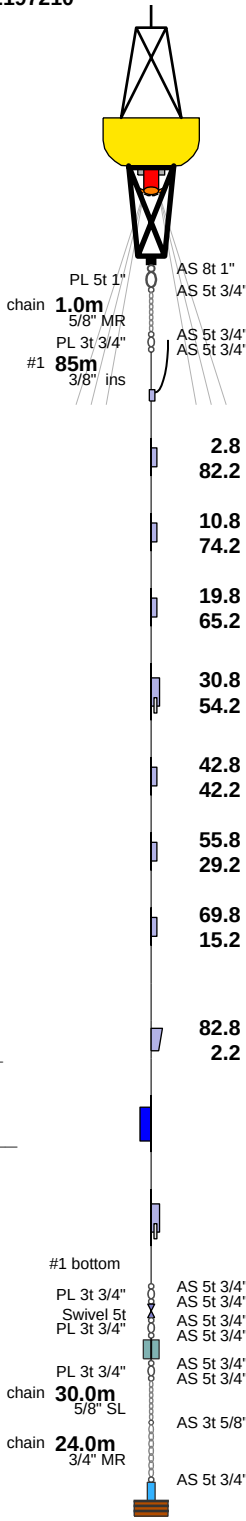


Delmar Surface Buoy 100m					
Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014					
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg					
Author: 14-Jun-2013 21:54:35, begler@t60(GLNX86)					
depth (incl. stretch)	component	S/N description	rope # & Length	Distance from Upper / Lower rope end	in/out of water comment
		Yellow Light Iridium #300034012197210 IP 166.136.128.160 Vaisalla # _____	!!! Check for Cotter Pins !!!		17-June-2013 2014
0.0 m	Seaward Buoy MET SC ADCP	WH #659 SC #6109 / 01 OX #0797 FL #2264 T5 #55413 copper wrap			UTC
4.5 m	ICC				
7.0 m	MC-IM	# _____ / _____		2.8 82.2	
15.0 m	MC-IM	# _____ / _____		10.8 74.2	
24.0 m	MC-IM	# _____ / _____		19.8 65.2	
35.0 m	SC-IM	SC #4598 / 02 OX #0924 FL #2824 T5 #54239 copper wrap		30.8 54.2	
47.0 m	MC-IM	# _____ / _____		42.8 42.2	
60.0 m	MC-IM	# _____ / _____		55.8 29.2	
74.0 m	MC-IM	# _____ / _____		69.8 15.2	
87.0 m	ECHOTAG	AOS # _____ SBE UIMM # _____		82.8 2.2	
87.9 m	SeapHet	SeapHet # _____ SBE44 # _____ / _____			
89.1 m	SC-IM	SC # _____ / _____ Optode # _____			
90.3 m	Pig lead 100 kg dry 91 kg wet	21m at bottom 24m at bottom	#1 bottom PL 3t 3/4" Swivel 5t PL 3t 3/4" chain 30.0m 5/8" SL chain 24.0m 3/4" MR	AS 5t 3/4" AS 5t 3/4" AS 5t 3/4" AS 5t 3/4" AS 5t 3/4" AS 5t 3/4" AS 3t 5/8" welded nut AS 5t 3/4"	
100.0 m	Anchor (3x400+50) 1250 kg dry 1090 kg wet				

Delmar Surface Buoy 100m		
Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014		
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg		
Author: 14-Jun-2013 21:54:35, begler@t60(GLNX86)		
Element List		

Code	Count	Label	Weight in air	/	water
=====					
Components					
32	1	5/8" BTAS 3.2t	0.8 kg		0.7 kg
33	10	3/4" BTAS 4.7t	12.3 kg		10.7 kg
35	1	1" BTAS 8t	2.9 kg		2.5 kg
53	4	3/4" pear link 2.7t	3.4 kg		3.0 kg
55	1	1" pear link 4.8	2.0 kg		1.7 kg
94	1	SS Swivel 5t	6.2 kg		5.3 kg
331	2	Seacat 16plus IM	21.4 kg		19.6 kg
336	6	MicroCAT IM37	22.8 kg		16.8 kg
341	1	Inductive Cable Coupler Up	2.0 kg		1.0 kg
348	1	SeapHet clamp	11.0 kg		7.5 kg
398	1	Echotag	1.8 kg		0.5 kg
420	1	Buoy + Bridle + RDI-WH 300	1600.0 kg		-0.0 kg
Components weight :			1686.6 kg		69.3 kg

