

0300

LONG

02460.2336

1

9

Sample No.	Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	1		750	✓	1304	17.0	11.1	✓	✓	✓	1	1				
2	2		750	✓			13.8		✓		1	1				
3	3		361	✓	1028	17.0	2.2		✓		3	3				
4	4		361	✓					✓		1	1				
5	5		190.3	✓	1366	17.5	3.3		✓		5	5				
6	6		190.3	✓					✓							
7	7		99	✓	1152	18.0	4.4		✓		7	2				
8	8		99	✓					✓							
9	9	max	72	✓	1524	18.0	5.5	6	1	9	10	9/10	empty	9	9	✓
10	10	max	72	✓					✓							
11	11		40	✓	1700	18.4	6.6		2		11	11				
12	12		40	✓					✓							
13	13		33	✓	1170	18.6	7.7		3		13	13				
14	14		33	✓					✓							
15	15		36	✓	1503	18.8	8.8	5	4				empty	9	9	✓
16	16		36	✓					✓		16	16				
17	17		23	✓	1501	18.9	9.9	4	5		17	17				
18	18		23	✓					✓							
19	19		16	✓	1423	16.0	10.10	3	6				empty	9	9	✓
20	20		16	✓					✓		20	20				
21	21		10	✓	1525	19.0	11.11	1	7		21		empty	9	9	✓
22	22		10	✓					✓			22				
23	23		4	✓	1524	18.9	12.12	2	8		23					
24	24		4	✓					✓			24	empty	9	9	✓

SAMPLE LOG

Date (utc) 2000-01-07

Time (utc) 2015

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20000107, 2019, 001

CTD 002

-38.7174193

26.232851

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Green

A

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	Chl	POC	DNA	Nuts	Salts						
1	✓	1249		1539	18.19	11.13				1	1						
2		249						10									
3	✓	600		1541	19.2	24.16				3	3						
4		600															
5		455		1139	19.2	34.15				5	5						
6		455															
7		300		1841	19.2	44.16				7	7						
8		300															
9		200		17413	19.2	54.14				9	9						
10		200															
11		150		1235	19.2	64.18				11	11						
12		150															
13		100		1229	N/A	7.19				13	13						
14		100															
15		80		1151	N/A	8.26				15	15						
16		65															
17		65		6416	16.7	24.21				17	17						
18		65															
19		410		1465	19.0	10.24				19	19						
20		410															
21		200		1729	19.0	11.24				21	21						
22		200															
23		5		1351	19.0	12.24				23	23						
24		5															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

O2 temperature probe malfunctioned and replaced @ Niskin #17
 => likely all Niskins 1-19 sample from flag as bad

SAMPLE LOG

Date (utc) 2020-01-28

Time (utc) 0341

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200128.0341.003.01

CTD 003

-38.766671

27.718432

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

PURPLE

A

3

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750	✓	1304	7.6	13.25	✓	✓	✓	1	1						
2	750	750					✓	✓									
3	670	670	✓	1028	7.7	14.26	✓	✓		3	2						
4	670	670	✓				✓	✓									
5	510	510		1366	9.0	15.25	✓	✓		5	3						
6	510	510					✓	✓									
7	270	270		1152	11.6	16.58	✓	✓		7	4						
8	270	270					✓	✓									
9	100	100		1824	13.1	17.37	✓	✓		9	5						
10	100	100					✓	✓									
11	54.9	54.9		1700		18.30	✓	✓		11	6						
12	54.9	54.9					✓	✓									
13	43	43.2		1170	15.5	19.51	✓	✓		13	7						
14	43	43.2					✓	✓									
15	31	31.2		1503	16.4	20.25	✓	✓		15	8						
16	31	31.2					✓	✓									
17	20	18.15		1771	12.0	21.58	✓	✓		17	9						
18	20	18.15					✓	✓									
19	14.5	14.5		1423	18.1	22.04	✓	✓		19	10						
20	14.5	14.5					✓	✓									
21	9	9.3		1625	18.1	23.35	✓	✓		21	11						
22	9	9.3					✓	✓									
23	3.4	5.5		1724	18.2	24.86	✓	✓		23	12						
24	3.4	5.5	✓				✓	✓									
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

42.3 for filter max

Bottom 33 to 54.9 m

3 thermocouples used for 400m station

SAMPLE LOG		Date (utc) 2000-01-06		Time (utc) 2145	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20000106.0112.001	CTD 004		-38.2105	50.1489
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE	A	Z (1-12)			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750		~	1304	9.4	1/32	~			1	1						
2	750																
3	680			1028	11.0	2/38				3	2						
4	680																
5	480		~	1366	13.1	2/39	~			5	3						
6	480																
7	200			1152	15.2	4/40				7	4						
8	280																
9	150		~	1824	16.4	3/41	~			9	5						
10	150							1									
11	100			1700	18.0	6/32				11	6						
12	100							2									
13	70		~	1170	18.6	7/42	~			13	7						
14	90							3									
15	49			1503	19.7	6/43				15	8						
16	49							4	XX								
17	40		~	1291	19.8	0/41	~			17	9						
18	40							5									
19	26			1423	19.2	10/06				19	10						
20	26																
21	19		~	1625	19.7	1/42	~			21	11						
22	19							7									
23	12			1724		2/41				23	12						
24	12							8	XY								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 1/30/2020		Time (utc) 0235	
CRUISE ID SAMW TN376	Event ID 20200130.0235	Station ID CTD 805		LAT 39.1883 S	LONG 33.2991 E
Nutrient rack BLACK	Oxygen box A	Salt box Z	Here Be Dragons		

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	Ba			
1	750			1304	6.5	1/49				1	13				
2	750											O ₂ min			
3	640			1028	7.0	13/50				2	14				
4	640														
5	200			1366	11.0	14/51				3	15				
6	200														
7	115			1152	11.7	15/52				4	16				
8	115														
9	70			1824	12.8	16/53				5	17				
10	70							1							
11	50														MISURE
12	50			1700	14.0	17/54		2		6	18				
13	38			1170	15.2	18/55		6		7	19				
14	38							3							
15	30			1503	16.0	19/56		5		8	20				
16	30							4							
17	22			1771	16.0	20/57		4		9	21				
18	22							5							
19	14			1423	16.0	21/58		3		10	22				
20	14							6							
21	10			1625	16.0	22/59		2		11	23				
22	10							7							
23	7			1724	15.8	23/60		1		12	24				
24	7							8							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

23 leaking
11 misfire (no water)
12 failed leak test
21 failed leak test

SAMPLE LOG		Date (utc) 2020-01-31		Time (utc) 0820	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200131.0820.006	CTD 006		-39.5697	34.9793
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE	A	H			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Vtemp	DIC	C14	POC	DNA	Nutrs	Salts						
1	750	750.1	✓	1304	7.0	1.41	✓	✓	✓	1	1						
2	750	750.1	✓				✓	✓	✓								
3	500	500.5	✓	1028	9.0	2.62	✓	✓	✓	3	2						
4	500	500.5	✓				✓	✓	✓								
5	460	460.3	✓	1366	9.7	3.43	✓	✓	✓	5	3						
6	460	460.3	✓				✓	✓	✓								
7	300	299.5	✓	1152	11.3	4.64	✓	✓	✓	7	4						
8	300	299.5	✓				✓	✓	✓								
9	150	149.4	✓	1824	12.7	5.65	✓	✓	✓	9	5						
10	150	149.4	✓				✓	✓	✓								
11	80	80.1	✓	1700	13.5	6.66	✓	✓	✓	11	6						
12	80	80.1	✓				✓	✓	✓								
13	60	60.1	✓	1170	13.9	7.67	✓	✓	✓	13	7						
14	60	60.1	✓				✓	✓	✓								
15	50	50.0	✓	1803	14.8	8.69	✓	✓	✓	15	8						
16	50	50.0	✓				✓	✓	✓								
17	40	40.0	✓	1771	14.5	9.68	✓	✓	✓	17	9						
18	40	40.0	✓				✓	✓	✓								
19	36	36.1	✓	1423	13.0	10.70	✓	✓	✓	19	10						
20	36	36.1	✓				✓	✓	✓								
21	20	19.9	✓	1625	17.7	11.71	✓	✓	✓	21	11						
22	20	19.9	✓				✓	✓	✓								
23	10	3.0	✓	1724	17.7	12.72	✓	✓	✓	23	12						
24	10	3.0	✓				✓	✓	✓								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5	Surface					

REMARKS:

SAMPLE LOG

Date (utc)

2020-02-01

Time (utc)

