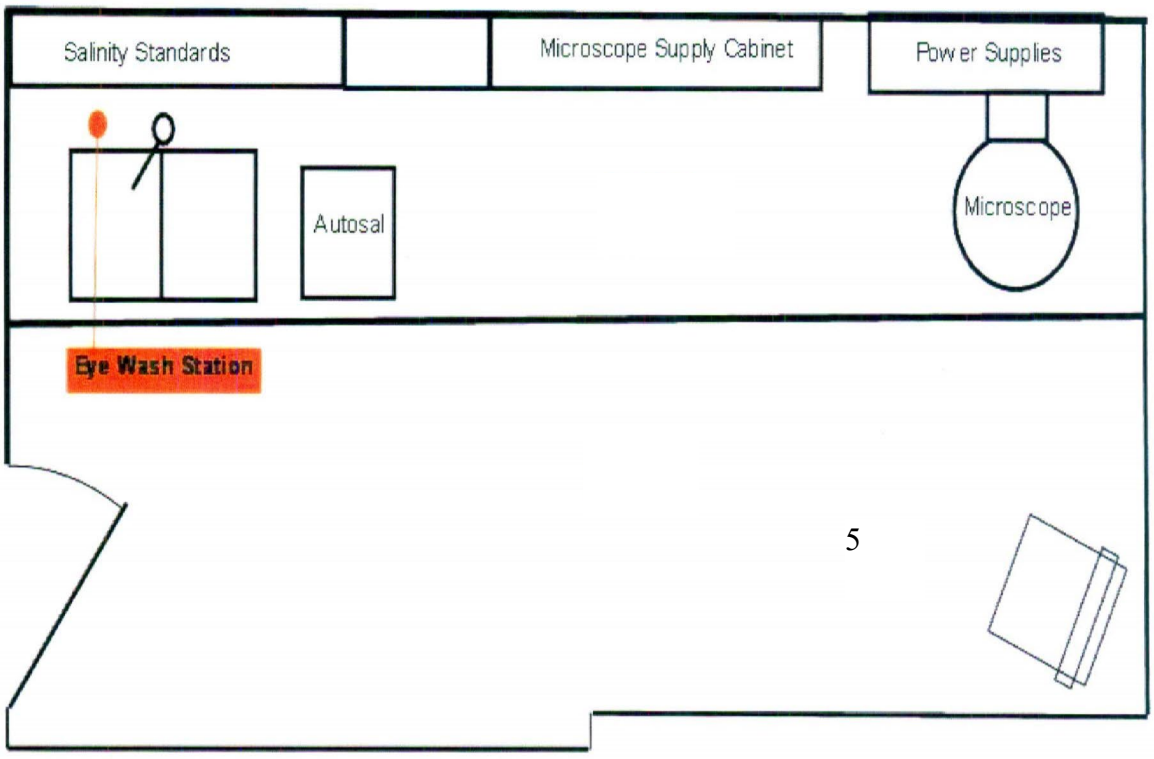
Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initital bucket blank	-18	±	72	-3	±	12
3	Deck in Lounge.	-21	±	82	-27	±	109
4	01 Deck near incubation tanks	13	±	226	-22	±	87
	Environmental Room (Figure 1)						
5	Deck near phone	-45	±	177	-28	±	112
	Electronics Lab (Figure 2)						
6	Deck under public computer	-8	±	32	-24	±	96
7	Deck near printer printer	-3	±	12	-41	±	162
	Dry Lab (Figure 3)						
8	Deck of companionway outside Dry Lab	-9	±	34	-31	±	122
9	Deck between middle benches	14	±	83	-10	±	39
10	Deck under computer desk	17	±	213	-27	±	108
11	Deck in entranceway to Electronics Lab	-25	±	101	-16	±	64
12	Benchtop next to sink	-5	±	20	-30	±	120
	Wet Lab (Figure 4)						
13	Deck near DI water system	-44	±	173	-20	±	81
14	Aft middle workbench	25	±	142	-33	±	129
15	Deck in front of Percival incubator	9	±	35	-28	±	113
	Hydro Lab (Figure 5)						
16	Hydro Lab - Aft workbench	-19	±	74	-6	±	24
17	Floor in front of middle sink	-6	±	24	-28	±	113
	Main Deck (no Figure)						
18	Main Deck outside Wet Lab	12	±	48	-2	±	8
19	Main Deck outside Rad Van #1	18	±	83	-18	±	71
20	Deck of MT Shop	-13	±	50	-32	±	127
21	Deck in MLT office	-8	±	31	-37	±	146

