

Ammonium analysis

Start time of Reaction

03 Sept 17

6:50 pm

End time of reaction

4 Sept

03:09 am

Cruise

2017-09

Date

03 Sept 17

Standards

μl 2°
φ S0

200 S1

400 S2

600 S3

800 S4

1000 S5

Conc.

Raw Fluor

Raw Fluor

Conc.	Raw Fluor	Raw Fluor
φ	17.0	16.5
0.5	145.1	151.8
1.0	270.3	263.6
1.5	388.5	384.7
2.0	500.4	559.8
2.5	670.0	612.1

See method for collection of LNSW

Working Legend A

S₄ Sens factor = 26
empty = 2.2 fsu
2.5

Sample	Station	Raw Fluor	Sample	Station	Raw Fluor	Sample	Station	Raw Fluor
235 A	LD08	18.7	216 B	LD06	190.4	31 B	LB04	268.9
235 B		21.1	218 B		61.0	31 A		270.8
234 A		70.3	217 B		264.2	40 B	LB06	328.9
234 B		18.2	216 A		186.1	25 A	LB02	213.8
233 A		43.7	196 A	LC01	197.3	25 B		193.1
233 B		43.1	195 A		146.3	42 B	LB06	137.2
255 A	LD11	15.9	194 A		101.3	23 A	LB02	185.0
255 B		13.9	196 B		200.3	no label		198.0
254 B		14.3	195 B		152.5	42 A	LB06	69.3
254 A		15.7	194 B		99.5	22 A	LB02	242.3
253 B		13.3	186 B	LC02	123.0	22 B		247.4
253 A		11.2	187 B		28.8	40 A	LB06	298.2
200 A	LD01	579.1	189 A		36.5	16 B	LB01	179.9
200 B		589.7	186 A		129.0	16 A		182.5
199 A		635.0	187 A		34.0	41 A	LB06	172.1
199 B		648.3	189 B		26.9	17 B	LB01	182.8
198 A		301.5	179 B	LC04	97.0	17 A		183.6
198 B		296.5	178 A		122.6	41 B	LB06	136.4
205 A	LD02	312.0	180 B		48.4	19 B	LB01	177.9
205 B		317.0	179 A		101.7	19 A		200.7
203 A		208.4	180 A		50.9			
203 B		216.0	178 B		123.1			
204 A		423.2	167 B	LC06	147.8			
204 B		453.3	168 B		93.5			
208 B	LD04	335.2	169 B		25.3			
208 A		273.0	167 A		152.2			
210 A		132.5	168 A		79.5			
209 A		159.8	169 A		26.7			
209 B		165.5	33 B	LB04	323.1			
210 B		152.0	32 B		333.0			
218 A	LD06	55.6	32 A		346.4			
217 A		173.8	33 A		323.6			