0052

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200201.007

CTD 007

-39.4752

34.1997

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

A

C

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nus	Salts						
1	750			1559	7.0	1.33	✓	✓		1	1						
2	750							✓									
3	650			1541	7.6	2.34		✓		2	2						
4	650							✓									
5	450			1139	9.3	3.25		✓		3	3						
6	450							✓									
7	290			1841	11.0	4.36		✓		4	4						
8	290							✓									
9	210			1743	11.6	5.29		✓		5	5						
10	210							✓									
11	90			1735	13.11	6.78		✓		6	6						
12	90							✓									
13	74			1277	14.10	2.99		✓		7	7						
14	74							✓									
15	58			1151	15.5	8.90		✓		8	8						
16	58							✓									
17	42			646	18.0	9.81		✓		9	9						
18	42							✓									
19	27			1465	18.2	10.82		✓		10	10						
20	27							✓									
21	20			1729	18.3	11.83		✓		11	11						
22	20							✓									
23	13			1351	18.3	12.84		✓		12	12						
24	13							✓									

Size (liter)

1.0

1.0

n/a

1.0

1.0

3 to 4

1.2

0.3

0.5

REMARKS:

SAMPLE LOG		Date (utc) 2020-02-01		Time (utc) 2349	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200201.2349.008	CTD 008		-40.4995	34-2006
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE	A	G			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	D19	C14	POC	DNA	Nuts	Salts				
1	750	749.8	✓	1304	6.7	1.85	✓	✓	✓	1	13				
2	750	749.8	✓				✓	✓	✓						
3	625	624.9	✓	1028	7.5	2.86	✓	✓	✓	2	14				
4	625	624.9	✓				✓	✓	✓						
5	500	500.4	✓	1366	7.9	3.82	✓	✓	✓	3	15				
6	500	500.4	✓				✓	✓	✓						
7	250	250.0	✓	1152	11.0	4.88	✓	✓	✓	4	16				
8	250	250.0	✓				✓	✓	✓						
9	100	100.2	✓	1824	13.5	5.89	✓	✓	✓	5	17				
10	100	100.2	✓				✓	✓	✓						
11	70	70.0	✓	1700	14.4	6.90	✓	✓	✓	6	18				
12	70	70.0	✓				✓	✓	✓						
13	51	51.1	✓	1170	16.6	7.91	✓	✓	✓	7	19				
14	51	51.1	✓				✓	✓	✓						
15	40	40.2	✓	1503	16.6	8.92	✓	✓	✓	8	20	Flur	max		
16	40	40.2	✓				✓	✓	✓						
17	29	29.7	✓	1791	16.6	9.93	✓	✓	✓	9	21				
18	29	29.7	✓				✓	✓	✓						
19	19	18.7	✓	1423	16.7	10.94	✓	✓	✓	10	22				
20	19	18.7	✓				✓	✓	✓						
21	14	13.9	✓	1625	16.7	11.95	✓	✓	✓	11	23				
22	14	13.9	✓				✓	✓	✓						
23	9	8.8	✓	1724	16.7	12.96	✓	✓	✓	12	24	Surf			
24	9	8.8	✓				✓	✓	✓						
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS: NISKIN 12 FAILED SPIGOT LEAK TEST - TEMP MEASURED & SAME AS NISKIN 11 SO ALL GOOD.

SAMPLE LOG

Date (utc)

2020-02-02

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200202-0720

CTD 009

40.00.041'S

034.11.969'E

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLUE

A

C

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	G14	POC	DNA	Nuts	Salts						
1	750	750.0	✓	1304	6.7	1.97	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	750	750.0	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	690	690.1	✓	1028	7.0	2.98	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	690	690.1	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	600	600.5	✓	1366	7.7	3.99	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6	600	600.5	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	480	480.2	✓	1152	9.1	4.100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	480	480.1	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	300	300.1	✓	1824	11.4	5.101	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	300	300.1	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11	145	145.6	✓	1700	13.1	6.102	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12	145	145.6	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	90	90.2	✓	1170	14.5	7.103	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
14	90	90.2	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15	70	70.0	✓	1503	15.3	8.104	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16	70	70.0	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17	46	45.5	✓	1771	17.6	9.105	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18	46	45.5	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19	40	39.9	✓	1423	17.7	10.106	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	40	39.9	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21	20	20.1	✓	1625	17.8	11.107	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22	20	20.1	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23	3.6	3.5	✓	1724	18.0	12.108	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24	3.6	3.5	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Size (liter)

1.0

1.0

n/a

1.0

3 to 4

1.2

0.3

0.5

REMARKS:

SAMPLE LOG		Date (utc) 2/2/20		Time (utc) 1230	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200202.1200	CTD 010		-39.4752	34.1997
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Black	A+ ¹ E	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1		750		1559	6.7	13.109		1		1.	13						
2																	
3		600		1591	7.8	14.110				2	14						
4																	
5		450		1139	9.5	15.111		2		3	15						
6																	
7		300		1841	11.0	16.112				4	16						
8																	
9		201		1743	11.4	12.113		3		5	17						
10																	
11		150		1735	12.0	18.114				6	18						
12																	
13		100		1297	13.4	11.115				7	19						
14								4									
15		80		1157	14.0	20.116		5		8	20						
16																	
17				646	14.0	21.117				9	21						
18		60															
19				1465	15.0			6									
20		40		Box E 1762	16.0	22.118				10	22						
21		20		1929	18.0	23.119				11	23						
22								7									
23		5		1351	18.5	16.120				12	24						
24																	
Size (liter)				1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5					

REMARKS: * confusion w/ accidental triplicate bottle are @ 15, 16, 17 resulted in following errors:
 1. DIC/H moved from Nisk #19 to #20, thereby missing a sample from 60m depth (Nisk #18 & 19)
 2. nutrients and O₂ sampled 2x from 80m depth, but did sample from all depths

SAMPLE LOG

Date (utc) 02/02

Time (utc) 1630

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200202.1610

CTD 011

-39.0015

34.2000

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Blue

E

Z

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750			1169	7.6	1.121				17	1						
2																	
3	600			1792	9.0	2.122				12	2						
4																	
5	450			616	10.7	3.123				13	3						
6								1									
7	300			1717	12.0	4.124				14	4						
8																	
9	200			1149	13.2	5.125				15	5						
10								2									
11	150			1811	14.0	6.126				16	6						
12																	
13	100			1715	15.1	7.127				17	7						
14								3									
15	80			711	15.6	8.128				18	8						
16								4									
17	50			1610		9.129				19	9						
18				1640	16.2	9.129		5		9	9						
19	40			1349	16.9	10.130				10	10						
20								6									
21	20			1751	18.9	11.131				11	11						
22																	
23	50			1135	20.0	12.132				12	12						
24								8									
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

#4
mistake
end
cap open
caught on
bottle

#17
longhand caught
end cap

-drippy

SAMPLE LOG

Date (utc)

2020-02-03

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200203.013

CID 013

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Yellow.

A

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salts						
1	750	750.2		1304	7.1	1.145				1	13						
2	750	750.2															
3	590	590.0		1028	8.7	2.146				2	14						
4	590	590.0															
5	500	500.3		1366	9.6	3.147				3	15						
6	500	500.3															
7	440	440.1		1152	10.2	4.148				4	16						
8	440	440.1															
9	380	380.4		1224	11.0	5.149				5	17						
10	380	380.4															
11	240	240.1		1700	11.6	6.150				6	18						
12	240	240.1															
13	140	140.7		1190	12.4	7.151				7	19						
14	140	140.7															
15	97	98.5		1503	13.4	8.152				8	20						
16	97	98.5															
17	70	70.1															
18	70	70.1		1771	13.8	9.153				9	21						
19	52	52.6		1223	15.0	10.154				10	22						
20	52	52.6															
21	30	30.0		1625	17.9	11.155				11	23						
22	30	30.0															
23	10	10.0		1724	17.7	12.156				12	24						
24	10	10.0															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 2020031545		Time (utc) 1545	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		14		-39.475	34.8335
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Blue	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutrs	Salts						
1	750	750		1559	8.0	13.157				1	1						
2																	
3	600	661		1541	9.2	14.158				2	2						
4																	
5	450	450		1139	11.0	15.159				3	3						
6																	
7	340	340		1841	11.9	16.160				4	4						
8																	
9	250	250		1743	12.0	17.161				5	5						
10																	
11	150	150		1735	12.7	18.162		1		6	6						
12								2									
13	100	100		1292	13.5	19.163		3		7	7						
14																	
15																	
16	80	79		1151	13.7	20.164				8	8						
17																	
18								4									
*19	60	60		1246	15.7	21.165		5		9	9						
*20	40	40		1465	16.8	22.166		6		10	10						
21	20	20		1329	17.0	23.167				11	11						
22								7	X								
23	50.5	4.1		1351	17.3	24.168				12	12						
24								8	X								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 20200203, 1842		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		010 015		-39.4748	34.2003
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
black	I	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	725			1148	7.0	1,169				1	13						
2																	
3	600			1460	8.0	2,176				2	14						
4																	
5	450			1702	9.7	3,171				3	15						
6																	
7	351			1644	11.0	4,132				4	16						
8																	
9	200			1787	12.0	5,173				5	17						
10																	
11	149			1029	13.0	6,174		1		6	18						
12								2									
13	99			1602	14.0	7,175		3		7	19						
14																	
15	80			1746	14.1	8,176		4		8	20						
16																	
17	50			1784	15.3	9,177		5		9	21						
18																	
19	33			1732	17.0	10,179				10	22						
20								6									
21	20			1786	17.6	11,179				11	23						
22																	
23	4			1750	18.0	12,180				12	24						
24								8									
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

