

105B

NH4

LB12

2019-023

Bot 14

Ammonium analysis

Cruise

Survey Name

66A

79B

89B

90B

104B

NH4

NH4

NH4

NH4

NH4

LB08

LB09

LB11

LB11

LB12

2019-023

2019-023

2019-023

2019-023

2019-023

Bot 9

Bot 9

Bot 9

Bot 10

Bot 13

2019-023

L2 P

Start time/date

End time/date

3-NOV-2019

1730

1830

Standards

microliters 2° std Conc.

Raw Fluor

Raw Fluor

S0

0

0

14

12.8

S1

200

0.5

184.4

186.6

S2

400

1

344.2

348.8

S3

600

1.5

499.9

497.9

S4

800

2

667.2

648.8

S5

1000

2.5

799.6

805.1

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

Batch 'C'

29

S3

LB14

Batch 'C'

29

S3

LB08

Sample Number	Station	Depth	Raw Fluorescence
---------------	---------	-------	------------------

77A

LB09

71.8

77B

LB09

72.3

78B

LB09

102.5

78A

LB09

101.5

91B

LB11

130.6

91A

LB11

123.6

106B

LB12

10.5

106A

LB12

10.2

69B

LB08

227.0

67B

LB08

191.3

66B

LB08

97.6

79A

LB09

116.0

89A

LB11

463.1

90A

LB11

147.9

104A

LB12

73.5

105A

LB12

13.8

69A

LB08

223.7

67A

LB08

191.0

66A

LB08

99.3

79B

LB09

115.7

89B

LB11

452.8

90B

LB11

143.1

104B

LB12

70.2

105B

LB12

16.6

69B NH4 LB08
2019-023 Bot 12

106A NH4 LB12
2019-023 Bot 15

106B NH4 LB12
2019-023 Bot 15

91A NH4 LB11
2019-023 Bot 11

91B NH4 LB11
2019-023 Bot 11

78A NH4 LB09
2019-023 Bot 8

78B NH4 LB09
2019-023 Bot 8

77A NH4 LB09
2019-023 Bot 9

67A

NH4

LB08

2019-023

Bot 10

69A

NH4

LB08

2019-023

Bot 12

105A

NH4

LB12

2019-023

Bot 14

104A

NH4

LB12

2019-023

Bot 13

90A

112A

NH4

LB11

2019-023

Bot 10

89A

112A

NH4

LB11

2019-023

Bot 9

79A

NH4

LB09

2019-023

66B

NH4

LB08

67B

NH4

LB08

2019-023

Bot 9

Ammonium analysis

Cruise

Survey Name

2019-023

L2P

Start time/date

End time/date

31 AUG 2019

1730

1830

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0

0

0

14

12.8

S1

200

0.5

184.4

186.6

S2

400

1

344.2

348.8

S3

600

1.5

499.9

497.9

S4

800

2

667.2

648.8

S5

1000

2.5

799.6

805.1

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH 'C'

29

S3

LB14

BATCH 'C'

29

S3

LB08

Sample Number	Station	Depth	Raw Fluorescence
46B	LB04		105.9
45B	LB04		91.1
38A	LB02		84.8
37B	LB02		118.1
36B	LB02		199.4
27A	LB01		114.3
25A	LB01		145.4
24A	LB01		208.1
46A	LB04		130.4
45A	LB04		93.4
38B	LB02		83.4
37A	LB02		105.2
36A	LB02		196.6
27B	LB01		110.6
25B	LB01		151.4
24B	LB01		217.2
55A	LB06		10.3
55B	LB06		10.6
56B	LB06		108.8
56A	LB06		108.4
57B	LB06		214.8
57A	LB06		215.2
47A	LB04		110.8
47B	LB04		111.4

