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### Nitrate\_plus\_Nitrite:Bottle

#### Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Nitrate\_plus\_Nitrite:Bottle for the range 0 to 46.0  $\mu\text{mol/l}$  was 0.22,  
k = 22 (0 outlier removed) where k is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples ( $S_p$ ) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where k is the number of pairs and d is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from  
WAKO Chemicals (Sagami Chemical Company of Japan).

The values were within 0.15 % of the 20  $\mu\text{mol/l}$  Nitrate Standard.

Feb 10, 2011 Nitrate stock standard solution was used for this cruise analyses.

#### Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Nitrate 1 $\mu\text{mol/l}$	Nitrate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
2	4	P2	75.7	17.6	17.6		
4	24	P2	5.3	0.0	0.0		
6	29	P4	1250.6	46.0	46.0		
6	39	P4	126.1	27.5	27.6		
16	154	P4	40.2	2.8	2.9		
21	174	P8	1000.8	45.8	46.0		
21	181	P8	174.6	30.2	30.2		
25	201	P12	100.1	11.9	11.6		
27	226	P12	2002.7	43.5	43.5		
27	240	P12	75.2	11.8	11.9		
43	357	P16	600.0	45.2	44.9		
43	363	P16	150.6	27.0	27.0		
48	378	P16	201.2	31.0	31.8		
55	435	P20	2499.8	42.4	41.8		
55	449	P20	100.9	22.0	22.1		
60	465	P20	10.0	7.4	7.5		
82	635	P26	2499.9	42.0	41.7		
82	640	P26	800.3	45.5	44.8		
82	651	P26	49.0	17.2	17.0		
84	660	P26	39.5	13.6	13.6		
104	759	Eddy Centre	400.7	37.8	38.3		
109	776	LB08	124.7	36.0	36.1		

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### Phosphate:Bottle

#### Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Phosphate:Bottle for the range 0.09 to 3.24  $\mu\text{mol/l}$  was 0.016,  
 $k = 21$  (1 outlier removed) where  $k$  is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples ( $S_p$ ) was calculated by:

$$S_p = \text{SQRT}\{\text{sum}(d^2)/2k\}$$

where  $k$  is the number of pairs and  $d$  is the difference between pairs.

Feb 10, 2011 Phosphate stock standard solution ( Feb 23 secondary) was used for this cruise analyses.  
The Phosphate values were the same as the previous (May 2010) stock solution.

#### Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Phosphate 1 $\mu\text{mol/l}$	Phosphate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
2	4	P2	75.7	1.47	1.44		
4	24	P2	5.3	0.09	0.09		
6	29	P4	1250.6	3.23	3.24		
6	39	P4	126.1	1.98	1.97		
16	154	P4	40.2	0.63	0.62		
21	174	P8	1000.8	3.23	3.20		
21	181	P8	174.6	2.08	2.07		
25	201	P12	100.1	1.05	1.00		
27	226	P12	2002.7	2.92	2.93		
27	240	P12	75.2	1.09	1.11		
43	357	P16	600.0	3.10	3.01	yes	Outlier; average still used.
43	363	P16	150.6	1.87	1.87		
48	378	P16	201.2	2.12	2.16		
55	435	P20	2499.8	2.83	2.82		
55	449	P20	100.9	1.61	1.61		
60	465	P20	10.0	0.87	0.87		
82	635	P26	2499.9	2.83	2.84		
82	640	P26	800.3	3.15	3.11		
82	651	P26	49.0	1.46	1.47		
84	660	P26	39.5	1.22	1.25		
104	759	Eddy Centre	400.7	2.60	2.64		
109	776	LB08	124.7	2.69	2.68		

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### Silicate:Bottle

#### Precision statement for replicate samples drawn from a single Niskin bottle:

The pooled standard deviation for Silicate:Bottle for the range 0.3 to 173.1  $\mu\text{mol/l}$  was 0.12,  
 $k = 22$  (0 outlier removed) where  $k$  is the number of pairs of duplicates.

The pooled standard deviation of pairs of samples ( $S_p$ ) was calculated by:

$$S_p = \text{SQRT}\{\sum (d^2)/2k\}$$

where  $k$  is the number of pairs and  $d$  is the difference between pairs.

Accuracy of the stock standard batch was determined by using commercially available standards from  
WAKO Chemicals (Sagami Chemical Company of Japan).

The values were within 0.80 % of the 100  $\mu\text{mol/l}$  Silicate Standard.

The values were within 0.89 % of the 200  $\mu\text{mol/l}$  Silicate standard that was analyzed while running these samples.

Feb 11, 2011 Silicate stock standard solution was used for this cruise analyses.

#### Duplicate samples from a single Niskin bottle

Event Number	Sample Number	Station	Pressure dbar	Silicate 1 $\mu\text{mol/l}$	Silicate 2 $\mu\text{mol/l}$	Rejected yes / no	Comment
2	4	P2	75.7	22.3	22.3		
4	24	P2	5.3	0.3	0.3		
6	29	P4	1250.6	141.0	141.0		
6	39	P4	126.1	32.4	32.4		
16	154	P4	40.2	6.4	6.5		
21	174	P8	1000.8	134.3	134.2		
21	181	P8	174.6	42.7	42.6		
25	201	P12	100.1	15.4	15.0		
27	226	P12	2002.7	173.0	173.1		
27	240	P12	75.2	15.3	15.3		
43	357	P16	600.0	110.2	110.2		
43	363	P16	150.6	40.7	40.6		
48	378	P16	201.2	51.2	51.4		
55	435	P20	2499.8	172.3	172.3		
55	449	P20	100.9	28.5	28.5		
60	465	P20	10.0	12.9	12.9		
82	635	P26	2499.9	172.1	172.2		
82	640	P26	800.3	134.4	134.2		
82	651	P26	49.0	25.6	25.1		
84	660	P26	39.5	21.1	21.1		
104	759	Eddy Centre	400.7	74.1	74.1		
109	776	LB08	124.7	57.5	57.7		