spigot 100

*FI

SAMPLE LOG		Date (utc) 2020-02-03		Time (utc) 22 41	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200203.2241	CTD 016		-39.4754	-33.5653
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
yellow	I	G			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750			1129.	6.6	25.181				1	1						
2	750																
3	550			1309	8.10	26.182				2	2						
4	550																
5	450			1538	9.3	22.183				3	3						
6	450																
7	350			1091.	10.4	28.184				4	4						
8	350																
9	250			1609.	11.0	29.185				5	5						
10	250							1									
11	150			1720	12.3	30.186				6	6						
12	150							2									
13	100			692	12.7	31.187				7	7						
14	100							3									
15	80			731	12.10	32.188				8	8						
16	80							4									
17	60			1094.	13.3	33.189				9	9						
18	60							5									
19	30			1245	16.16	34.190				10	10						
20	30							6									
21	15			1535	17.10	35.191				11	11						
22	15							7									
23	50			1797	17.11	36.192				12	12						
24	50							8									
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 2020.02.04		Time (utc) 02:22	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200204.017	SN 017		39°28.490'S	032°34.977'E
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Yellow	E	Z			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salt				
1	750	750.1	~	1762	6.2	18.193	✓	~	~	13	✓				
2	750	750.1	~				✓	~	~		✓				
3	580	580.1	~	1169	7.3	19.194	~	~	~	14	2				
4	580	580.1	~				~	~	~						
5	440	440.6	~	1792	9.0	20.195	~	~	~	15	3				
6	440	440.0	~				~	~	~						
7	200	200.0	~	616	11.0	21.196	~	~	~	16	4				
8	200	200.0	~				~	~	~						
9	105	105.1	~	1310	11.8	22.197	~	~	~	17	5				
10	105	105.1	~				~	~	~						
11	38	37.9	~	1149	14.7	23.198	~	~	~	18	6				
12	23	23.0	~	1811	14.9	24.199	~	~	~	19	7				
13	23	23.0	~				~	~	~						
14	18	17.7	~	1715	15.0	33.200	~	~	~	20	8				
15	18	17.7	~				~	~	~						
16	18	17.7	~				~	~	~						
17	13	13.2	~	1711	15.6	38.201	~	~	~	21	9				
18	13	13.2	~				~	~	~						
19	8.4	8.0	~	1610	16.0	39.202	~	~	~	22	10				
20	8.4	8.0	~				~	~	~						
21	6.1	5.9	~	1314	16.1	40.203	~	~	~	23	11				
22	6.1	5.9	~				~	~	~						
23	3.9	3.9	~	1751	16.2	41.204	~	~	~	24	12				
24	3.9	3.9	~				~	~	~						

Size (liter)

1.0

1.0

n/a

1.0

1.0

3 to 4

12

0.3

0.5

Needs new O-ring on nipple

REMARKS:

SAMPLE LOG		Date (utc) 2.5.2020		Time (utc) 18:40	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200205.1840	18.02		-35.8820	36.9710
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Blue	A	G			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutis	Salts						
1	750	750		1304	10.0	1.205				1	13	BeSO ₄					
2												Ozmia					
3	500	500		1028	12.5	2.206				2	14						
4																	
5	350	351		1366	14.0	3.207				3	15						
6																	
7	200	202		1152	16.0	4.208				4	16						
8																	
9	92	93		1809	18.3	5.209				5	17	Δ Tran					
10																	
11	72	84		1700	18.7	6.210				6	18	CHL					
12																	
13	62	62		1170	20.7	7.211				7	19						
14																	
15	52	52		1505	21.0	8.212				8	20						
16																	
17	38	38		1721	21.0	9.213				9	21						
18																	
19	33.5	33		1403	21.1	10.214				10	22						
20																	
21	24.3	24		1625	21.2	11.215				11	23						
22																	
23	15	15		1924	21.4	12.216				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5	Be-16					

REMARKS:

*chl,max

SAMPLE LOG		Date (utc) 2020-02-06		Time (utc) 2302	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200206.2302	CTD 019		-36.6168	37.6274
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
black	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750			1304	10.7	13.212				1	1						
2	750																
3	600			1028	12.7	14.218				2	2						
4	600																
5	420			1366	13.3	15.219				3	3						
6	420																
7	300			1152	14.6	16.220				4	4						
8	300																
9	200			1824	16.0	17.221				5	5						
10	200																
11	150			1700	17.0	18.221				6	6						
12	150																
13	100			1170	18.0	19.223				7	7						
14	100																
15	75			1503	18.4	20.224				8	8						
16	75																
17	60			1771	19.1	21.225				9	9						
18	60																
19	40			1423	20.1	22.226				10	10						
20	40																
21	20			1625	20.7	23.227				11	11						
22	20																
23	STC			1724	21.6	24.228				12	12						
24	STC																
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

leak

SAMPLE LOG		Date (utc) 2020-02-07		Time (utc) 0235	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200207.0235	CTD 020		-036.2004	037.6273
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLACK	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750.3		1559	8.1	25.29	✓	✓		✓	13	13					
2	750	750.3															
3	650	649.7		1541	9.1	26.230					14	14					
4	650	649.7															
5	500	500.1		1139	10.6	29.231					15	15					
6	500	500.1															
7	345	346.1		1841	11.7	28.232					16	16					
8	345	346.1															
9	240	240.8		1743	12.7	29.233					17	17					
10	240	240.8															
11	140	140.1		1735	14.0	30.234					18	18					
12	140	140.1															
13	71.5	71.4		M	1.5	F 1 R E											
14	71.5	71.4		1277	16.0	31.235					Run out of water						
15	56.0	57.1		M	1.5	F 1 R E											
16	56.0	57.1		1181	17.3	32.236					Run out of water	FL	max				
17	40.6	40.6		646	20.0	33.237					21	21					
18	40.6	40.6															
19	26.1	26.1		1465	20.7	35.238					22	22					
20	26.1	26.1															
21	18.9	18.9		1729	21.0	36.239					23	23					
22	18.9	18.9															
23	12.2	12.3		1351	21.0	39.240					24	24					
24	12.2	12.3															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG

Date (utc)

2020-02-07

Time (utc)

CRUISE ID

SAWV TN376

Event ID

20200207.0936

Station ID

C7D 021

LAT

-035.8821

LONG

037.6299

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

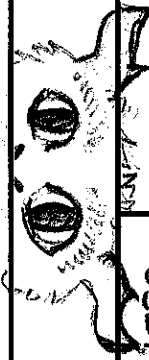
GRIN

A

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750.0	✓	1304	7.6	241.1		✓	✓	13	13						
2	750	750.0						✓	✓								
3	600	599.8	✓	1028	9.1	242.2		✓	✓	14	14						
4	600	599.8						✓	✓								
5	456	450.1		1366	10.7	243.3		✓	✓	15	15						
6	456	450.1		1559	11.0			✓	✓	10	11						
7	350	350.2		1152	10.3			✓	✓								
8	350	350.2		1541	12.0	244.4		✓	✓	16	16						
9	280	280.2		1824	12.6	245.5		✓	✓	12	12						
10	280	280.2						✓	✓								
11	150	150.0		1700	14.0	246.6		✓	✓	18	18						
12	150	150.0		M18 F1RE				✓	✓								
13	100	100.5		1170	13.4	247.7		✓	✓	19	19						
14	100	100.5						✓	✓								
15	70	70.2		1203	16.0	248.8		✓	✓	20	20						
16	70	70.2						✓	✓								
17	57	57.0		1791	16.0	249.9		✓	✓	21	21						
18	57	57.0						✓	✓								
19	40	40.0		1423	17.6	250.9		✓	✓	22	22						
20	40	40.0						✓	✓								
21	20	20.1		1625	20.4	251.1		✓	✓	23	23						
22	20	20.1						✓	✓								
23	5	5.0		1724	20.7	252.1		✓	✓	24	24						
24	5	5.0						✓	✓								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	12	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc)		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200207.1201	022		-035.4027	037.6305
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE	E	G			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	749.7		1762	9.4	253.38				1	1						
2	1	1															
3	650	654.3		1169	10.5	254.39				2	2						
4	1	1															
5	420	420.3		1792	12.1	255.40				3	3						
6	420	420.3															
7	350	350		616	12.9	256.41				4	4						
8	350	350															
9	215	217		1717	14.0	257.42				5	5						
10	215	217															
11	115	114		1149	16.6	258.43				5	6						
12				MISFIRE													
13	90	90		M15 F10E								FL	MAX				
14	90	90		1811	17.5	259.44				EMPTY							
15	70	70		1715	18.4	260.45				8	8						
16	70	70															
17	55	56		711	20.6	261.46				9	9						
18	55	56															
19	36	29		1640	21.0	262.47				10	10						
20	30	29															
21	20	20		1344	21.6	263.48				11	11						
22	20	20															
23	6	11		1751	21.6	264.49				12	12						
24	6	11															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SURF