23 B
NH4
LB02
10 m
2017-09
Bot 4

Pg 1/2

A 235 NH4 LD08 5 m 2017-09 Bot 17
B 235 NH4 LD08 5 m 2017-09 Bot 17
A 234 NH4 LD08 10 m 2017-09 Bot 16
B 234 NH4 LD08 10 m 2017-09 Bot 16
233 NH4 LD08 20 m 2017-09 Bot 15
A 233 NH4 LD08 20 m 2017-09 Bot 15
255 NH4 LD11 5 m 2017-09 Bot 20
B 255 NH4 LD11 5 m 2017-09 Bot 20
254 NH4 LD11 10 m 2017-09 Bot 19
254 NH4 LD11 10 m 2017-09 Bot 19
253 NH4 LD11 20 m 2017-09 Bot 18
253 NH4 LD11 20 m 2017-09 Bot 19
200 NH4 LD01 5 m 2017-09 Bot 4
200 NH4 LD01 5 m 2017-09 Bot 4
199 NH4 LD01 10 m 2017-09 Bot 3
199 NH4 LD01 10 m 2017-09 Bot 3
198 NH4 LD01 20 m 2017-09 Bot 2
198 NH4 LD01 20 m 2017-09 Bot 2
205 NH4 LD02 5 m 2017-09 Bot 5
B 205 NH4 LD02 5 m 2017-09 Bot 5
A 203 NH4 LD02 20 m 2017-09 Bot 3
B 203 NH4 LD02 20 m 2017-09 Bot 3
A 204 NH4 LD02 10 m 2017-09 Bot 4
B 204 NH4 LD02 10 m 2017-09 Bot 4
208 NH4 LD04 20 m 2017-09 Bot 3
208 NH4 LD04 20 m 2017-09 Bot 3
210 NH4 LD04 5 m 2017-09 Bot 5
209 NH4 LD04 10 m 2017-09 Bot 4
209 NH4 LD04 10 m 2017-09 Bot 4
210 NH4 LD04 5 m 2017-09 Bot 5
218 NH4 LD06 5 m 2017-09 Bot 8
218 NH4 LD06 5 m 2017-09 Bot 8
217 NH4 LD06 10 m 2017-09 Bot 7
216 NH4 LD06 20 m 2017-09 Bot 6
196 NH4 LC01 5 m 2017-09 Bot 7
195 NH4 LC01 10 m 2017-09 Bot 6
194 NH4 LC01 20 m 2017-09 Bot 5
196 NH4 LC01 5 m 2017-09 Bot 7
195 NH4 LC01 10 m 2017-09 Bot 6
194 NH4 LC01 20 m 2017-09 Bot 5
186 NH4 LC02 20 m 2017-09 Bot 5
187 NH4 LC02 10 m 2017-09 Bot 6
189 NH4 LC02 5 m 2017-09 Bot 8
186 NH4 LC02 20 m 2017-09 Bot 5
187 NH4 LC02 10 m 2017-09 Bot 6
179 NH4 LC04 5 m 2017-09 Bot 8
178 NH4 LC04 10 m 2017-09 Bot 8
180 NH4 LC04 5 m 2017-09 Bot 10
179 NH4 LC04 10 m 2017-09 Bot 9
180 NH4 LC04 5 m 2017-09 Bot 10
178 NH4 LC04 20 m 2017-09 Bot 8
167 NH4 LC06 20 m 2017-09 Bot 5
169 NH4 LC06 5 m 2017-09 Bot 7
167 NH4 LC06 20 m 2017-09 Bot 5
168 NH4 LC06 10 m 2017-09 Bot 7
169 NH4 LC06 5 m 2017-09 Bot 7
33 NH4 LB04 5 m 2017-09 Bot 7
32 NH4 LB04 10 m 2017-09 Bot 6
32 NH4 LB04 10 m 2017-09 Bot 6
33 NH4 LB04 5 m 2017-09 Bot 7
31 NH4 LB04 20 m 2017-09 Bot 5
31 NH4 LB04 20 m 2017-09 Bot 5
40 NH4 LB06 20 m 2017-09 Bot 6
25 NH4 LB02 5 m 2017-09 Bot 6
25 NH4 LB02 5 m 2017-09 Bot 6
42 NH4 LB06 5 m 2017-09 Bot 8
23 NH4 LB02 10 m 2017-09 Bot 4
42 NH4 LB06 5 m 2017-09 Bot 8
22 NH4 LB02 20 m 2017-09 Bot 3
22 NH4 LB02 20 m 2017-09 Bot 3
40 NH4 LB06 20 m 2017-09 Bot 5
16 NH4 LB01 20 m 2017-09 Bot 2
16 NH4 LB01 20 m 2017-09 Bot 2
41 NH4 LB06 10 m 2017-09 Bot 7
41 NH4 LB06 10 m 2017-09 Bot 7
19 NH4 LB01 5 m 2017-09 Bot 5
19 NH4 LB01 5 m 2017-09 Bot 5
19 NH4 LB01 5 m 2017-09 Bot 5
19 NH4 LB01 5 m 2017-09 Bot 5

Ammonium analysis

Start time of Reaction

3 Sept

End time of reaction

4 Sept

Cruise

2017-09

Date

4 Sept 2017

Standards

Conc.