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	USAP Rad Van #1 (Figure 6)						
22	Deck inside door	*628	±	86	-24	±	96
23	Port benchtop	*507	±	81	-39	±	156
24	Starboard benchtop	148	±	62	-12	±	49
25	Deck between benches	*6290	±	226	*170	±	18
26	Deck below LSC	*600	±	85	-27	±	182
27	Inside fume hood	227	±	66	-14	±	55
28	Deck around dry waste area	*1199	±	115	-3	±	2
29	Benchtop in clean area	161	±	61	-7	±	126
30	Final bucket blank	-20	±	81	-29	±	116

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. Please note that both the RV Gould and Rad Van #1 were SWAB tested on

Figure 1
SWAB # 928
1 December 2018



ENVIRONMENTAL ROOM

Figure 2
SWAB #928
1 December 2018

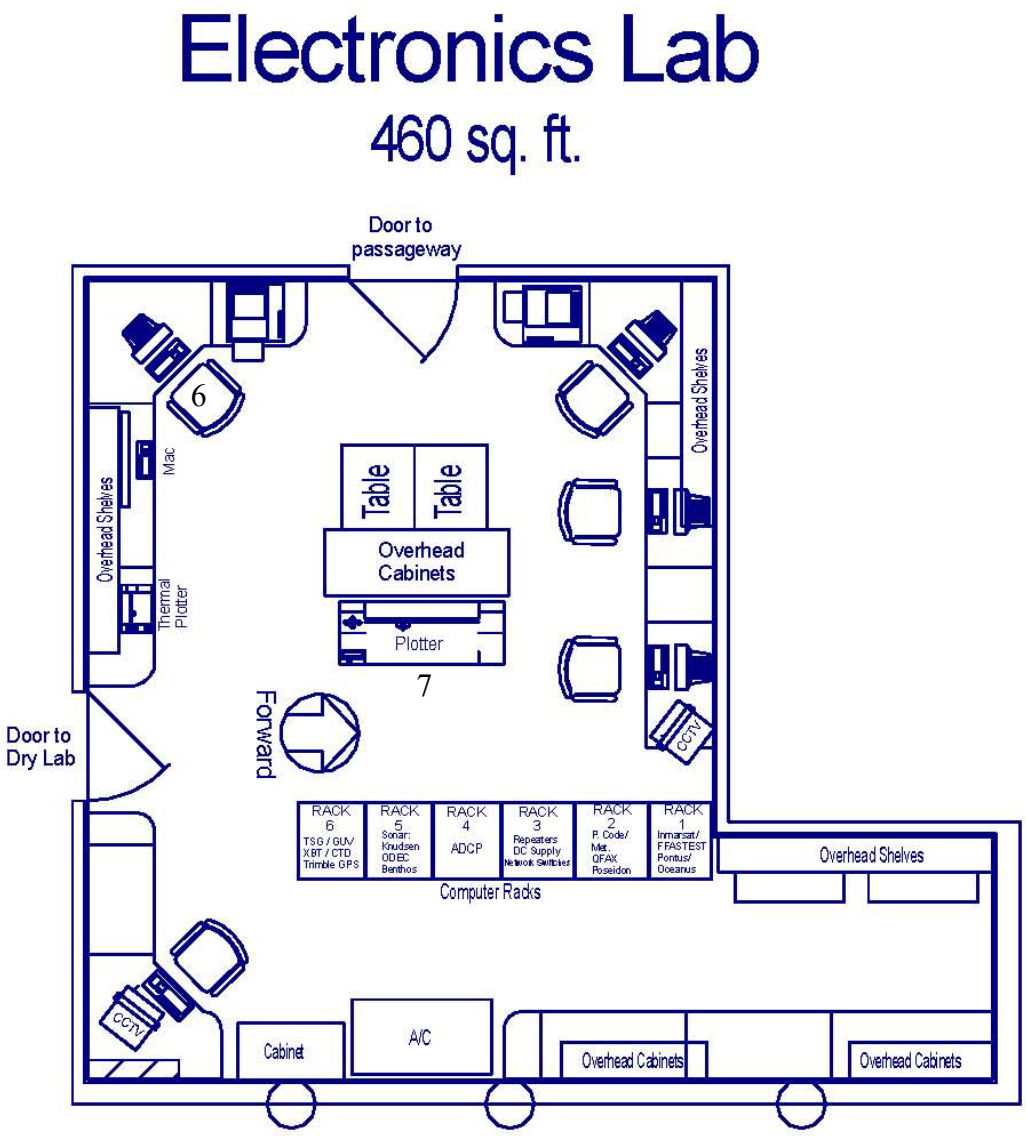


Figure 3
SWAB #928
1 December 2018

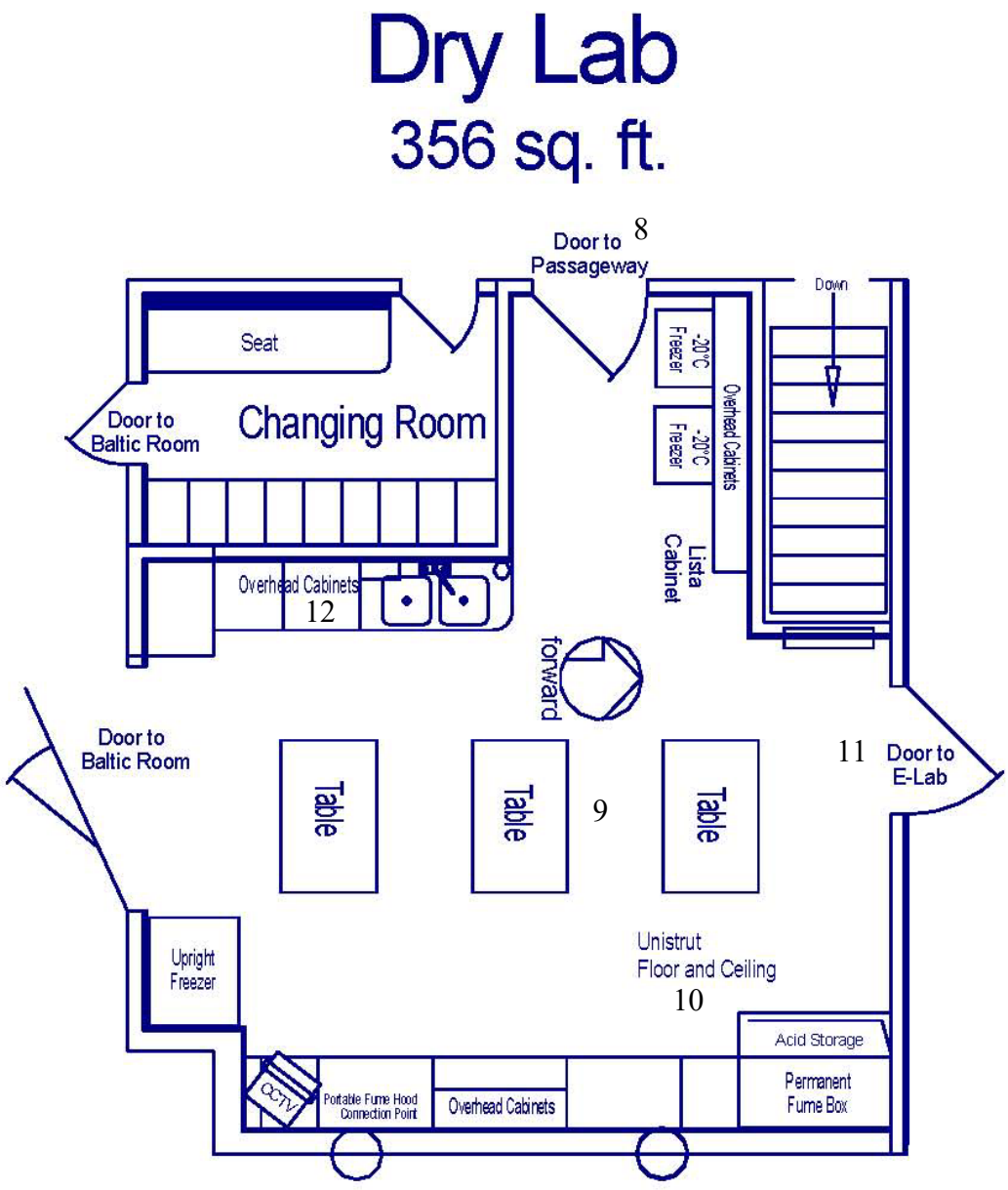