SAMPLE LOG

Date (utc) 08 Feb 2020

Time (utc) 0314

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200208.023.01

023

-35.8823

037.6286

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

E

G

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750.0		1135	8.0	13.265				1	13						
2																	
3	600	600.0		1683	9.3	14.266				2	14						
4																	
5	510	510.0		1748	10.2	15.267				3	15						
6																	
7	400	400.6		1761	11.4	16.268				4	16						
8																	
9	250	250.0		1139	13.0	17.269				5	17						
10																	
11	100	100.9		1719	14.9	18.270				6	18						
12																	
13	740	74.3		1045	15.8	19.271				7	19						
14																	
15	570	60.3		1726	16.1	20.272				8	20						
16																	
17	46.0	48.0		1841	18.0	21.273				9	21						
18																	
19	27.0	27.0		1666	20.6	22.274				10	22						
20																	
21	19.6	20.5		M15	21.5	23.275				11	23						
22		20.5		1156	20.7	23.276											
23	12.6	12.8		1758	20.7	24.276				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 2020.02.08		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200208.024.01	CTD 024		-35.8829	037.4005
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
GREEN	E	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salts						
1	750	750.1	✓	1762	8.3	25/27		✓	✓	13	13						
2	750																
3	550	549.9	✓	1169	10.0	26/28				14	14						
4																	
5	450	450.5	✓	1792	11.0	27/29				15	15						
6																	
7	200	300.0	✓	616	12.0	28/280				16	16						
8																	
9	190	190.0	✓	1717	13.8	29/281				17	17						
10																	
11	92	92.1	✓	1149	15.1	30/282				18	18						
12																	
13	75	75.0	✓	1811	15.6	31/283				19	19						
14																	
15	63	60.5	✓	1715	15.8	32/284				20	20						
16																	
17	54	54.0	✓	711	16.0	33/285				21	21						
18																	
19	40	41.0	✓	1640	17.7	34/286				22	22						
20																	
21	20	20.0	✓	1344	20.6	35/287				23	23						
22																	
23	10	9.4	✓	1751	20.7	36/288				24	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

Surface

Fluorescence max

Fluorescence max

SAMPLE LOG		Date (utc) 202002081255		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	CTD 95	25		-35.8798	36.6384
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLACK	E	Z			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1		750		1135	11.1	✓ 1,281		✓	✓	✓	✓						
2		750															
3		600		M135F1RE													
4		600		1683	12.6	2,290				2	2						
5		500		1948	13.4	3,211				3	3						
6		500															
7		400		1770	14.4	4,232				4	4						
8		400															
9		300		1139	15.2	5,243				5	5						
10		320															
11		200		1719	16.0	6,232				6	6						
12		200															
13		100		1045	17.9	7,295				7	7						
14		100															
15		80		1736	18.1	8,246				8	8						
16		80															
17		58		1841	18.7	9,247				9	9						
18		38															
19		40		1666	20.5	10,248				10	10						
20		40															
21		20		X	M135F1RE												
22		20				11,249				11	11						
23		500		1956	21.0	12,300				12	12						
24		500															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

POC

*Chromat

SAMPLE LOG		Date (utc) 20200816.1726		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 026		-41.496	30.948
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
b leak	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutrs	Salts						
1		746		1301	7.4	1.301				1	1						
2																	
3		600		1038	9.0	2.302				2	2						
4																	
5		500		1366	9.8	3.33				3	3						
6																	
7		400		1152	11.0	4.304				4	4						
8																	
9		251		1824	12.0	5.305				5	5						
10																	
11		150		1700	13.3	6.306		1		6	6						
12								2									
13		91		1170	14.4	7.307		3		7	7						
14																	
15		65		1503	15.1	8.308				8	8						
16								4									
17		48		1221	16.5	9.309				9	9						
18								5	X								
19		35		1433	18.1	10.310				10	10						
20								6									
21		20		1635	19.4	11.311				11	11						
22								7									
23		10		1724	19.5	12.312				12	12						
24								8	X								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

little leak

*ch1 May

SAMPLE LOG

CRUISE ID SAMW TN376	Event ID	Date (utc) 20080216.008	Time (utc)
Nutrient rack Blue	Oxygen box N/A	Salt box N/A	Station ID CTD 0272
Here Be Dragons			LAT -41.500
			LONG 31.215

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts
1	250										
2	700										
3	650					13				1	
4	600					14				2	
5	550									3	
6	500					15				4	
7	450										
8	400										
9	350										
10	300					16					
11	250										
12	200										
13	150										
14	130										
15	110										
16	100										
17	90					17					
18	80										
19	70										
20	60										
21	50					18					
22	40										
23	30					19					
24	20										

Size (liter)
REMARKS:

1.0

1.0

n/a

1.0

1.0

3 to 4

1.2

0.3

0.5

② AM fired "on the fly"

SAMPLE LOG		Date (utc) 20200216.2008		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 027		-41.500	31.215
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Blue	N/A	N/A			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutrs	Salts				
1	750					13				1					
2	900														
3	650														
4	600					14				2					
5	550									3					
6	500					15									
7	450														
8	400									4					
9	350					16									
10	300														
11	250														
12	200														
13	150														
14	130														
15	110														
16	100					17				5					
17	90														
18	80														
19	70														
20	60					18				6					
21	50														
22	40					19				7					
23	30									8					
24	20					20				9					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

(PAN fired "on the fly")

SAMPLE LOG		Date (utc) 20200216.2208		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 028		-41.500	31.401
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Yellow	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PM	BA
1		750		1559	6.4	21.313				1	13		
2													
3		451		1541	6.17	22.314				2	14		
4													
5		300		1612	10.4	23.355				3	15		
6													
7		151		1058	12.0	24.316				4	16		
8													
9		100		1243	12.0	25.311				5	17		
10													
11		42		1235	14.3	26.316				6	18		
12													
13		32		1224	15.0	27.319				7	19		
14													
15		27		1151	15.6	28.324				8	20		
16													
17		23		646	16.6	29.321				9	21		
18													
19		15		1465	16.9	30.322				10	22		
20													
21		71		1229	16.9	31.323				11	23		
22													
23		Soft		1351	17.0	32.324				12	24		
24													

Size (liter)

1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5					
-----	-----	-----	-----	-----	--------	-----	-----	-----	--	--	--	--	--

REMARKS:

⊗ Nisk #22 - slow drip @ bottom endcap - 7 maybe slightly off center and off endcap @ 200m, but ok

⊗ Nisk #12 - slow drip from spigot when vent closed & spigot open - due to loose top endcap seal, but not significantly off center

⊗ These slow drips likely due to loose spring buttons inside, but not major leaks.

@ endcap

leak @ spigot
CH M2

SAMPLE LOG

Date (utc)

2020-02-17

Time (utc)

0507

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200217-0507

CTD 029

-41.4994

31.7499

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Yellow

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					33.325 ✓				13							
2	700																
3	650																
4	600					34.306 ✓				14							
5	550																
6	500	485															
7	450					35.327 ✓				15							
8	400																
9	350					36.328 ✓				16							
10	300																
11	250																
12	200																
13	150					37.329				17							
14	130																
15	110	106															
16	100	101				38.330				18 ✓							
17	90																
18	80																
19	70																
20	60					39.331 ✓				19							
21	50																
22	40					40.332 ✓				20							
23	30					41.333 ✓				21							
24	15	15.8				42.334 ✓				22							

Size (liter)

1.0

1.0

n/a

1.0

1.0

3 to 4

1.2

0.3

0.5

REMARKS:

SAMPLE LOG		Date (utc) 2020-02-19		Time (utc) 0818	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200219.	CTD 080		41.5001	32.3139
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE	A	H			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750.1	/	1304	6.0	43.335				1	13						
2	750																
3		600.4	/	1028	6.9	44.45, 336				2	14						
4			/														
5		420.0	/	1366	7.0	46.332				3	15						
6																	
7		250.1	/	1152	9.0	42.338				4	16						
8																	
9		200.1	/	1824	10.7	48.336, 340				5	17						
10			/														
11		110.2	/	1782	13.2	49.341				6	18						
12																	
13		79.9	/	1170	15.7	50.342				7	19						
14			/														
15		69.9	/	1508	16.2	51.343				8	20						
16			/														
17		60.	/	1304	16.2	52.344				9	21						
18			/														
19		50	/	1028	16.4	53.345				10	22						
20																	
21		30.1	/	1625	17.0	54.346				11	23						
22																	
23		5.0		1724	17.2	55.347				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

CHL Max

SAMPLE LOG

Date (utc)

17 Feb 2020

Time (utc)