46B NH4 LB04 2019-02 Bot 6

45B NH4 LB04 2019-02 Bot 5

38A NH4 LB02 2019-02 Bot 5

37B NH4 LB02 2019-02 Bot 4

27A NH4 LB01 2019-02 Bot 5

25A NH4 LB01 2019-02 Bot 5

24A NH4 LB01 2019-02 Bot 5

46A NH4 LB04 2019-02 Bot 6

45A NH4 LB04 2019-02 Bot 5

38B NH4 LB02 2019-02 Bot 5

37A NH4 LB02 2019-02 Bot 4

36A NH4 LB01 2019-02 Bot 5

27B NH4 LB01 2019-02 Bot 5

25B NH4 LB01 2019-02 Bot 5

24B NH4 LB01 2019-02 Bot 5

55A NH4 LB06 2019-02 Bot 6

55B NH4 LB06 2019-02 Bot 6

56B NH4 LB06 2019-02 Bot 6

56A NH4 LB06 2019-02 Bot 6

57B NH4 LB06 2019-02 Bot 6

57A NH4 LB06 2019-02 Bot 6

47A NH4 LB04 2019-02 Bot 7

47B NH4 LB04 2019-02 Bot 7

57B

NH4

LB06

2019-023

Bot 8

57A

NH4

LB06

2019-023

Bot 8

47A

NH4

LB04

2019-023

Bot 7

47B

NH4

LB04

2019-023

Bot 7

Ammonium analysis

Cruise

Survey Name

2019-023
L2 Peruse

Start time/date

End time/date

31 AUG 2019
1730
1830

Standards

microliters 2° std

Conc.

Raw Fluor

LB14

Raw Fluor

LB08

S0	0	0	14	12.8
S1	200	0.5	184.4	186.6
S2	400	1	344.2	348.8
S3	600	1.5	499.9	497.9
S4	800	2	667.2	648.8
S5	1000	2.5	779.6	805.1

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH 'C' 29 S3 LB14

BATCH 'C' 29 S3 LB08

Sample Number Station Depth Raw Fluorescence

123A	LB14		16.8
124A	LB14		13.3
125B	LB14		13.9
123B	LB14		15.9
124B	LB14		14.3
125A	LB14		12.9

123A 124A

NH4 NH4

LB14 LB14

2019-023 2019-023

Bot 16 Bot 17

125B 123B

NH4 NH4

LB14 LB14

2019-02 2019-023

Bot 18 Bot 16

124B 125A

NH4 NH4

LB14 LB14

2019-023 2019-023

Bot 17 Bot 18

Ammonium analysis

Cruise

2019-023

Start time/date

1320 2500A

02 SEPT

02:45

Survey Name

LA PEROUSE

End time/date

1515 2500A

02 SEPT

H=00

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0

0

0

19.8

18.32

17.5

16.9

17.5

S1

200

0.5

180.7

190.1

175.7

179.3

174.5

S2

400

1

339.4

358.0

330.1

340.5

331.4

S3

600

1.5

490.2

518.5

484.6

495.3

483.8

S4

800

2

641.5

674.1

633.6

651.1

637.4

S5

1000

2.5

798.0

838.7

789.8

798.1

779.0

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH 'E'

29

S3

LB14

240B

240A

235A

235B

NH4

NH4

NH4

NH4

LD01

LD01

LC01

LC01

2019-02

2019-02

2019-02

2019-023

Bot 4

Bot 4

Bot 7

Bot 7

228B

226A

219B

219A

NH4

NH4

NH4

NH4

LC02

LC02

LC04

LC04

2019-02

2019-02

2019-023

2019-023

Bot 8

Bot 6

Bot 10

Bot 10

239B

239A

234B

234A

NH4

NH4

NH4

NH4

LD01

LD01

LC01

LC01

2019-02

2019-023

2019-02

2019-023

Bot 2

Bot 2

Bot 6

Bot 6

228A

225A

218B

218A

NH4

NH4

NH4

NH4

LC02

LC02

LC04

LC04

2019-02

2019-02

2019-02

2019-023

Bot 8

Bot 5

Bot 9

Bot 9

238B

238A

233B

233A

NH4

NH4

NH4

NH4

LD01

LD01

LC01

LC01

2019-023

2019-02

2019-02

2019-023

Bot 2

Bot 2

Bot 5

Bot 5

Sample Number	Station	Depth	Raw Fluorescence
240B	LD01		58.5
240B A	LD01		74.5
235A	LC01		83.9
235B	LC01		90.7
228B	LC02		324.3
226A	LC02		695.8
219B	LC04		192.7
219A	LC04		189.8
239B	LD01		76.4
239A	LD01		118.4
234B	LC01		268.3
234A	LC01		256.3
228A	LC02		273.0
225A	LC02		751.4
218B	LC04		183.3
218A	LC04		178.9
238B	LD01		543.2
238A	LD01		505.0
233B	LC01		604.0
233A	LC01		599.1
226B	LC02		684.7
225B	LC02		746.3
217B	LC04		402.4
217A	LC04		409.9