Raw Fluor

Raw Fluor

S0

S1

S2

S3

S4

S5

See method for collection of LNSW

$$y = 250.63x + 18.357$$

$$x = \frac{\text{raw FSU} - 18.357}{250.63}$$

Sample	Station	Raw Fluor	Sample	Station	Raw Fluor	Sample	Station	Raw Fluor
89 A	LB12	527.7	147 A	LC09	6.3			
90 A		121.3	147 B		6.8			
91 B		7.9	146 A		10.6			
89 B		529.6	146 B		12.1			
90 B		125.2	130 B	LC11	6.6			
91 A		12.6	132 A		9.7			
76 B	LB11	35.7	132 B		8.2			
75 B		16.1	130 A		6.2			
74 A		138.9	131 A		7.9			
76 A		18.1	131 B		6.5			
75 A		21.2	162 B	LC08	19.5			
74 B		137.8	160 B		46.0			
64 A	LB09	38.9	159 B		105.0			
63 B		35.4	162 A		10.8			
62 A		123.0	160 A		42.3			
64 B		38.0	159 A		104.6			
63 A		35.0			end 04:40			
62 B		122.6						
53 A	LB08	139.0						
53 B		133.4						
55 B		129.4						
52 A		86.7						
52 B		290.0						
55 A		125.9						
110 B	LB14	7.9						
109 B		5.2						
108 A		5.4						
110 A		10.0						
109 A		6.3						
108 B		8.0						
149 A	LC09	12.6						
149 B		13.2						

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89 A NH4 LB12 20 m 2017-09 Bot 13	90 A NH4 LB12 10 m 2017-09 Bot 14	91 B NH4 LB12 5 m 2017-09 Bot 15	89 B NH4 LB12 20 m 2017-09 Bot 13	90 B NH4 LB12 10 m 2017-09 Bot 14	91 A NH4 LB12 5 m 2017-09 Bot 15	76 B NH4 LB11 5 m 2017-09 Bot 11	75 B NH4 LB11 10 m 2017-09 Bot 10	74 A NH4 LB11 20 m 2017-09 Bot 9
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76 NH4 LB11 5 m 2017-09 Bot 11	75 NH4 LB11 10 m 2017-09 Bot 10	74 NH4 LB11 20 m 2017-09 Bot 9	64 A NH4 LB09 5 m 2017-09 Bot 9	63 B NH4 LB09 10 m 2017-09 Bot 8	62 A NH4 LB09 20 m 2017-09 Bot 7	64 B NH4 LB09 5 m 2017-09 Bot 9	63 A NH4 LB09 10 m 2017-09 Bot 8	62 B NH4 LB09 20 m 2017-09 Bot 7	53 A NH4 LB08 10 m 2017-09 Bot 8
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53 B NH4 LB08 10 m 2017-09 Bot 8	55 E NH4 LB08 5 m 2017-09 Bot 10	52 A NH4 LB08 20 m 2017-09 Bot 7	52 B NH4 LB08 20 m 2017-09 Bot 7	55 A NH4 LB08 5 m 2017-09 Bot 10	110 B NH4 LB14 5 m 2017-09 Bot 18	109 B NH4 LB14 10 m 2017-09 Bot 17	108 A NH4 LB14 20 m 2017-09 Bot 1	110 NH4 LB14 5 m 2017-09 Bot 18	109 A NH4 LB14 10 m 2017-09 Bot 17
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108 B NH4 LB14 20 m 2017-09 Bot 16	109 A NH4 LC09 5 m 2017-09 Bot 17	149 B NH4 LC09 5 m 2017-09 Bot 17	147 A NH4 LC09 10 m 2017-09 Bot 15	147 B NH4 LC09 10 m 2017-09 Bot 15	146 A NH4 LC09 20 m 2017-09 Bot 14	146 B NH4 LC09 20 m 2017-09 Bot 14	130 NH4 LC11 20 m 2017-09 Bot 17	132 A NH4 LC11 5 m 2017-09 Bot 19
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132 A NH4 LC11 5 m 2017-09 Bot 19	130 A NH4 LC11 20 m 2017-09 Bot 17	131 A NH4 LC11 10 m 2017-09 Bot 18	131 B NH4 LC11 10 m 2017-09 Bot 18	162 NH4 LC08 5 m 2017-09 Bot 13	160 B NH4 LC08 10 m 2017-09 Bot 11	159 B NH4 LC08 20 m 2017-09 Bot 10	162 NH4 LC08 5 m 2017-09 Bot 13	160 A NH4 LC08 10 m 2017-09 Bot 11
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159 A
NH4
LC08
20 m
2017-09
Bot 10

3:30 pm

started reading @ 11:30pm

2017-09

8/9 Sept 17

IOS standards + working reagent B

See method for collection of LNSW

138

1440

238

444

750

808

sensitivity factor $\hat{=}$ 54 = 29
 $\hat{=}$ F4 500.3 fsu
 empty = ~~3.8~~ fsu
 4.7