Sampling @ 12:41

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

black

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	150					56				4							
2	900																
3																	
4	600					57				5							
5																	
6																	
7	450					58				6							
8																	
9																	
10	300					59				7							
11																	
12																	
13	150					60				8							
14																	
15																	
16	100					61				9							
17																	
18																	
19																	
20	60					62				10							
21																	
22	40									11							
23	30					63				12							
24	20									13							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 20200217, 1337		Time (utc) 1337	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200217, 1337	22,01		-41.500	32.9889
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
blue					

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salts						
1		750		1559	6.0	64 348				13	1						
2																	
3		600		1541	6.7	65 349				14	a						
4																	
5		500		1642	8.0	66 350				15	3						
6																	
7		401		1055	9.3	61 351				16	4						
8																	
9		300		1243	10.4	68 352				17	5						
10								1									
11		201		1735	10.8	69 353				18	6						
12								2									
13		150		1297	11.7	6 394				19	7						
14								3									
15		101		1151	12.4	71 355				20	8						
16								4									
17		75		646	12.4	72 356				21	9						
18								5									
19		48		1105	16.0	73 357				22	10						
20								6	X								
21		26		1229	16.4	74 358				23	11						
22								7									
23		12		1351	16.6	75 359				24	12						
24								8	X								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

2 * Decm

SAMPLE LOG		Date (utc) 20200917.		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 033			
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
green	N/A	N/A			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					76				1							
2																	
3																	
4	600					77				2							
5																	
6																	
7	450					78				3							
8																	
9																	
10	300					79				4							
11																	
12																	
13	150					80				5							
14																	
15																	
16	100					81				6							
17																	
18																	
19																	
20	60					82				7							
21																	
22	40									8							
23	30					83				9							
24	20									10							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 20200217		Time (utc) 2004	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200217.2004	CTD		-41.503	32.6692
Nutrient rack	Oxygen box	Salt box		Here Be Dragons	
black	E	G7			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	749		1762	6.7	84,360				1	13						
2	750																
3	600	601		1169	7.7	85,361				2	14						
4	600																
5	500	500		1792	9.0	86,362				3	15						
6	500																
7		400		616	10.0	87,363				4	16						
8																	
9		300		1717	10.8	88,364				5	17						
10																	
11		221		1149	11.4	89,365				6	18						
12																	
13		100		1811	13.5	90,366				7	19						
14																	
15		75		1715	14.0	91,367				8	20						
16																	
17		57		711	16	92,368				9	21						
18																	
19		40		1640	16.6	93,369				10	22						
20																	
21		19		1344	16.6	94,370				11	23						
22																	
23		7		1751	16.7	95,371				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

slow drip
on bottom
end cap

Chl *
Max

100%
fresh

SAMPLE LOG		Date (utc) 20200218, 1751		Time (utc) 1751	
CRUISE ID SAMW TN376	Event ID 20200218, 1751	Station ID CTD 035		LAT -40.5007	LONG 31.2899
Nutrient track blue	Oxygen box A	Salt box C	Here Be Dragons 		

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1		751	6.7	1364		1 372				1	1				
2															
3		501	9.0	1028		2 373				2	2				
4															
5		352	9.7	1366		3. 374				3	3				
6															
7		200	11.9	1152		4 375				4	4				
8															
9		150	12.0	1824		5 376				5	5				
10								1 (g)							
11		101	13.1	1700		6 377				6	6				
12								2 v							
13		80	14.7	1170		7 378				7	7				
14								3 v	X						
15		60	15.4	1503		8 379				8	8				
16								4 v	X						
17		48	15.8	1791		9 380				9	9				
18								5 v	X						
19		30		1785		10 381				10	10				
20						10 381		6 v	X	10	10				
21		15	17.2	1625		11 382				11	11				
22								7 v	X						
23		5	17.0	1724		12 383				12	12				
24								8							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

* Niskin 1a empty => unknown volume ...!

* CTD empty

SAMPLE LOG		Date (utc)		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	
SAMW TN376	20000218.2034	CHD 036		-40.5	
Nutrient rack	Oxygen box	Salt box		Here Be Dragons	
green	N/A	N/A			
				LONG	
				31.643	

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	150					21				1							
2																	
3																	
4	600					22				2							
5																	
6																	
7	450					23				3							
8																	
9																	
10	300					24				4							
11																	
12																	
13	150					25				5							
14																	
15																	
16	100					26				6							
17																	
18																	
19						27											
20	60					27				7							
21																	
22	40									8							
23	30					28				9							
24	20									10							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

* fixed "on the fly"
 X Niskin #19 did not fire → seems lanyard is getting hung up after pin release

SAMPLE LOG

Date (utc) 20200218

Time (utc) 2245

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200218.2245

37

-40.5001

31.9335

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

A

C

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutrs	Salts	PAIN
1		750		1559	6.0	43/38				1	13	
2												
3		601		1541	7.0	44/385				2	14	
4												
5		400		1642	9.6	45/386				3	15	
6												
7		321		1055	10.6	46/397				4	16	
8												
9		251		1743	10.8	47/388				5	17	
10								1				
11		100		1785	12.8	48/389		2		6	18	
12												
13		81		1277	13.6	49/390		3		7	19	
14												
15		60		1157	13.9	50/391		4		8	20	
16												
17		40		646	14.9	51/392				9	21	
18								5				
19		25		1465	15.7	52/393				10	22	
20								6				
21		15		1929	15.9	53/394				11	23	
22								7				
23		55		1351	15.8	54/395				12	24	
24								8				
Size (liter)												
REMARKS:												

CHL Max

SAMPLE LOG

Date (utc)

2020-02-19

Time (utc)

0105

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20000219.0105

CTD 038

-40.5001

32.2260

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					96				13							
2	700																
3	650																
4	600					-97				14							
5	550																
6	500																
7	450					98				15							
8	400																
9	350																
10	300					97				16							
11	250																
12	200																
13	150					150				17							
14	120																
15	110																
16	100					101				18							
17	90																
18	80																
19	70																
20	60					102				19							
21	50																
22	40									20							
23	30					103				21							
24	20	15								22							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG

Date (utc) 2020-02-19

Time (utc) 0745

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200219.0745

CTD 040

-40.5001

32.8125

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	750					43				13					
2	700														
3	650														
4	600					44				14					
5	550														
6	500														
7	450					45				15					
8	400														
9	350														
10	300					46				16					
11	250														
12	200														
13	150					47				17					
14	130														
15	110														
16	100					48				18					
17	90														
18	80														
19	70														
20	60					49				19					
21	50														
22	40									20					
23	30					50				21					
24	20	14								22					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

SAMPLE LOG

Date (utc)

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200219.0938

OTD 041

-110.5

33.05

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Yellow

A

Z

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salts				
1		750.0		1304	6.0	116/408				1	1				
2		634.9		1028	6.4	117/409				2	2				
3		461.5		1366	8.1	118/410				3	3				
4		175.6		1152	10.5	119/411				4	4				
5		90.2		1824	11.3	120/412				5	5				
6		64.8		1700	13.6	121/413				6	6				
7		50.4		1170	14.4	122/414				7	7				
8		40.9		1503	15.2	123/415				8	8				
9		30.2		1771	16.0	124/416				9	9				
10		20.5		1423	16.0	125/417				10	10				
11		12.6		1625	16.0	126/418				11	11				
12		5.0		1724	16.0	127/419				12	12				
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

FL MAX

SAMPLE LOG		Date (utc) 2/19/2020		Time (utc) 12:11	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 042		-40,5007	33,4038
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
blue	N/A	N/A			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutis	Salts						
1	750					108				10							
2																	
3																	
4	600					109				11							
5																	
6																	
7	450					110				12							
8																	
9																	
10	300					111				13							
11																	
12																	
13	150					112				14							
14																	
15																	
16	100					113				15							
17																	
18																	
19																	
20	600					114				16							
21																	
22	40									17							
23	30					115				18							
24	20									19							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

*shipped "on the fly"

T S
44.27 34.27

17.37 34.78

SAMPLE LOG		Date (utc) 20200219		Time (utc) 1409	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200219, 1409	43.01		-40.5000	33.7022
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
blade	4 A2	Z			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts							
1		750		1559	6.4	96.420				1	13							
2																		
3		625		1541	7.1	97.421				2	14							
4																		
5		500		1642	8.7	98.422				3	15							
6																		
7																		
8		350		1055	10.0	99.423				4	16							
9		200		1743	11.5	100.424				5	17							
10																		
11		100		1735	13.0	101.425				6	18							
12																		
13		75		1277	13.5	102.426				7	19							
14																		
15		48		1151	14.1	103.427				8	20							
16																		
17		30		646	16.2	104.428				9	21							
18																		
19		20		1465	17.0	105.429				10	22							
20																		
21		12		1729	17.0	106.430				11	23							
22																		
23		5		1351	17.2	107.431				12	24							
24																		
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5							

REMARKS:

CHSLM

SAMPLE LOG		Date (utc) 2020-02-20		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200220.	CTD 044			
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLACK	A	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	750.1	/	1304	7.5	96/432	/		/	1	1						
2	750		/				/		/								
3		629.7	/	1028	7.7	97/433	/		/	2	2						
4			/				/		/								
5		500.3	/	1366	10.0	98/434	/		/	3	3						
6			/				/		/								
7		300.2	/	1152	12.6	99/435	/		/	4	4						
8			/				/		/								
9		210.2	/	1824	13.7	100/436	/		/	5	5						
10			/				/		/								
11		100.1	/	1700	14.8	101/437	/		/	6	6						
12			/				/		/								
13		75.0	/	1190	15.5	102/438	/		/	7	7						
14			/				/		/								
15		60.0	/	1508	16.4	103/439	/		/	8	8						
16			/				/		/								
17		46.0	/	1281	17.0	104/440	/		/	9	9						
18			/				/		/								
19		32.9	/	1423	19.3	105/441	/		/	10	10						
20			/				/		/								
21		20.0	/	1625	19.6	106/442	/		/	11	11						
22			/				/		/								
23		5.0	/	1724	19.6	107/443	/		/	12	12						
24			/				/		/								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

FL MAX

SAMPLE LOG		Date (utc) 20000220.1128		Time (utc) ~1120	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		OTD0815		-39.5	32.412
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
blue	N/A	N/A			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	750					x				1					
2															
3															
4	600					x				2					
5															
6															
7	450					x				3					
8															
9															
10	300					x				4					
11															
12															
13	150					x				5					
14															
15															
16	100					x				6					
17															
18															
19															
20	60					x				7					
21															
22	40									8					
23	30									9					
24	20					x				10					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

x fired "on the fly"

SAMPLE LOG

Date (utc) 20000200.

Time (utc) 1331

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200220,1331

CTD 046

-32.5006

32.668

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

No Here

green

A2

C

1 No Here

No Here

used maybe here

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	QAM						
1		750		1559	16.16	124.444				1	13							
2																		
3		651		1541	16.16	125.445				2	14							
4																		
5		450		1642	9.14	126.446				3	15							
6																		
7		300		1055	10.17	127.447				4	16							
8																		
9		150		1243	12.6	128.448				5	17							
10																		
11		100		1735	13.0	129.449				6	18							
12																		
13		75		1277	13.4	130.450				7	19							
14																		
15		50		1451	14.5	131.451				8	20							
16																		
17		30		646	15.4	132.452				9	21							
18																		
19		20		1465	16.2	133.453				10	22							
20																		
21		15		1729	17.0	134.454				11	23							
22																		
23		surf		1357	17.0	135.455				12	24							
24																		
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5							

REMARKS:

QAM

vent not shown

drifted 1.190

CHLX

drifted 1.190

SAMPLE LOG		Date (utc) 20000200.1546		Time (utc)	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376		CTD 047		-39,500	32.902
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
yellow					

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	950					13				13					
2															
3															
4	600					14				14					
5															
6															
7	450					15				15					
8															
9															
10	300					16				16					
11															
12															
13	150					17				17					
14															
15															
16	100					18				18					
17															
18															
19															
20	60					19				19					
21															
22	40									20					
23	30					20				21					
24	20									22					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

SAMPLE LOG

Date (utc) 20200220

Time (utc) 1851

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200220.1851

48

-39.5003

33.2096

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

blue

E1

G

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PPM
1	-	750		1762	6.2	136.462				1	1	
2												
3		500		1169	8.0	137.463				2	2	
4												
5		300		1292	10.3	138.464				3	3	
6												
7		150		616	11.4	139.465				4	4	
8												
9		100		1212	11.4	140.466				5	5	
10												
11		60		1149	13.0	141.467				6	6	
12												
13		32		1811	16.1	142.468				7	7	
14												
15		25		1715	17.0	143.469				8	8	
16												
17		18		711	17.0	144.470				9	9	
18												
19		12		1640	17.0	145.471				10	10	
20												
21		8		1344	17.1	146.472				11	11	
22												
23		6		1751	17.0	147.473				12	12	
24												
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5	

REMARKS:

CHX

SAMPLE LOG

Date (utc)

2020-02-21

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200221.

CITD 051

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					108				13							
2	700																
3	650																
4	600					109				14							
5	550																
6	500																
7	450					110				15							
8	400																
9	350																
10	300					111				16							
11	250																
12	200																
13	150					112				17							
14	100																
15	100																
16	100					113				18							
17	90																
18	90																
19	80																
20	60					114				19							
21	50																
22	40									20							
23	30					115				21							
24	20									22							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG

Date (utc)

2020.02.21

Time (utc)

2255

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200221.2255

CTD0520

-39.5005

33.6501

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

F₂

G

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750	749		1135	6.9	156/468				1	13						
2	750																
3		500		1683	8.4	153/449				2	14						
4																	
5		300		1748	10.4	158/491				3	15						
6																	
7		200		1761	10.6	159/472				4	16						
8																	
9		101		1139	11.7	160/493				5	17						
10																	
11		61		1212	13.0	161/474				6	18						
12																	
13		32		1045	15.0	162/495				7	19						
14																	
15		25		1726	16.7	163/496				8	20						
16																	
17		18		1841	17.0	164/497				9	21						
18																	
19		12		1666	17.0	165/498				10	22						
20																	
21		8		1156	17.0	166/499				11	23						
22																	
23		6		1756	17.0	167/460				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

CN*

SAMPLE LOG

Date (utc)

2020-02-21

Time (utc)

0418

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200221.0418

CTD 052

-29.5003

33.9997

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

Yellow

I₂

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nutrs	Salts	gnd				
1	750			1148	6.6	96/481				1	1					
2	750															
3	500			1460	9.0	92/482				2	2					
4	500															
5	400			1702	10.0	98/483				3	3					
6	400															
7	200			1644	12.0	99/484				4	4					
8	200															
9	100			1787	13.4	100/485				5	5					
10	100															
11	80			1027	13.4	101/486				6	6					
12	80															
13	60			1602	14.4	102/487				7	7					
14	60															
15	40			1796	15.0	103/488				8	8					
16	40															
17	30			1784	15.4	104/489				9	9					
18	30															
19	20			1732	16.0	105/490				10	10					
20	20															
21	10			1786	17.0	106/491				11	11					
22	10															
23	3			1750	17.0	107/492				12	12					
24	3															
Size (liter)			1.0	1.0	n/a	1.0	1.0	3.0/4	1.2	0.3	0.5					

REMARKS:

X5045 041800 m3

SAMPLE LOG		Date (utc) 2020-02-21		Time (utc) 1831	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200221.1831	CTD 053		-27.3010	35.3610
Nutrient pack BLUE (1-15) YELLOW (16-24)	Oxygen box A	Salt box Z, H	Here Be Dragons 		
15 DEEP CASI					

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	5040			1304	6.0	96.493				1	1/3						
2	5040			1028	6.0	97.494				2	2/4						
3	4500			1366	6.2	98.495				3	3/5						
4	4000			1152	6.5	99.496				4	4/6						
5	3500			1824	6.9	100.497				5	5/9						
6	3000			1900	7.0	101.498				6	6/12						
7	2500			1190	7.2	102.499				7	7/19						
8	2000			1502	7.6	103.500				8	8/20						
9	1500			1701	7.7	104.501				9	9/21						
10	1000			1023	7.8	105.502				10	10						
11	2000			1625	8.0	106.503				11	11						
12	1950			1024	8.3	107.504				12	12						
13	1500			1659	9.17	124.505				13	13						
14	1250			1041	9.6	125.506				14	14/102						
15	1000			1642	11.7	126.507				15	15						
16	750			1055	13.9	127.508				16	16						
17	500			1243	15.9	128.509				17	17						
18	250			1735	16.7	129.510				18	18						
19	200			1279	17.4	130.511				19	19						
20	200			1151	17.7	131.512				20	20						
21	100			646	18.3	132.513				21	21						
22	75			1465	19.0	133.514				22	22						
23	45			1729	20.0	134.515				23	23						
24	10			1351	21.0	135.516				24	24						
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

#6: leaking from bottom of - only after saw bubbles
 - definite significant leak as seen sampling m44s, less water left than in other m44s

SAMPLE LOG

Date (utc)

2020.02.22

Time (utc)

1 243

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

202000222.1243

CTD 054

-36,3006

37,3003

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

A1

C



Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PAW
1		750		1304	11.4	168.517				1	1	
2												
3		670		1028	11.9	169.518				2	2	
4												
5		501		1366	13.16	170.519				3	3	
6												
7		350		1152	15.0	171.520				4	4	
8												
9		200		1024	17.0	172.521				5	5	
10												
11		110		1700	18.3	173.522				6	6	
12												
13		76		1170	19.1	174.523				7	7	
14												
15		70		1503	19.4	175.524				8	8	
16												
17		60		1791	20.0	176.525				9	9	
18												
19		41		1423	21.0	177.526				10	10	
20												
21		20		1675	23.0	178.527				11	11	
22												
23		6		1724	23.4	179.528				12	12	
24												
REMARKS:												