226B

NH4

LC02

2019-023

Bot 6

225B

NH4

LC02

2019-023

Bot 5

217B

NH4

LC04

2019-023

Bot 8

217A

NH4

LC04

2019-023

Bot 8

Ammonium analysis

Cruise

Survey Name

2019-023
LA PEROUSE

Start time/date

End time/date

1320 25 Sep 2019	02 Sept
1515 25 Sep 2019	

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0	0	0	17.8	20.7	16.7	17.5
S1	200	0.5	180.7	175.7	179.3	174.5
S2	400	1	337.4	330.1	340.3	331.4
S3	600	1.5	470.2	484.6	495.3	483.8
S4	800	2	641.5	633.6	651.1	637.4
S5	1000	2.5	798.0	789.8	793.1	777.0

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BAATCH 'E'	29	S3	LB14
------------	----	----	------

153A 154B 155B 180B

NH4 NH4 NH4 NH4

LC11 LC11 LC11 LC09

2019-02: 2019-02: 2019-02: 2019-023

Bot 17 Bot 18 Bot 9 Bot 10

178A 177A 189A 190A

NH4 NH4 NH4 NH4

LC09 LC09 LC08 LC08

2019-02 2019-02 2019-02 2019-023

Bot 19 Bot 18 Bot 9 Bot 10

153B 154A 155A 180A

NH4 NH4 NH4 NH4

LC11 LC11 LC11 LC09

2019-02 2019-02 2019-023 2019-023

Bot 17 Bot 18 Bot 19 Bot 21

178B 177B 199B 200A

NH4 NH4 NH4 NH4

LC09 LC09 LC06 LC06

2019-02 2019-02 2019-02 2019-023

Bot 19 Bot 18 Bot 9 Bot 10

192A 192B 198A 198B

NH4 NH4 NH4 NH4

LC08 LC08 LC06 LC06

2019-023 2019-02 2019-02 2019-023

Bot 12 Bot 12 Bot 5 Bot 5

Sample Number	Station	Depth	Raw Fluorescence
153A	LC11		8.2
154B	LC11		16.6
155B	LC11		16.7
180B	LC09		12.3
178A	LC09		9.8
177A	LC09		11.7
189A	LC08		22.2
190A	LC08		26.6
153B	LC11		14.1
154A	LC11		10.9
155A	LC11		14.7
180A	LC09		19.8
178B	LC09		8.9
177B	LC09		11.2
199B	LC06		83.3
200B	LC06		72.9
192A	LC08		24.4
192B	LC08		24.6
198A	LC06		101.5
198B	LC06		96.9
199A	LC06		83.4
190B	LC08		19.6
189B	LC08		24.5
200B	LC06		75.1

199A

NH4

LC06

2019-023

190B

NH4

LC08

2019-023

Bot 10

189B

NH4

LC08

2019-023

200B

NH4

LC06

2019-023

Bot 7

Ammonium analysis

Cruise

2019-023

Start time/date

1320 25 SEP 2019 02 Sept

Survey Name

LA PEROUSE

End time/date

1515 25 SEP 2019

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0	0	0	19.8	20.7	16.9	17.5
S1	200	0.5	180.7	175.7	177.3	174.5
S2	400	1	339.4	330.1	340.3	331.4
S3	600	1.5	490.2	484.6	495.3	483.8
S4	800	2	641.5	633.6	651.1	637.4
S5	1000	2.5	798.0	787.8	793.1	771.0

1st Read 2nd Read1st Read 2nd Read

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH 'E'	29	53	LB14
-----------	----	----	------