Ropes					
104	84m	3/8" 3x19 NILSPIN insulated	37.4 kg		26.6 kg
162	30m	Short Lk chain G43 5/8", 5.8t	180.0 kg		159.9 kg
182	1m	Mooring chain 5/8", 4.0t	5.0 kg		4.3 kg
183	24m	Mooring chain 3/4", 6.0t	182.4 kg		158.6 kg
Ropes weight :			404.8 kg		349.5 kg

Summary					
Components			1686.6 kg		69.3 kg
Ropes			404.8 kg		349.5 kg
526	1	Pig variable lead	100.0 kg		91.2 kg
533	1	Anchor / 3 loc wheels, S post	1250.0 kg		1090.0 kg
Mooring total weight :			3441.3 kg		1599.9 kg

Delmar Surface Buoy 100m		
Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014		
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg		
Author: 14-Jun-2013 21:54:35, begler@t60(GLNX86)		
Rope List		

#	Code	Length	Label	Weight in air	/	water
1	182	1m	Mooring chain	5/8", 4.0t	5.0 kg	4.3 kg
	104	85m	3/8" 3x19 NILSPIN insulated	37.9 kg	27.0 kg	
	162	30m	Short Lk chain G43	5/8", 5.8t	180.0 kg	159.9 kg
	183	24m	Mooring chain	3/4", 6.0t	182.4 kg	158.6 kg