CH X

SAMPLE LOG

Date (utc) 20200622.1959

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

CID 055

-36.31

36.903

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

black

X

X

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	950					136				13							
2																	
3																	
4	600					137				14							
5																	
6																	
7	450					138				15							
8																	
9										1							
10	300					139				16							
11																	
12																	
13	150					140				17							
14																	
15																	
16	100					141				18							
17																	
18																	
19																	
20	60					142				19							
21																	
22	40									20							
23	30					143				21							
24	20									22							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 20200222		Time (utc) 2300	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200222, 2300	56.01		-36.3000	36.7518
Nutrient rack	Oxygen box	Salt box		Here Be Dragons	
YELLOW	A ₂	C			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	BO	PAN
1		751	✓	1559	8.7	180/529		✓	✓	1	12	BO	PAN
2			✓										
3		600	✓	1541	10.3	181/530				2	14	✓	
4													
5		450	✓	1642	11.7	182/531				3	15	✓	
6													
7		350		1055	12.2	183/534				4	16		
8													
9		200		1343	14.0	184/535				5	17		
10													
11		100	✓	1235	15.7	185/539		1		6	18		
12			✓					2					✓
13		83		1220	16.0	186/535		3		7	19		
14			✓					4				✓	
15		70	✓	1151	16.9	187/539		5		8	20	✓	
16			✓					6					
17		46	✓	646	20.7	188/537		7		9	21	✓	
18			✓					8					
19		30	✓	1465	21.1	189/535		9		10	22	✓	
20			✓					10					
21		20	✓	1729	21.3	190/539		11		11	23	✓	
22			✓					12					
23		14	✓	1351	21.3	191/540		13		12	24	✓	
24								14					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5		

REMARKS:

#22: leaking around bottom cap - slow leak
→ only noticed after sampling.

CAS

SAMPLE LOG

Date (utc) 2020-02-23

Time (utc) 0521

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200223.0521

CTD 057

-36.2992

36.5988

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

YELLOW

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	750					56				13					
2															
3															
4	600					57				14					
5															
6															
7	450					58				15					
8															
9															
10	300					59				16					
11															
12															
13	150					60				17					
14															
15															
16	100					61				18					
17															
18															
19															
20	60					62				19					
21															
22	40									20					
23	30					63				21					
24	15									22					
Size (liter)															
			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

SAMPLE LOG

Date (utc)

2020.07.23

Time (utc)

0826

CRUISE ID

SAMW TN376

Event ID

20200223.0826

Station ID

CTD 050

LAT

-36.3001

LONG

36.3803

Nutrient rack

BLACK

Oxygen box

A

Salt box

G

Here Be Dragons

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts			
1	750			1304	8.4	147.34				1	13			
2	700													
3	640			1028	9.4	189.542				2	14			
4	640													
5	500			1366	11.0	170.543				3	15			
6	500													
7	240			1152	13.1	171.544				4	16			
8	240													
9	130			1824	14.9	172.545				5	17			
10	130													
11	100			1700	15.3	173.546				6	18			
12	100													
13	80			1190	16.0	174.547				7	19			
14	80													
15	70			1503	16.4	175.548				8	20			
16	70													
17	60			1771	16.9	176.549				9	21			
18	50													
19	40			1403	20.2	177.550				10	22			
20	40													
21	20			1625	20.4	178.551				11	23			
22	20													
23	10			1724	20.4	179.552				12	24			
24	10													
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	12	0.3	0.5			

REMARKS:

Vent open

Vent open

Chl max

SAMPLE LOG

Date (utc) 20200223.

Time (utc) 23

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

CTD 059

-36.30

36.386

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

blue

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	750					76				1					
2															
3															
4	600					77				2					
5															
6															
7	450					78				3					
8															
9															
10	300					79				4					
11															
12															
13	150					80				5					
14															
15															
16	100					81				6					
17															
18															
19															
20	60					82				7					
21															
22	40									8					
23	30					83				9					
24	20									10					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

* Lat/Long questionable => GPS antenna issues

SAMPLE LOG

Date (utc) 2020023

Time (utc) 1258

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

2020023, 1258

60

-36°17, 954

36°2.955

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

green

A₂

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PAM
1		750		1559	8.7	180 553				1	1	PAM
2												
3		600		1541	10.0	181 554				2	2	
4												
5		480		1642	11.4	182 555				3	3	
6												
7		301		1055	12.4	183 556				4	4	
8												
9		201		1243	13.4	184 557				5	5	
10												
11		151		1235	14.1	185 558				6	6	
12												
13		101		1277	15.7	186 559				7	7	
14												
15		81		1157	16.0	187 560				8	8	
16												
17		60		1646	16.5	188 561				9	9	
18												
19		41		1465	19.4	189 562				10	10	
20												
21		20		1229	20.5	190 563				11	11	
22												
23		5		1357	20.4	191 564				12	12	
24												
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5	

REMARKS:

ch*

SAMPLE LOG

CRUISE ID

Event ID

Date (utc)

20090823.1606

Time (utc)

LAT

LONG

SAMW TN376

Station ID
CVD 061

-36.298

35.966

Nutrient rack

yellow

Oxygen box

Salt box

Here Be Dragons

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts				
1	750					56				1					
2															
3															
4	600					57				2					
5															
6															
7	450					58		X1		3					
8															
9															
10	300					59		X2		4					
11															
12															
13	150					60		X3		5					
14															
15															
16	100					61		X4		6					
17															
18															
19															
20	60					62		X5		7					
21															
22	40							X6		8					
23	30					63		X7		9					
24	20							X8		10					
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

SAMPLE LOG

Date (utc) 2020-02-24

Time (utc) 0249

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200224.0249

CTD 062

-35.3849

36.3815

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BACK

A,

H

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1		75.1		1304	11.0	168.565			✓	1	13						
2																	
3		599.1		1028	12.4	169.566				2	14						
4		470.1															
5				1366	13.6	170.567				3	15						
6		351.1															
7				1152	14.6	171.568				4	16						
8																	
9		200.0		1824	16.0	172.569				5	17						
10								1									
11		165.2		1700	17.5	173.571				6	18						
12								2									
13		90.0		1170	18.0	174.572				7	19						
14								3									
15		73.1		1503	18.0	175.573				8	20						
16								4									
17		65.3		1771	19.0	176.574				9	21			FL	MAX		
18								5	X								
19		58.0		1423	19.1	177.575				10	22			Vent	slightly open		
20								6									
21		36.5		1625	21.0	178.576				11	23						
22								7									
23		5.0		1724	20.8	179.577				12	24						
24								8	X								
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG

Date (utc) 2020-02-24

Time (utc)

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200224.

CTD 063

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLACK

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					21				13							
2																	
3																	
4	600					22				14							
5																	
6																	
7	450					23				15							
8																	
9																	
10	300					24				16							
11																	
12																	
13	150					25				17							
14																	
15																	
16	100					26				18							
17																	
18																	
19																	
20	60					27				19							
21																	
22	40									20							
23	30					28				21							
24	20									22							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 24 Feb 20		Time (utc) 0850	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200224.0850.064.01	064.01		-36.0738	036.3818
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Yellow	A	G			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp. ✓	DIC ✓	C14	POC ✓	DNA ✓	Nuts	Salts						
1		750.1	✓	1304	8.6	180.578		✓	✓	13	1						
2																	
3		601.5		1028	10.4	181.579				14	2						
4																	
5		490.5		1366	11.6	182.580				15	3						
6																	
7		400.3		1152	12.0	183.581				16	4						
8																	
9		240.2		1824	13.4	184.582		✓		17	5						
10																	
11		140.1		1700	15.6	185.583		✓		18	6						
12																	
13		90.1		1170	17.0	186.584		✓		19	7						
14																	
15		78.4		1503	17.5	187.585		✓		20	8						
16																	
17		62.1		1771	19.1	188.586		✓		21	9						
18																	
19		45.4		1423	21.0	189.587				22	10						
20																	
21		20.1		1625	21.0	190.588				23	11						
22																	
23		2.1		1744	21.0	191.589				24	12						
24																	
Size (liter)		1.0	1.0	na	1.0	1.0	3 to 4	1.2	0.3	0.5							

REMARKS:

SAMPLE LOG

Date (utc)

24 Feb 20

Time (utc)

10:44

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200224.1130

65.1

-36.1698

36.3776

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

Niskin No.	Intended Depth.	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1		751				76				1							
2																	
3																	
4		6003				77				2							
5																	
6																	
7		450				78				3							
8																	
9																	
10		300				79				4							
11																	
12																	
13		1499				80				5							
14																	
15																	
16		1005				81				6							
17																	
18																	
19																	
20		606				82				7							
21																	
22		40															
23		30				83				8							
24		20								10							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG

Date (utc) 20200224

Time (utc) 12.56

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200224, 1256

666,01

-36.2939

36.3739

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

blank

A

G

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PAM
1		750		1559	9.0	33/590				1	13	PAM
2												
3		600		1541	10.5	34/591				2	14	
4												
5		500		1642	11.2	35/592				3	15	
6												
7		401		1055	12.0	36/593				4	16	
8												
9		201		1743	14.0	37/594				5	17	
10												
11		101		1735	15.6	38/595				6	18	
12												
13		80		1277	16.7	39/596				7	19	
14												
15		70		1151	17.4	40/597				8	20	X
16												
17		47		646	20.7	41/598			X	9	21	X
18												
19		30		1465	20.8	42/599				10	22	
20												
21		21		1729	20.8	43/600				11	23	
22												
23		15		1359	20.8	44/601				12	24	
24												
Size (liter)												
			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5	

REMARKS:

CHX

SAMPLE LOG

Date (utc)

2020-02-25

Time (utc)

0455

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200225-0455

CTD 067

-36.6835

36.3793

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					33				1							
2																	
3																	
4	600					34				2							
5																	
6																	
7	450					35				3							
8																	
9																	
10	300					36				4							
11																	
12																	
13	150					37				5							
14																	
15																	
16	100					38				6							
17																	
18																	
19																	
20	60					31				7							
21																	
22	40									8							
23	30					40				9							
24	20									10							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

#22 - Niskin leaks around bottom cap after headspace created.
- ANT notified - O-ring will be checked before next cast.