Sample Number	Station	Depth	Raw Fluorescence
246A	LD02		287.5
245A	LD02		173.4
244A	LD02		519.6
252B	LD04		77.0
251A	LD04		85.0
251B	LD04		85.4
258A	LD06		91.8
259A	LD06		16.4
246B	LD02		59.8
245B	LD02		271.1
244B	LD02		525.1
252A	LD04		87.7
250A	LD04		615.0
250B	LD04		560.0
258B	LD06		96.9
260A	LD06		14.8
259B	LD06		15.8
260B	LD06		14.8
277B	LD08		11.6
278B	LD08		11.1
279B	LD08		11.7
277A	LD08		9.5
278A	LD08		15.1
279A	LD08		12.7

246A	245A	244A	252B
NH4	NH4	NH4	NH4
LD02	LD02	LD02	LD04
2019-023	2019-023	2019-023	2019-023
Bot	Bot	Bot 3	Bot 5
251A	251B	258A	259A
NH4	NH4	NH4	NH4
LD04	LD04	LD06	LD06
2019-02	2019-02	2019-02	2019-023
Bot 4	Bot 6	Bot 7	
246B	245B	244B	252A
NH4	NH4	NH4	NH4
LD02	LD02	LD02	LD04
2019-023	2019-023	2019-023	2019-023
Bot 5	Bot 8	Bot	
250A	250B	258B	260A
NH4	NH4	NH4	NH4
LD04	LD04	LD06	LD06
2019-02	2019-02	2019-02	2019-023
Bot 3	Bot 8	Bot	
259B	260B	277B	278B
NH4	NH4	NH4	NH4
LD06	LD06	LD06	LD08
2019-02	2019-02	2019-02	2019-023
Bot	Bot 8	Bot	Bot 16

279B

NH4

LD08

2019-023

Bot 17

277A

NH4

LD08

2019-023

Bot 15

278A

NH4

LD08

2019-023

Bot 16

279A

NH4

LD08

2019-023

Bot 17

Ammonium analysis

Cruise

2019-23

Start time/date

Sept 4

01⁰⁰

Survey Name

La Perouse

End time/date

Sept 4

09³⁰

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0

0

0

11.5

10.3

S1

200

0.5

179.3

167.0

S2

400

1

349.0

341.5

S3

600

1.5

502.1

498.5

S4

800

2

672.2

665.6

S5

1000

2.5

833.3

837.7

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH "E"

LB14 250m

408A

408B

409A

NH4

NH4

NH4

LBP5

LBP5

LBP5

2019-023

2019-0

2019-023

Bot 18

Bot 1

Bot 19

409B

407A

420A

NH4

NH4

NH4

LBP5

NH4

LBP3

2019-02

LBP5

2019-023

Bot 19

2019-023

Bot 10

420B

419B

418A

NH4

NH4

NH4

LBP3

LBP3

LBP3

2019-02

2019-02

2019-023

Bot 10

Bot 9

Bot 8

419A

418B

387A

NH4

NH4

NH4

LBP3

LBP3

LBP07

2019-02

2019-023

2019-023

Bot 9

Bot 8

Bot 19

388B

388A

386B

NH4

NH4

NH4

LBP07

LBP07

LBP07

2019-02

2019-023

2019-023

Bot 21

Bot 20

Bot 18

Sample Number	Station	Depth	Raw Fluorescence
408A	LBP5		150.8
408B	LBP5		260.6 deliolid
409A	LBP5		143.2
409B	LBP5		132.2
407A	LBP5		354.7
420A	LBP3		183.2
420B	LBP3		188.2
419B	LBP3		213.4
418A	LBP3		550.0
419A	LBP3		214.5
418B	LBP3		565.1
387A	LBP7		16.2
388B	LBP7		35.4
388A	LBP7		15.4
386B	LBP7		19.4
386A	LBP7		17.6
387B	LBP7		16.5
365B	LJ06		19.9
366A	LJ06		11.3
367A	LJ06		26.0
365A	LJ06		17.2
366B	LJ06		18.8
367B	LJ06		13.6