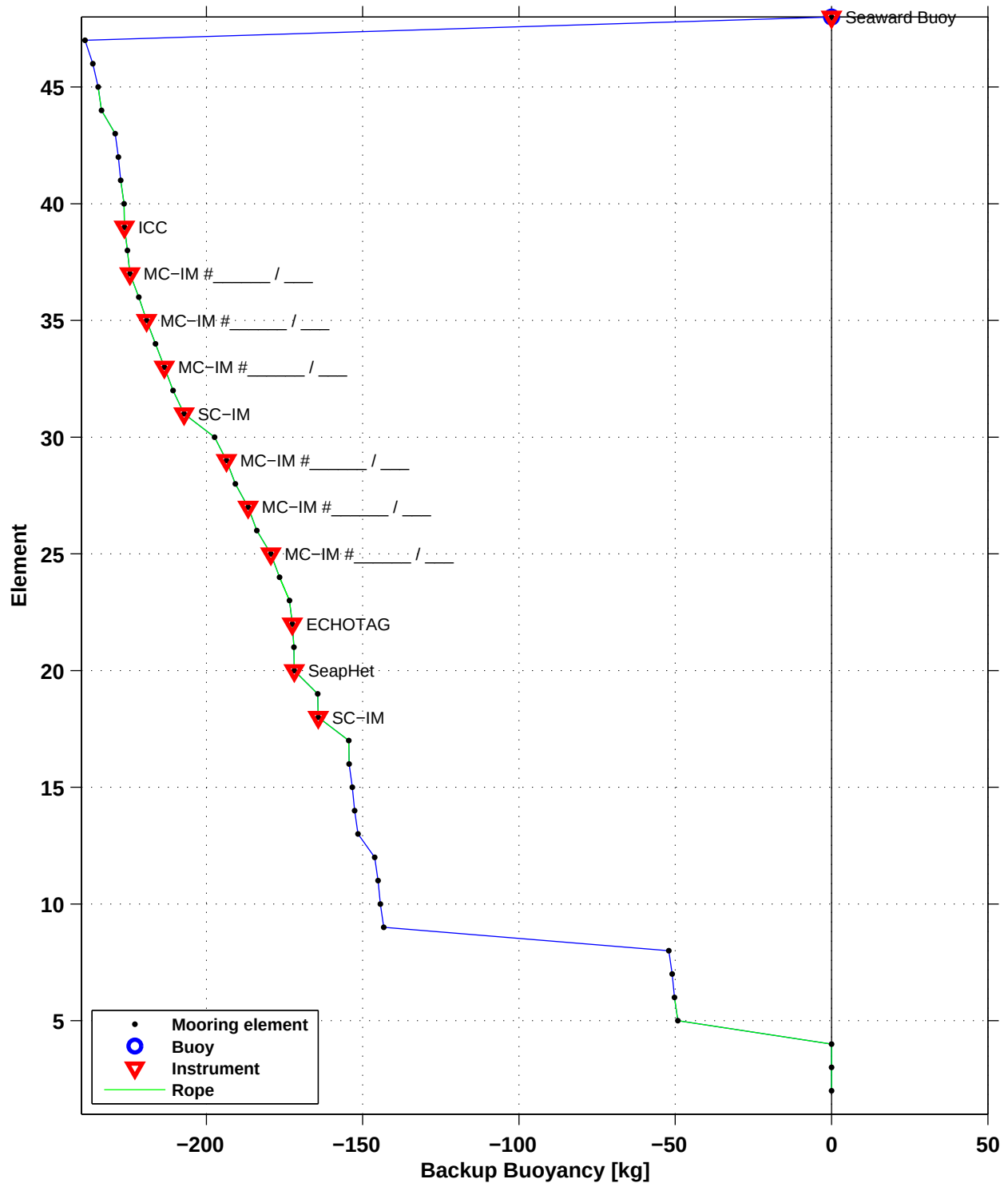
Symmetric Marker: 18

#	Length	Type	Position of Markers [m]										
1	85m	3/8" ins:	2,	2,	3,	11,	15,	20,	29,	31			
			42,	43,	54,	56,	65,	70,	74,	82,	83,	83	

Delmar Surface Buoy 100m**Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014**

Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg

Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)