Figure 4
SWAB #928
1 December 2018

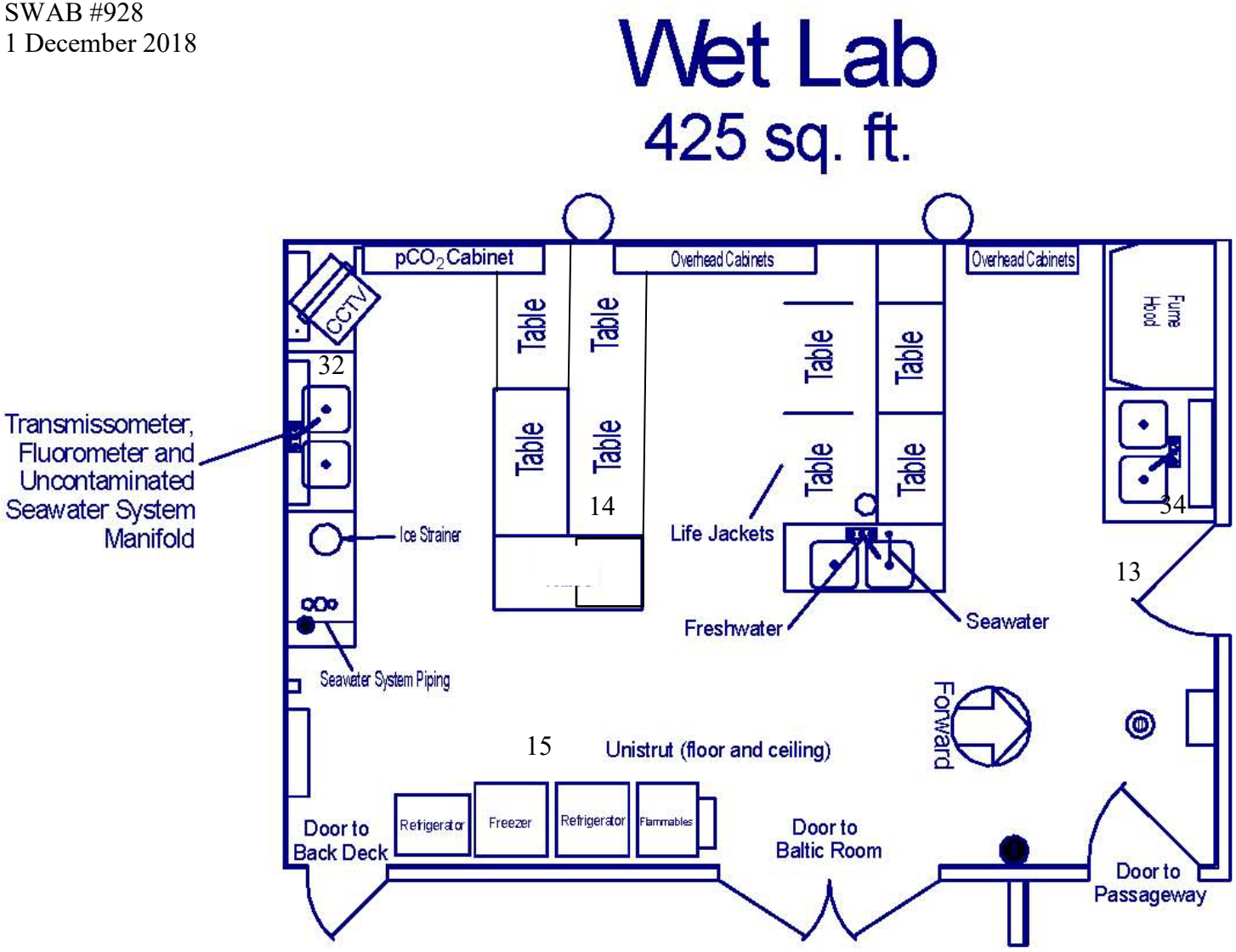


Figure 5
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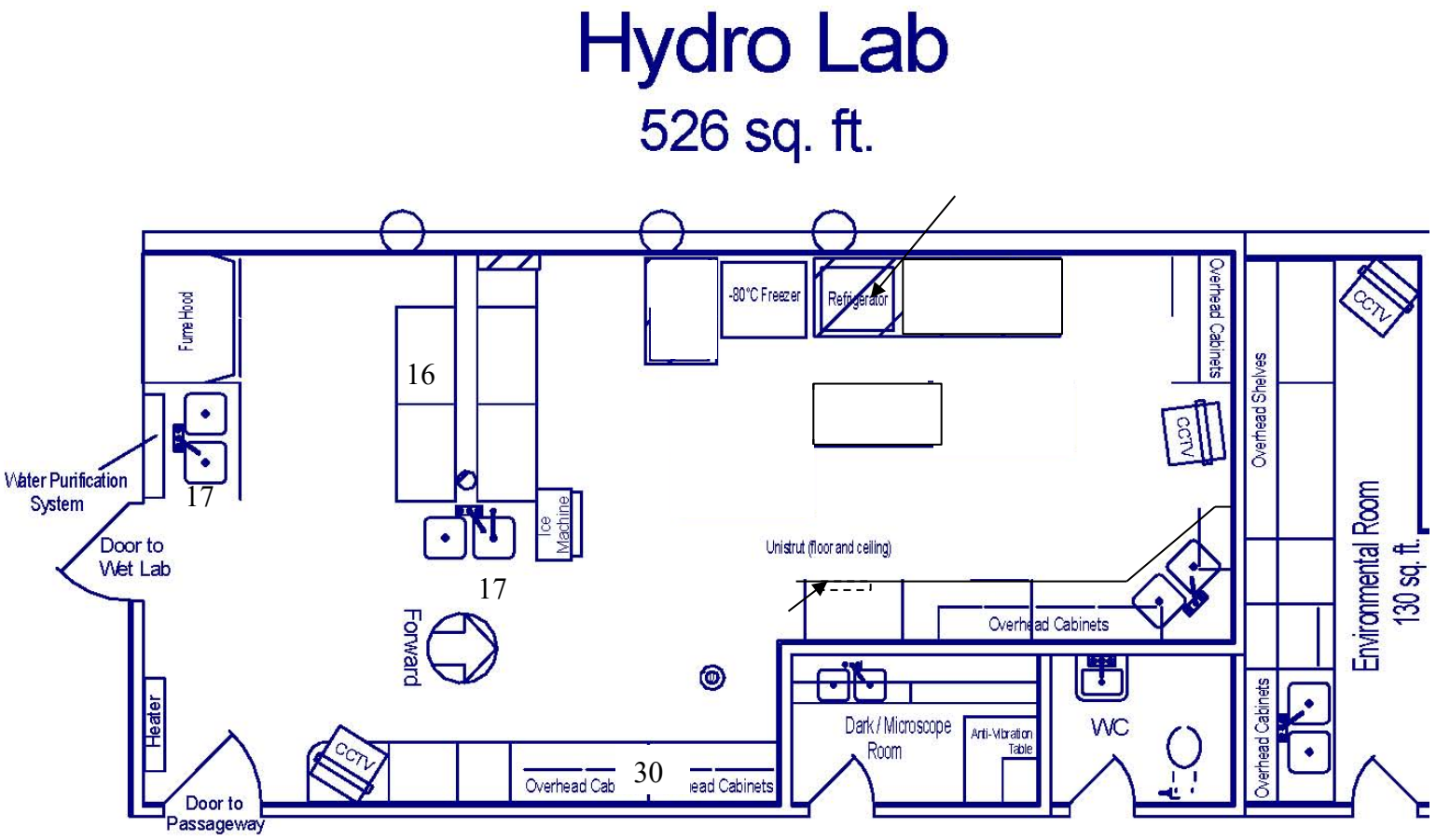

USAP Van #1
Figure 6
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