386A	387B	365B	366A	367A	365A	366B	367B
NH4	NH4	NH4	NH4	NH4	NH4	NH4	NH4
LBP07	LBP07	LJ06	LJ06	LJ06	LJ06	LJ06	LJ06
2019-023	2019-023	2019-023	2019-023	2019-023	2019-023	2019-023	2019-023
Bot 18	Bot 19	Bot 15	Bot 16	Bot 17	Bot 15	Bot 16	Bot 17

Ammonium analysis

Cruise

2019-023

Start time/date

Survey Name

La Perouse

End time/date

Sept 4

page 2

Standards

microliters 2° std Conc.

Raw Fluor

Raw Fluor

S0

0

0

S1

200

0.5

S2

400

1

S3

600

1.5

S4

800

2

S5

1000

2.5

330B

330A

NH4

NH4

LG06

LG06

2019-023

2019-023

Bot 16

Bot 16

338A

331B

331A

NH4

NH4

NH4

LG04

LG06

LG06

2019-023

2019-023

2019-023

Bot 7

Bot 17

Bot 17

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

338B

347A

346B

NH4

NH4

NH4

LG04

LG02

LG02

2019-02

2019-02

2019-023

Bot 7

Bot 7

Bot 7

339B

347B

346A

NH4

NH4

NH4

LG04

LG02

LG02

2019-02

2019-02

2019-023

Bot 8

Bot 6

Bot 6

339B

348B

348A

NH4

NH4

NH4

LG04

LG02

LG02

2019-02

2019-023

2019-023

Bot 8

Bot 7

Bot 7

340A

299

299

NH4

NH4

NH4

LG04

LD11

LD11

2019-02

2019-02

2019-023

Bot 8

Bot 7

Bot 20

340B

298B

298A

NH4

NH4

NH4

LG04

LD11

LD11

2019-023

2019-02

2019-023

Bot 9

Bot 19

Bot 19

Sample Number	Station	Depth	Raw Fluorescence
330B	LG06		11.8
330A	LG06		15.8
338A	LG04		70.5
331B	LG06		34.6
331A	LG06		24.5
338B	LG04		67.9
347A	LG02		367.4
346B	LG02		360.5
339A	LG04		8.0
347B	LG02		156.2
346A	LG02		159.0
339B	LG04		7.3
348B	LG02		113.2
348A	LG02		215.0 <i>dotisid</i>
340A	LG04		15.2
299B	LD11		32.8
299A	LD11		22.0
340B	LG04		8.8
298B	LD11		27.4
298A	LD11		25.2
329A	LG06		33.6
297A	LD11		15.1
329B	LG06		20.0

329A	297A	329B
NH4	NH4	NH4
LG06	LD11	LG06
2019-023	2019-023	2019-023
Bot 15	Bot 18	Bot 15

Ammonium analysis

Cruise

2019-023

Start time/date

SEP 6 1545

Survey Name

La Perouse

End time/date

SEP 7 0145

Standards

microliters 2° std

Conc.

Raw Fluor

Raw Fluor

S0

0

0

12.2

10.2

S1

200

0.5

194.3

194.0

S2

400

1

364.9

365.8

S3

600

1.5

525.8

528.2

S4

800

2

685.3

686.2

S5

1000

2.5

841.0

831.1

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

BATCH 'D'

LB14250

Sample Number	Station	Depth	Raw Fluorescence
499B	CS06		47.0
471B	CS02		171.5
471A	CS02		182.2
499A	CS06		51.8
472B	CS02		26.9
472A	CS02		28.3
498A	CS06		53.1
489A	CS04		118.5
490B	CS04		37.5
498B	CS06		51.5
473B	CS02		19.4
473A	CS02		35.7
497B	CS06		342.0
489B	CS04		101.5
488A	CS04		101.6
497A	CS06		329.2
490A	CS04		28.0
488B	CS04		175.7
450A	CS00		29.9
451B	CS00		19.7
451A	CS00		24.4
449B	CS00		85.2
449A	CS00		77.5
450B	CS00		31.2