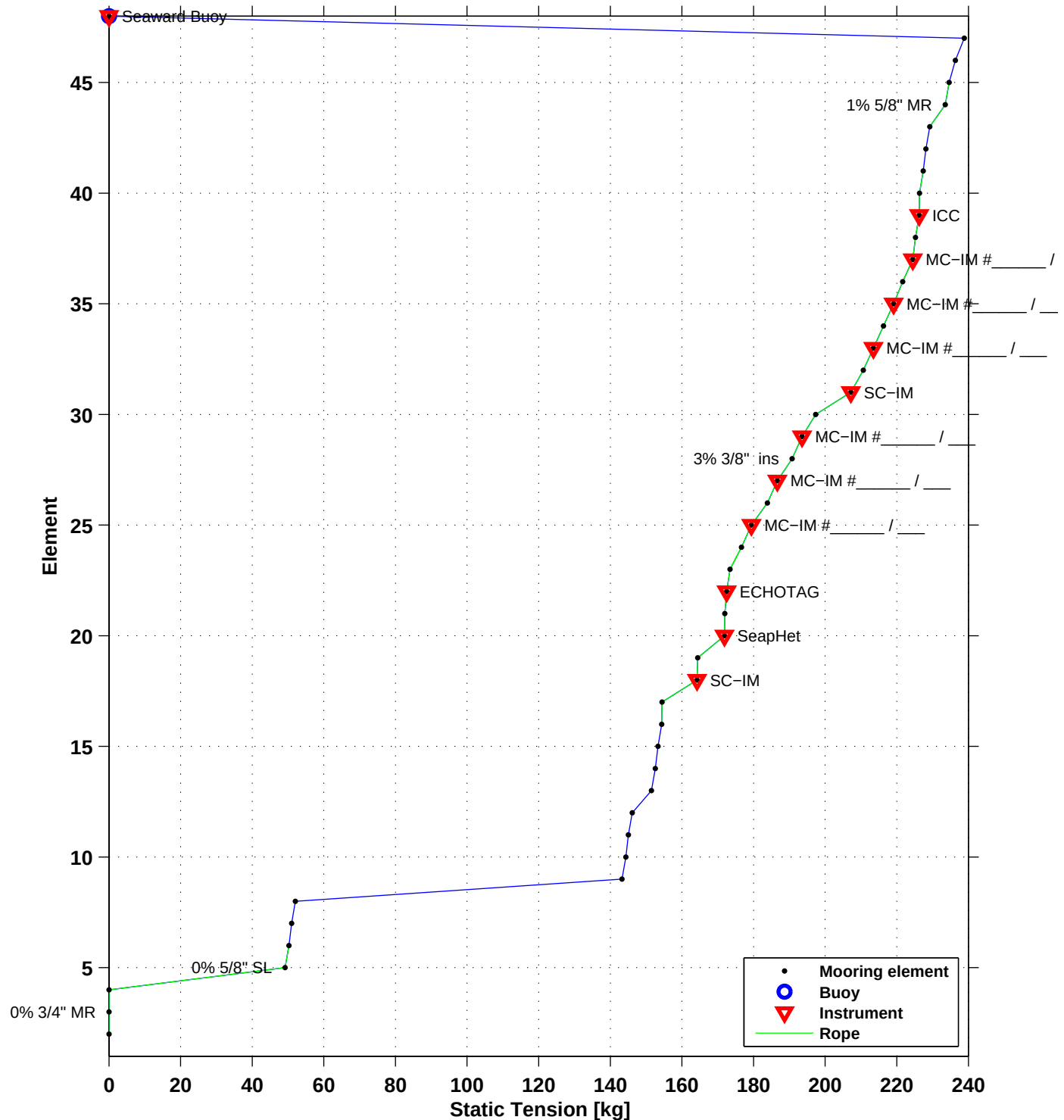
Backup Buoyancy

NO Current Vertical anchor load : 0 kg
Wet safe anchor weight : 0 kg (150%, max: 500 kg)
Wet / Dry Clump anchor weight : -0 kg / 1250 kg