150 200

244

NH4

NE 4

LE02

55

2017-09

Box 2

LG01

1.0 m

2017-09

Bot 4

LG01

10 in

2017-09

Bot 4

LE01

Figure 1

2017-09

Bot 5 7

← did not read, off scale

• Tamarac too tired

288 B
NH4
LG04
5 m
2017-09
Bot 9

288 A
NH4
LG04
5 m
2017-09
Bot 9

276 A
NH4
LG06
20 m
2017-09
Bot 15

277 A
NH4
LG06
10 m
2017-09
Bot 16

279 B
NH4
LG06
5 m
2017-09
Bot 18

279 A
NH4
LG06
5 m
2017-09
Bot 18

277 B
NH4
LG06
10 m
2017-09
Bot 16

276 B
NH4
LG06
20 m
2017-09
Bot 15

299 B
NH4
LG01
20 m
2017-09
Bot 3

299 A
NH4
LG01
20 m
2017-09
Bot 3

296 A
NH4
LG02
5 m
2017-09
Bot 8

294 A
NH4
LG02
10 m
2017-09
Bot 6

294 B
NH4
LG02
10 m
2017-09
Bot 6

293 A
NH4
LG02
20 m
2017-09
Bot 5

293 B
NH4
LG02
20 m
2017-09
Bot 5

287 B
NH4
LG04
10 m
2017-09
Bot 8

287 A
NH4
LG04
10 m
2017-09
Bot 8

286 B
NH4
LG04
20 m
2017-09
Bot 7

286 A
NH4
LG04
20 m
2017-09
Bot 7

Ammonium analysis

Start time of Reaction

End time of reaction

3:30 pm

04:40 am

Cruise

2017-09

Date

9 Sept 2017

WR B

Standards

Conc.

Raw Fluor

Raw Fluor

S0

0

13.8

16.3

See method for collection of LNSW

S1

0.5

144.9

152.3

S2

1.0

260.9

285.5

S3

1.5

397.3

421.3

S4

2.0

499.7

526.9

S5

2.5

602.7

685.9

S4
sens factor = 29
4.5 fsu standby

Sample	Station	Raw Fluor	Sample	Station	Raw Fluor	Sample	Station	Raw Fluor
429 A	CS09	94.4	350 B	LBP5	66.7	440 B	NL1	15.7
427 B		365.2	350 A		63.2	440 A		16.2
429 B		91.1	349 B		534.8	431 A	SS3	185.2
428 A		287.8	348 B		928.1	431 B		188.4
427 A		373.7	348 A		934.3			
428 B		285.3	349 A		537.6			
415 A	CS06	162.6	359 A	LBP3	over			
418 B		50.8	B		"			
416 A		51.3	358 A		961.8			
415 B		182.2	361 A		293.8			
418 A		25.6	361 B		387.1			
416 B		57.2	358 B		985.1			
410 A	CS04	93.7	380 A	CS00	17.2			
409 A		107.1	379 B		10.9			
408 B		445.9	379 A		10.2			
410 B		85.5	382 B		8.8			
409 B		134.8	382 A		10.3			
408 A		285.8	380 B		13.8			
401 B	CS02	141.7	441 A	NL1	15.6			
402 B		45.3	441 B		15.4			
400 B		294.7	442 A		14.2			
401 A		139.3	442 B		15.4			
402 A		53.3	436 A	SS1	18.2			
400 A		295.2	436 B		20.1			
329 A	LBP7	12.9	435 A		21.6			
328 B		45.0	435 B		19.6			
328 A		48.9	434 A		52.4			
331 B		33.3	434 B		83.6			
331 A		44.8	432 A	SS3	50.7			
329 B		14.2	432 B		54.7			
			433 A		36.7			
			433 B		30.5			