499B

NH4

CS06

2019-023

Bot 6

499A

NH4

CS06

2019-023

498A

NH4

CS06

2019-02

Bot 5

498B

NH4

CS06

2019-02

Bot 5

497B

NH4

CS06

2019-023

Bot 4

471B

NH4

CS02

2019-023

Bot 18

472B

NH4

CS02

2019-023

489

498A

NH4

CS024

2019-023

473B

NH4

CS02

2019-023

429

498B

NH4

CS024

2019-0

Bot 1

471A

NH4

CS02

2019-023

Bot 18

472A

NH4

CS02

2019-023

Bot 19

490

499B

NH4

CS024

2019-023

473A

NH4

CS02

2019-023

428

497A

NH4

CS024

2019-023

Bot 5

497A	499A 497A	497B 488B	450A	451B	451A	449B	449A
NH4	NH4	NH4	NH4	NH4	NH4	NH4	NH4
CS06	CS024	CS024	CS00	CS00	CS00	CS00	CS00
2019-023	2019-023	2019-023	2019-023	2019-023	2019-023	2019-023	2019-023
Bot 4	Bot 7	Bot 5	Bot 19	Bot 20	Bot 20	Bot 18	Bot 18

450B
NH4
CS00
2019-023
Bot 19

Ammonium analysis

page 2

Cruise

2019-023

Start time/date

Survey Name

La Perouse

End time/date

Exp 1545

Standards

	microliters 2° std	Conc.	Raw Fluor	Raw Fluor
S0	0	0		
S1	200	0.5		
S2	400	1		
S3	600	1.5		
S4	800	2		
S5	1000	2.5		

working reagent:

Sensitivity Factor:

midrange std:

Blank water source

521A

520B

520A

NH4

NH4

NH4

SS3

SS3

SS3

2019-023

2019-023

2019-023

Bot 3

Bot 1

Bot 2

521B

519B

519A

NH4

NH4

NH4

SS3

SS3

SS3

2019-023

2019-023

2019-023

Bot 3

Bot 1

524B

517B

517A

NH4

NH4

NH4

NL05

SS1

SS1

2019-023

2019-023

2019-023

Bot 3

525B

516A

516B

NH4

NH4

NH4

NL05

SS1

SS1

2019-023

2019-023

2019-023

Bot 3

Bot 2

Bot 1

524A

515A

515B

NH4

NH4

NH4

NL05

SS1

SS1

2019-023

2019-023

2019-023

Bot 2

Bot 1

Bot 1

Sample Number	Station	Depth	Raw Fluorescence
521A	SS3		296.8
520B	SS3		374.2
520A	SS3		381.1
521B	SS3		292.3
519B	SS3		355.1
519A	SS3		355.0
524B	NL05		27.4
517B	SS1		11.9
517A	SS1		8.0
525B	NL05		83.2
516A	SS1		12.1
516B	SS1		11.4
524A	NL05		28.0
515A	SS1		22.3
515B	SS1		17.1
525A	NL05		57.4
510A	CS09		527.6
510B	CS09		542.3
523B	NL05		104.3
511A	CS09		412.2
511B	CS09		417.1
523A	NL05		104.2
512A	CS09		316.3
512B	CS09		311.1

527B SS5 369.0

528B SS5 199.3

527A SS5 369.4

529A SS5 102.3

528A SS5 198.5

529B SS5 106.5

525A	510A	510B		511A	511B	523A	512A
NH4	NH4	NH4	523B	NH4	NH4	NH4	NH4
NL05	CS09	CS09	NH4	CS09	CS09	NL05	CS09
2019-023	2019-023	2019-023	NL05	2019-023	2019-023	2019-023	2019-023
Bot 3	Bot 9	Bot 9	2019-023	Bot 10	Bot 10	Bot 1	Bot 11
		Bot 1					

	527B						
512B	NH4	527A	528A	529A	529B		
NH4	SS5	NH4	NH4	NH4	NH4		
CS09	2019-023	SS5	SS5	SS5	SS5		
2019-023	Bot 1	2019-023	2019-023	2019-023	2019-023		
Bot 11		Bot 1	Bot 2	Bot 3	Bot 3		