Delmar Surface Buoy 100m**Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014**

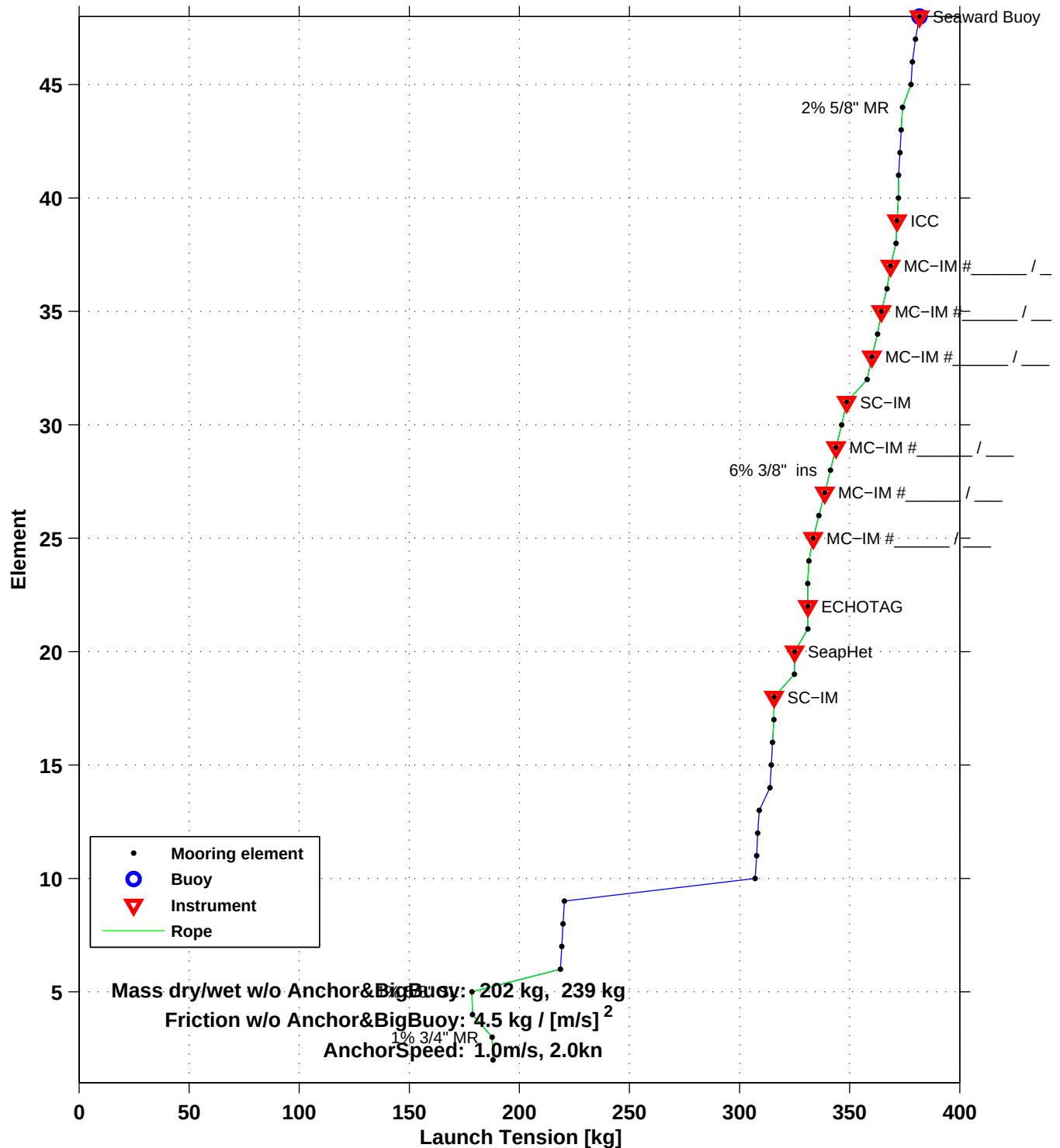
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg

Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)

No Current Static Tension

NO Current Vertical anchor load : 0 kg
 Wet safe anchor weight : 0 kg (150%, max: 500 kg)
 Wet / Dry Clump anchor weight : -0 kg / 1250 kg

Delmar Surface Buoy 100m		
Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014		
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg		
Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)		
Steady State Launch Tension		



NO Current Vertical anchor load: 0 kg
 Wet safe anchor weight: 0 kg (150%, max: 500 kg)
 Wet / Dry Clump anchor weight: -0 kg / 1250 kg

Delmar Surface Buoy 100m**Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014**

Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg

Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)

No Current Static Solution - Parameter

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
48	420	Seaward Buoy MET	2.6	238.8	0.0	100.0	0.0	0.0	0.0	0.00	0.00
47	35	AS 8t 1"	0.1	-2.5	-238.8	97.4	2.6	238.8	0.7	0.00	0.00
46	55	PL 5t 1"	0.2	-1.7	-236.3	97.3	2.8	236.3	1.2	0.00	0.00
45	33	AS 5t 3/4"	0.1	-1.1	-234.6	97.2	2.9	234.6	1.3	0.00	0.00
44	182	5/8" MR	1.0	-4.3	-233.6	97.1	3.4	233.6	1.5	0.00	-0.00
43	33	AS 5t 3/4"	0.1	-1.1	-229.2	96.1	4.0	229.2	1.3	0.00	0.00
42	53	PL 3t 3/4"	0.1	-0.7	-228.1	96.0	4.1	228.1	1.9	0.00	0.00
41	33	AS 5t 3/4"	0.1	-1.1	-227.4	95.9	4.1	227.4	1.3	0.00	0.00
40	104	3/8" ins	0.3	-0.1	-226.3	95.8	4.3	226.3	3.5	0.00	0.03
39	341	ICC	0.0	-1.0	-226.2	95.5	4.5	226.2	2.3	0.00	0.00
38	104	3/8" ins	2.5	-0.8	-225.2	95.5	5.7	225.2	3.5	0.00	0.03
37	336	MC-IM	0.0	-2.8	-224.4	93.0	7.0	224.4	2.2	0.00	0.00
36	104	3/8" ins	8.0	-2.5	-221.6	93.0	11.0	221.6	3.4	0.00	0.03
35	336	MC-IM	0.0	-2.8	-219.1	85.0	15.0	219.1	2.2	0.00	0.00
34	104	3/8" ins	9.0	-2.9	-216.3	85.0	19.5	216.3	3.3	0.00	0.03
33	336	MC-IM	0.0	-2.8	-213.5	76.0	24.0	213.5	2.1	0.00	0.00
32	104	3/8" ins	11.0	-3.5	-210.7	76.0	29.5	210.7	3.2	0.00	0.03
31	331	SC-IM	0.0	-9.8	-207.2	65.0	35.0	207.2	2.1	0.00	0.00
30	104	3/8" ins	12.0	-3.8	-197.4	65.0	41.0	197.4	3.0	0.00	0.03
29	336	MC-IM	0.0	-2.8	-193.6	53.0	47.0	193.6	1.9	0.00	0.00
28	104	3/8" ins	13.0	-4.1	-190.8	53.0	53.5	190.8	2.9	0.00	0.03
27	336	MC-IM	0.0	-2.8	-186.6	40.0	60.0	186.6	1.9	0.00	0.00
26	104	3/8" ins	14.0	-4.4	-183.8	40.0	67.0	183.8	2.8	0.00	0.03
25	336	MC-IM	0.0	-2.8	-179.4	26.0	74.0	179.4	1.8	0.00	0.00
24	104	3/8" ins	10.0	-3.2	-176.6	26.0	79.0	176.6	2.7	0.00	0.03
23	104	3/8" ins	3.0	-1.0	-173.4	16.0	85.5	173.4	2.7	0.00	0.03
22	398	ECHOTAG	0.0	-0.5	-172.5	13.0	87.0	172.5	1.7	0.00	0.00
21	104	3/8" ins	0.3	-0.1	-172.0	13.0	87.2	172.0	2.6	0.00	0.03
20	348	SeapHet	1.2	-7.5	-171.9	12.7	87.9	171.9	1.7	0.00	0.00
19	104	3/8" ins	0.5	-0.2	-164.4	11.4	88.8	164.4	2.5	0.00	0.03
18	331	SC-IM	0.0	-9.8	-164.2	10.9	89.1	164.2	1.6	0.00	0.00
17	104	3/8" ins	0.2	-0.1	-154.4	10.9	89.2	154.4	2.4	0.00	0.02
16	33	AS 5t 3/4"	0.1	-1.1	-154.4	10.7	89.3	154.4	0.9	0.00	0.00
15	53	PL 3t 3/4"	0.1	-0.7	-153.3	10.7	89.4	153.3	1.3	0.00	0.00
14	33	AS 5t 3/4"	0.1	-1.1	-152.6	10.6	89.5	152.6	0.8	0.00	0.00
13	94	Swivel 5t	0.2	-5.3	-151.5	10.5	89.6	151.5	1.5	0.00	0.00
12	33	AS 5t 3/4"	0.1	-1.1	-146.1	10.3	89.8	146.1	0.8	0.00	0.00
11	53	PL 3t 3/4"	0.1	-0.7	-145.1	10.2	89.9	145.1	1.2	0.00	0.00
10	33	AS 5t 3/4"	0.1	-1.1	-144.3	10.1	90.0	144.3	0.8	0.00	0.00
9	526	Pig lead	0.5	-91.2	-143.3	10.0	90.3	143.3	2.4	0.00	0.00
8	33	AS 5t 3/4"	0.1	-1.1	-52.1	9.5	90.5	52.1	0.3	0.00	0.00
7	53	PL 3t 3/4"	0.1	-0.7	-51.0	9.4	90.6	51.0	0.4	0.00	0.00
6	33	AS 5t 3/4"	0.1	-1.1	-50.3	9.3	90.7	50.3	0.3	0.00	0.00
5	162	5/8" SL	9.2	-49.2	-49.2	9.2	95.4	49.2	0.4	0.00	0.00
4	32	AS 3t 5/8"	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.00	0.00
3	183	3/4" MR	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.00	0.00
2	33	AS 5t 3/4"	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.00	0.00
1	533	Anchor (3x400+50	0.0	0.0	NaN	0.0	100.0	0.0	0.0	0.00	0.00

Max. 3.5% Static Tension at:

40 104 3/8" ins 0.3 -0.1 -226.3 95.8 4.3 226.3 3.5 0.00 0.03

Delmar Surface Buoy 100m Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014											
Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)											
No Current Static Solution – Parameter, cont.											

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B.[kg]	Height [m]	Design Dpt [m]	Tension [kg] [%]	Stretch [m] [%]
=====									
		Vertical anchor load	:	0	kg				
		Wet Clump Anchor weight	:	-0	kg				
		Safe Clump Anchor weight	:	0	kg				

Delmar Surface Buoy 100m**Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014**

Source: 14-Jun-2013 21:54:26, .../project/sccoos/delmar/dmar1_06/design/dmar1_07.cfg

Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)