S5 calibration sfac = 28

stand by fsu = 3.9

S0 10.4 12.2

S1 111.3 106.9

S2 207.4 190.8

S3 308.1 290.0

S4 385.8 366.2

S5 499.3 442.2

359 A LBP3 792.9

359 B 797.1

359 A
NH4
LBP3
10 m
2017-09
Bot 9

359 B
NH4
LBP3
10 m
2017-09
Bot 9

S4 calibration

$$y = 250.08x + 21.355$$

S5 calibration

$$y = 1827.4x + 15.795$$

no rep 300
301

susp. cond. 17

52 B
287 A
408 B

429A
NH4
CS09
5 m
2017-09
Bot 11

427A
NH4
CS09
20 m
2017-09
Bot 9

429B
NH4
CS09
5 m
2017-09
Bot 11

428A
NH4
CS09
10 m
2017-09
Bot 10

427A
NH4
CS09
20 m
2017-09
Bot 9

428B
NH4
CS09
10 m
2017-09
Bot 10

415A
NH4
CS06
20 m
2017-09
Bot 4

418B
NH4
CS06
5 m
2017-09
Bot 7

416A
NH4
CS06
10 m
2017-09
Bot 5

415B
NH4
CS06
20 m
2017-09
Bot 4

418A
NH4
CS06
5 m
2017-09
Bot 7

416B
NH4
CS06
10 m
2017-09
Bot 5

410A
NH4
CS04
5 m
2017-09
Bot 7

409A
NH4
CS04
10 m
2017-09
Bot 6

408B
NH4
CS04
20 m
2017-09
Bot 5

410B
NH4
CS04
5 m
2017-09
Bot 7

409B
NH4
CS04
10 m
2017-09
Bot 6

408A
NH4
CS04
20 m
2017-09
Bot 5

401B
NH4
CS02
10 m
2017-09
Bot 19

402B
NH4
CS02
5 m
2017-09
Bot 20

400B
NH4
CS02
20 m
2017-09
Bot 18

401A
NH4
CS02
10 m
2017-09
Bot 19

402A
NH4
CS02
5 m
2017-09
Bot 20

400A
NH4
CS02
20 m
2017-09
Bot 18

329A
NH4
LBP7
10 m
2017-09
Bot 19

328B
NH4
LBP7
20 m
2017-09
Bot 18

328A
NH4
LBP7
20 m
2017-09
Bot 18

331B
NH4
LBP7
5 m
2017-09
Bot 21

331A
NH4
LBP7
5 m
2017-09
Bot 21

329B
NH4
LBP7
10 m
2017-09
Bot 19

350B
NH4
LBP5
5 m
2017-09
Bot 19

350A
NH4
LBP5
5 m
2017-09
Bot 19

349B
NH4
LBP5
10 m
2017-09
Bot 18

348B
NH4
LBP5
20 m
2017-09
Bot 17

349A
NH4
LBP5
20 m
2017-09
Bot 17

349A
NH4
LBP5
10 m
2017-09
Bot 18

358A
NH4
LBP3
20 m
2017-09
Bot 8

361A
NH4
LBP3
5 m
2017-09
Bot 1

361B
NH4
LBP3
5 m
2017-09
Bot 11

358B
NH4
LBP3
20 m
2017-09
Bot 8

380A
NH4
CS00
10 m
2017-09
Bot 19

379B
NH4
CS00
20 m
2017-09
Bot 18

379A
NH4
CS00
20 m
2017-09
Bot 18

382B
NH4
CS00
5 m
2017-09
Bot 21

382A
NH4
CS00
5 m
2017-09
Bot 21

380B
NH4
CS00
10 m
2017-09
Bot 19

441A
NH4
NL1
10 m
2017-09
Bot 5

441B
NH4
NL1
10 m
2017-09
Bot 5

442A
NH4
NL1
5 m
2017-09
Bot 6

442B
NH4
NL1
5 m
2017-09
Bot 6

436A
NH4
SS1
5 m
2017-09
Bot 3

436B
NH4
SS1
5 m
2017-09
Bot 3

435A
NH4
SS1
10 m
2017-09
Bot 2

435B
NH4
SS1
10 m
2017-09
Bot 2

434A
NH4
SS1
20 m
2017-09
Bot 1

434B
NH4
SS1
20 m
2017-09
Bot 1

432A
NH4
SS3
10 m
2017-09
Bot 2

432B
NH4
SS3
10 m
2017-09
Bot 2

440B
NH4
NL1
20 m
2017-09
Bot 4

433A
NH4
SS3
5 m
2017-09
Bot 3

433B
NH4
SS3
5 m
2017-09
Bot 3

440A
NH4
NL1
20 m
2017-09
Bot 4

431A
NH4
SS3
20 m
2017-09
Bot 4

431B
NH4
SS3
20 m
2017-09
Bot 4

15:30 8 Sept

06:41

Cruise

2017.09

Date _____

9 Sept 2017

UVic Samples

Standards

Conc.

Raw Fluor

Raw Fluor

50

0

11.5

10.3

See method for collection of LNSW

S1

0.5

143.6

142.7

S2

1.0

269.4

272.1

S3

1.5

383.0

382.9

S4

2.0

497.0

504.9

S5

2.5

616.1

617.41

Sy cal, sens factor = 28

$$y = 240.92x + 19.717$$

[illegible]