SAMPLE LOG

Date (utc) 2020-02-25

Time (utc) 0650

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200225.0650.068.1

CTD 068

-36.5429

36.3815

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

GREEN

A1

C

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts							
1	750	750.1		1304	7.9	168,602		✓		13	✓							
2																		
3	700	701.2		1028	7.4	169,603				14	2							
4																		
5	600	601.2		1366	9.8	170604				15	3							
6																		
7	500	500.2		1152	10.9	171,605				16	4							
8																		
9	400	400.3		1824	12.0	172,606				17	5							
10																		
11	250	250.1		1700	13.0	173,607				18	6							
12																		
13	105	105.8		1170	15.4	174,608				19	7							
14																		
15	90	90.0		1503	15.9	175,609				20	8							
16																		
17	70	70.1		1771	16.10	176,610				21	9							
18																		
19	55	56.2		M15	FIRE													
20				1423	18.0	177,611				22	10							
21	40	40.1		1625	20.7	178,612				23	11							
22																		
23	5	4		1724	20.8	179,613				24	12							
24																		
Size (liter)			10	10	na	10	10	3 to 4	12	0.3	0.5							

REMARKS:

#22: new o-ring on bottom cap - MT cabinet it was split/worn.

(nipple pushed in)
(bottom o-ring leaking)

SAMPLE LOG		Date (utc) 2020-02-25		Time (utc) 0850	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200225.0850	CTD 069		-36.4420	36.3810
Nutrient rack	Oxygen box	Salt box		Here Be Dragons	
BLUE	/	/			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	750					56				1							
2																	
3																	
4	600					57				2							
5																	
6																	
7	450					58				3							
8																	
9																	
10	300					59				4							
11																	
12																	
13	150					60				5							
14																	
15																	
16	100					61				6							
17																	
18																	
19																	
20	60					62				7							
21																	
22	40									8							
23	30					63				9							
24	20									10							
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

SAMPLE LOG		Date (utc) 2020-02-25		Time (utc) 1044	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200225.1044	CTD 70		-36.3032	36.3831
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
BLUE		Z			

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts	PAM
1		750		1589	8.9	64/614				13	1	PAM
2												
3		661		1541	10.0	65/615				14	2	
4												
5		553		1642	11.0	66/616				15	3	
6												
7		450		1055	12.0	67/617				16	4	
8												
9		225		1743	14.3	68/617				17	5	
10												
11		120		1735	16.0	69/617				18	6	
12												
13		973		2077	16.6	70/620				19	7	
14												
15		818		1151	17.4	71/621				20	8	
16												
17		01.0		6416	19.0	72/622				21	9	
18												
19		35.11										
20				N/A		73/623				22	10	
21		58		1729	21.2	74/624				23	11	
22												
23		140.6		1351	21.2	75/625				24	12	
24												
Size (liter)												
REMARKS:												

empty

CHX

SAMPLE LOG

Date (utc) 20200225

Time (utc) 1857

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

26200225.1853

71

-37.2171

36.3790

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

E

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1		750		1762	10.8	108,626				1	13						
2																	
3		600		1169	12.1	109,627				2	14						
4																	
5		500		1792	13.0	110,628				3	15						
6																	
7		350		616	14.3	111,629				4	16						
8																	
9		281		1717	15.7	112,630				5	17						
10																	
11		151		1149	17.2	113,631				6	18						
12																	
13		90		1811	18.4	114,632				7	19						
14																	
15		72		1715	18.7	115,633				8	20						
16																	
17		45		711	20.7	116,634				9	21						
18																	
19		30		1640	20.8	117,635				10	22						
20																	
21		15		1344	20.7	118,636				11	23						
22																	
23		5		1751	20.7	119,637				12	24						
24																	
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5						

REMARKS:

vent 200225
20190410

CHX

SAMPLE LOG

Date (utc) 20200926.1801

Time (utc) 1801

CRUISE ID

Event ID

Station ID

LAT

LONG

SAMW TN376

20200926.1801

CMD 072

-34.4252

38.0417

Nutrient rack

Oxygen box

Salt box

Here Be Dragons

BLUE

A

41

Bottom Depth 302.17

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nuts	Salts						
1	5200	5175		1304	5.4	1/638				1	1						
2	5200	5175		1028	5.5	2/639				2	2						
3	4500	4500		1366	5.7	3/640				3	3						
4	4000	4001		1152	6.0	4/641				4	4						
5	3500	3500		1824	6.6	5/642				5	5						
6	3250	3250		1700	6.8	6/643				6	6						
7	3000	3000		1170	7.0	7/644				7	7						
8	2750	2750		1503	7.2	8/645				8	8						
9	2500	2500		1731	7.4	9/646				9	9						
10	2250	2250		1423	7.6	10/647				10	10						
11	2000	2000		1625	7.8	11/648				11	11						
12	1750	1750		1724	8.0	12/649				12	12						
13	1500	1500		1559	8.6	13/650				13	13						
14	1250	1250		1541	10.4	14/651				14	14						
15	1000	1000		1642	11.6	15/652				15	15						
16	750	750		1055	13.6	16/653				16	16						
17	500	500		1743	15.4	17/654				17	17						
18	400	400		1735	16.4	18/655				18	18						
19				1272						19	19						
20	200	200		1151	18.3	19/656				20	20						
21	100	100		646	19.4	20/657				21	21						
22	85	86		1465	19.7	21/658				22	22						
23	65	65		1729	21.0	22/659				23	23						
24	50.4	4		1351	23.0	23/660				24	24						

Size (liter)

1.0

1.0

n/a

1.0

1.0

3 to 4

1.2

0.3

0.5

</

SAMPLE LOG		Date (utc) 20200229		Time (utc) 1000	
CRUISE ID	Event ID	Station ID		LAT	LONG
SAMW TN376	20200229,100	73		-27,4089	49,8218
Nutrient rack	Oxygen box	Salt box	Here Be Dragons		
Blue	A	G	Bottom Depth 5064		

Niskin No.	Intended Depth	Actual Depth	CFC	Oxygen Flask	O2 Draw Temp	DIC	C14	POC	DNA	Nut	Salts				
1		5045	✓	1304	5.6	1/662		1		✓	1				
2		5045	1	1028	5.8	2/663		2		2	2				
3		5001	738	1366	5.7	3/664		1		3	3				
4		4500	—	1152	6.0	4/665		—		4	4				
5		4000	739	1824	6.0	5/666		2		5	5				
6		3499	—	1700	6.4	6/667		—		6	6				
7		3000	740	1190	7.0	7/668		3		7	7				
8		2499	—	1503	7.0	8/669		—		8	8				
9		2000	741	1791	7.9	9/670		4		9	9				
10		1849	742	1423	7.9	10/671		5		10	10				
11		1380	743	1625	8.7	11/672		6		11	11				
12		1150	744	1724	9.0	12/673		7		12	12				
13		1049	745	1559	9.0	13/674		8		13	13				
14		899	746	1541	11.0	14/675		9		14	14				
15		800	747	1642	12.1	15/676		10		15	15				
16		700	748	1055	13.3	16/677		11		16	16				
17		601	749	1743	14.0	17/678		12		17	17				
18		499	750	1735	15.0	18/679		13		18	18				
19		398	751	1277	15.8	19/680		14		19	19				
20		301	752	1151	17.3	20/681		15		20	20				
21		200	753	646	17.4	21/682		16		21	21				
22		101	754	1465	18.6	22/683		17		22	22				
23		85	—	1729	19.0	23/684		—		23	23				
24		10	755	1351	24.9	24/695		18		24	24				
Size (liter)			1.0	1.0	n/a	1.0	1.0	3 to 4	1.2	0.3	0.5				

REMARKS:

LAST CAST !!

Flur Mix Max

O2 Max

3