Steady State Launch Tension – Parameter: descent at 1.01 m/s, 2.0 kn

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m^2]	Ct	Drag [kg]	LaunchTension [kg]	[%]
48	420	Seaward Buoy MET	2.6	238.8	1.500	1.767	1.50	142.90	381.7	3.8
47	35	AS 8t 1"	0.1	-2.5	0.100	0.008	1.50	0.64	379.9	1.2
46	55	PL 5t 1"	0.2	-1.7	0.075	0.004	1.50	0.36	378.5	1.9
45	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	377.9	2.1
44	182	5/8" MR	1.0	-4.3	0.025	0.079	0.12	0.53	374.0	2.3
43	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	373.4	2.1
42	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.23	372.9	3.1
41	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	372.2	2.1
40	104	3/8" ins	0.3	-0.1	0.012	0.011	0.06	0.04	372.1	5.7
39	341	ICC	0.0	-1.0	0.100	0.008	1.00	0.42	371.6	3.7
38	104	3/8" ins	2.5	-0.8	0.012	0.094	0.06	0.31	371.1	5.7
37	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	368.5	3.7
36	104	3/8" ins	8.0	-2.5	0.012	0.302	0.06	0.99	367.0	5.6
35	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	364.4	3.6
34	104	3/8" ins	9.0	-2.9	0.012	0.339	0.06	1.11	362.7	5.6
33	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	360.1	3.6
32	104	3/8" ins	11.0	-3.5	0.012	0.415	0.06	1.36	358.0	5.5
31	331	SC-IM	0.0	-9.8	0.110	0.010	1.00	0.51	348.7	3.5
30	104	3/8" ins	12.0	-3.8	0.012	0.452	0.06	1.48	346.4	5.3
29	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	343.8	3.4
28	104	3/8" ins	13.0	-4.1	0.012	0.490	0.06	1.61	341.3	5.3
27	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	338.7	3.4
26	104	3/8" ins	14.0	-4.4	0.012	0.528	0.06	1.73	336.0	5.2
25	336	MC-IM	0.0	-2.8	0.075	0.004	1.00	0.24	333.5	3.3
24	104	3/8" ins	10.0	-3.2	0.012	0.377	0.06	1.24	331.5	5.1
23	104	3/8" ins	3.0	-1.0	0.012	0.113	0.06	0.37	331.0	5.1
22	398	ECHOTAG	0.0	-0.5	0.120	0.011	1.00	0.61	331.1	3.3
21	104	3/8" ins	0.3	-0.1	0.012	0.011	0.06	0.04	331.0	5.1
20	348	SeapHet	1.2	-7.5	0.200	0.031	0.90	1.52	325.0	3.3
19	104	3/8" ins	0.5	-0.2	0.012	0.019	0.06	0.06	324.9	5.0
18	331	SC-IM	0.0	-9.8	0.110	0.010	1.00	0.51	315.6	3.2
17	104	3/8" ins	0.2	-0.1	0.012	0.008	0.06	0.02	315.6	4.9
16	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	314.9	1.7
15	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.23	314.4	2.6
14	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	313.8	1.7
13	94	Swivel 5t	0.2	-5.3	0.100	0.008	1.20	0.51	308.9	3.1
12	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	308.3	1.7
11	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.23	307.8	2.6
10	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	307.1	1.7
9	526	Pig lead	0.5	-91.2	0.300	0.071	1.20	4.57	220.5	3.7
8	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	219.8	1.2
7	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.23	219.3	1.8
6	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.41	218.6	1.2
5	162	5/8" SL	9.2	-49.2	0.025	2.356	0.07	8.99	178.4	1.5
4	32	AS 3t 5/8"	0.0	0.0	0.064	0.003	1.50	0.26	178.7	1.5
3	183	3/4" MR	0.0	0.0	0.030	2.262	0.07	8.93	187.6	0.8
2	33	AS 5t 3/4"	0.0	0.0	0.080	0.005	1.50	0.41	188.0	1.0
1	533	Anchor (3x400+50	0.0	0.0	1.000	0.785	1.20	50.81	238.8	4.0
Max. 5.7% Launch Tension at:										
40	104	3/8" ins	0.3	-0.1	0.012	0.011	0.06	0.04	372.1	5.7

Delmar Surface Buoy 100m**Deployment 17-June-2013 32N55.810, 117W18.990 Recovery 2014**

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Author: 14-Jun-2013 21:54:36, begler@t60(GLNX86)

Steady State Launch Tension – Parameter: descent at 1.01 m/s, 2.0 kn, cont.

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m^2]	Ct	Drag [kg]	LaunchTension [kg]	
=====										
Mass dry / wet w/o Anchor:			202 kg,	239 kg						
Drag / Friction w/o Anchor:			45.1 kg,	43.9 kg/[m/s]^2						
Dry/Wet Clump Anchor weight:			1250 kg,	-0 kg						
Steady State AnchorSpeed			: 1.01 m/s, 2.0 kn							