

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P3

Event #:

16

Ship:

Tully

UTC Date (dd mmm yyyy): 7 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation  |                    | Samples Taken / Sampler's Initials |     |        |     |      |  |  |  |  |  | Comments |
|----------|----------|----------|--------------------|--------------------|------------------------------------|-----|--------|-----|------|--|--|--|--|--|----------|
|          |          |          | Target Pressure    | Confirmed Pressure | Oxy                                | Sal | Nut-fr | CHL | HPLC |  |  |  |  |  |          |
| 1        | 1        | 104      | Bot-10             | ✓ 808              | x                                  |     |        |     |      |  |  |  |  |  |          |
| 2        | 2        | 105      | O <sub>2</sub> Max | ✓ 100              | x                                  |     |        |     |      |  |  |  |  |  |          |
| 3        | 3        | 106      | 5                  | ✓ 6                | x                                  | x   | x      | x x | x x  |  |  |  |  |  |          |
| 4        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 5        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 6        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 7        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 8        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 9        |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 10       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 11       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 12       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 13       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 14       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 15       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 16       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 17       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 18       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 19       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 20       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 21       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 22       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 23       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |
| 24       |          |          |                    |                    |                                    |     |        |     |      |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MB

Bottom Depth: 814 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1452 | 0652  |
| Bottom | 1505 |       |
| End    | 1521 |       |

Positional Information  
Start  
Lat: 48 ° 37 45 N  
Lon: 126 ° 20 01 W

Bottom  
Lat: 48 ° 37 59 N  
Lon: 126 ° 20 01 W

End  
Lat: 48 ° 37 55 N  
Lon: 126 ° 19 96 W

Extra comments:

~~Shallow Cesium cast~~P3 + O<sub>2</sub> sensor chk.

Cruise ID: 2017-01 Station: P4 Event #: 17 Ship: Tully UTC Date (dd mmm yyyy): 7 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cesium                             |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 1        | 500               | ✓ 500              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 2        | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 3        | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 4        | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 5        | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 6        | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 7        | 400               | ✓ 400              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 8        | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 9        | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 10       | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 11       | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 12       | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 13       | 300               | ✓ 301              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 14       | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 15       | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 16       | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 17       | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 18       | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 19       | 200               | ✓ 202              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 20       | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 21       | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 22       | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 23       | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 24       | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MB

Bottom Depth: 132 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1641 | 0841  |
| Bottom | 1650 |       |
| End    | 1704 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38 91  | N |
| Lon: | 126 ° 40 03 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38 92  | N |
| Lon: | 126 ° 40 07 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38 97  | N |
| Lon: | 126 ° 40 09 | W |

Extra comments:  
Deep Cesium cast

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P4

Event #: 18

Ship:

Tully

UTC Date (dd mmm yyyy): 7 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |       |       |     |       |     |     | Comments |      |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-------|-------|-----|-------|-----|-----|----------|------|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Nut-F | Nut-C | Sal | DIC   | DOC | DNA | gases    | SAGs |  |  |  |
|          |          |          |                   |                    | HB/RB                              | LH    | LH    | WB  | HR/RW | ALL |     | IS/WB    | SS   |  |  |  |
| 1        | 1        | 25       | Bot-10            | ✓ 1315             | x                                  | x     | x     |     | x     | xx  | x   | xx       | x    |  |  |  |
| 2        | 2        | 26       | 1250              | ✓ 1250             | x                                  | x     | x     | x   | xx    |     | x   | xx       | x    |  |  |  |
| 3        | 3        | 27       | 1250              | ✓ 1250             | xx                                 | x     | x     | xx  | x     | xx  |     |          |      |  |  |  |
| 4        | 4        | 28       | 1000              | ✓ 1000             | x                                  | x     | x     | xx  | x     | xx  | x   | xx       | x    |  |  |  |
| 5        | 5        | 29       | 800               | ✓ 800              | x                                  | x     | x     | x   | x     | xx  | x   | xx       | x    |  |  |  |
| 6        | 6        | 30       | 600               | ✓ 600              | x                                  | xx    | xx    |     | x     | xx  | x   | xx       | x    |  |  |  |
| 7        | 7        | 31       | 400               | ✓ 400              | x                                  | x     | x     |     | x     | xx  | x   | xx       | x    |  |  |  |
| 8        | 8        | 32       | 300               | ✓ 300              | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 9        | 9        | 33       | 250               | ✓ 250              | x                                  | x     |       |     | x     | xx  |     |          |      |  |  |  |
| 10       | 10       | 34       | 200               | ✓ 200              | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 11       | 11       | 35       | 175               | ✓ 175              | xx                                 | x     |       |     | x     | xx  |     |          |      |  |  |  |
| 12       | 12       | 36       | 150               | ✓ 150              | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 13       | 13       | 37       | 125               | ✓ 125              | x                                  | xx    |       |     | x     | xx  |     |          |      |  |  |  |
| 14       | 14       | 38       | 100               | ✓ 100              | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 15       | 15       | 39       | 75                | ✓ 75               | x                                  | x     |       |     | x     | xx  |     |          |      |  |  |  |
| 16       | 16       | 40       | 50                | ✓ 50               | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 17       | 17       | 41       | 25                | ✓ 25               | x                                  | x     |       |     | x     | xx  | x   | xx       | x    |  |  |  |
| 18       | 18       | 42       | 10                | ✓ 10               | x                                  | x     |       |     | x     | xx  | x   |          | x    |  |  |  |
| 19       | 19       | 43       | 5                 | ✓ 5                | xx                                 | x     |       | x   | x     | xx  |     | xx       |      |  |  |  |
| 20       |          |          |                   |                    |                                    |       |       |     |       |     |     |          |      |  |  |  |
| 21       |          |          |                   |                    |                                    |       |       |     |       |     |     |          |      |  |  |  |
| 22       |          |          |                   |                    |                                    |       |       |     |       |     |     |          |      |  |  |  |
| 23       |          |          |                   |                    |                                    |       |       |     |       |     |     |          |      |  |  |  |
| 24       |          |          |                   |                    |                                    |       |       |     |       |     |     |          |      |  |  |  |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 1325 m

Transmisso Cleaned: ☒ Y ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 1729 | 0929  |
| Bottom | 1747 |       |
| End    | 1832 |       |

Positional Information

Start

Lat: 48 ° 38 93 N

Lon: 126 ° 39 96 W

Bottom

Lat: 48 ° 39 04 N

Lon: 126 ° 39 92 W

End

Lat: 48 ° 38 04 N

Lon: 126 ° 40 02 W

Extra comments:

Deep cast

Plus loops 2x Oxy, 1x Sal, 1x Nut

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P4 Event #: 21 Ship: Tully UTC Date (dd mmm yyyy): 7 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|---|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | UBC                                |   |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 44       | Bot-10            | ✓                  | 1315                               | x |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 45       | Bot-10            | ✓                  |                                    |   |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 46       | Bot-10            | ✓                  |                                    |   |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 47       | Bot-10            | ✓                  |                                    |   |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 48       | 1000              |                    |                                    | x |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 49       | 1000              |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 50       | 1000              |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 51       | 1000              |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 52       | 500               |                    |                                    | x |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 53       | 500               |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 54       | 500               |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 55       | 500               |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 56       | 10                |                    |                                    | x |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 57       | 10                |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 58       | 10                |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 59       | 10                |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |   |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): DY/T

Bottom Depth: 1310 m

Transmisso Cleaned: Y / N

| Time   | UTC | Local |
|--------|-----|-------|
| Start  |     |       |
| Bottom |     |       |
| End    |     |       |

Positional Information

Start

Lat: ° N

Lon: ° W

Bottom

Lat: ° N

Lon: ° W

End

Lat: ° N

Lon: ° W

Extra comments:

Jade's cast



# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P4 Event #: 22 Ship: Tully UTC Date (dd mmm yyyy): 7 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |        |     |      |       |      |  |      | Comments |      |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|--------|-----|------|-------|------|--|------|----------|------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-Fr | Chl | HPLC | Phyto | UVic |  | bugs |          |      |  |
| 1        |          | 60       | 300               | ✓ 300                | x                                  |      |      | x      |     |      |       |      |  |      |          |      |  |
| 2        |          | 61       | 250               | ✓ 250                |                                    |      |      | x      |     |      |       | x    |  |      |          |      |  |
| 3        |          | 62       | 200               | ✓ 200                | x                                  | x    | x    | x      |     |      |       |      |  |      |          |      |  |
| 4        |          | 63       | 150               | ✓ 150                | x                                  | x    | x    | xx     |     |      |       | x    |  |      |          |      |  |
| 5        |          | 64       | 100               | ✓ 100                | x                                  |      |      | x      | x   |      |       |      |  |      |          |      |  |
| 6        |          | 65       | 75                | ✓ 74                 | x                                  |      |      | x      | x   |      |       |      |  |      |          |      |  |
| 7        |          | 66       | 60                | ✓ 61                 |                                    |      |      | x      | xx  | xx   |       |      |  |      |          | Fluo |  |
| 8        |          | 67       | 50                | ✓ 50                 | x                                  |      |      | x      | xx  | xx   |       | x    |  |      |          | Fluo |  |
| 9        |          | 68       | 40                | ✓ 40                 | x                                  |      |      | x      | xx  | xx   |       |      |  |      |          | Fluo |  |
| 10       |          | 69       | 30                | ✓ 30                 | x                                  | x    | x    | x      | xx  | xx   |       |      |  |      |          | Fluo |  |
| 11       |          | 70       | 25                | ✓ 24                 | x                                  |      |      | x      | x   |      |       |      |  |      |          |      |  |
| 12       |          | 71       | 20                | ✓ 20                 | xx                                 | xx   | xx   | x      | x   |      |       | x    |  |      |          |      |  |
| 13       |          | 72       | 15                | ✓ 14                 | x                                  |      |      | x      | xx  | xx   |       |      |  |      |          | Fluo |  |
| 14       |          | 73       | 10                | ✓ 10                 | x                                  |      |      | x      | x   |      |       | x    |  |      |          |      |  |
| 15       |          | 74       | 5                 | ✓ 5                  |                                    |      |      | x      | xx  | xx   | xxx   |      |  | x    |          | Fluo |  |
| 16       |          | 75       | 5                 | ✓ 5                  | x                                  | x    | x    |        |     |      |       | x    |  |      |          |      |  |
| 17       |          | 76       | 0                 |                      | x                                  | x    | x    | x      | x   |      |       |      |  |      |          |      |  |
| 18       |          | 77       | 100               | ✓ 100                |                                    |      |      |        |     |      |       |      |  | x    |          |      |  |
| 19       |          | 78       | 50                | ✓ 51                 |                                    |      |      |        |     |      |       |      |  | x    |          |      |  |
| 20       |          | 79       | 5                 | ✓ 5                  |                                    |      |      |        |     |      |       |      |  | x    |          |      |  |
| 21       |          |          |                   |                      |                                    |      |      |        |     |      |       |      |  |      |          |      |  |
| 22       |          |          |                   |                      |                                    |      |      |        |     |      |       |      |  |      |          |      |  |
| 23       |          |          |                   |                      |                                    |      |      |        |     |      |       |      |  |      |          |      |  |
| 24       |          |          |                   |                      |                                    |      |      |        |     |      |       |      |  |      |          |      |  |

Profile type: ROS TRM X-Niskin other?  
 Watchkeeper(s): DY/TV

Bottom Depth: 1300 m  
 Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2248 | 1448  |
| Bottom | 2256 |       |
| End    | 2321 |       |

Positional Information  
 Start  
 Lat: 48° 39.07 N  
 Lon: 126° 39.91 W

Bottom  
 Lat: 48° 39.12 N  
 Lon: 126° 39.89 W

End  
 Lat: 48° 39.11 N  
 Lon: 126° 40.20 W

Extra comments:  
 DMS cast - OUT OF ORDER!  
 Will also have loops for Chl x2  
 1 to 5; 18; 6; 7; 8; 19; 9 to 16; 20;  
 17

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: P4

Event #: 23

Ship: Tully

UTC Date (dd mmm yyyy): 08 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |   |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|---|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | UBC |   |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 44       | Bot-10            | ✓                    | 1301                               |     | x |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 45       | Bot-10            | ✓                    | 1301                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 46       | Bot-10            | ✓                    | 1301                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 47       | Bot-10            | ✓                    | 1306                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 48       | 1000              | ✓                    | 1000                               |     | x |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 49       | 1000              | ✓                    | 1000                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 50       | 1000              | ✓                    | 1000                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 51       | 1000              | ✓                    | 1000                               |     |   |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 52       | 500               | ✓                    | 500                                |     | x |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 53       | 500               | ✓                    | 500                                |     |   |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 54       | 500               | ✓                    | 501                                |     |   |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 55       | 500               | ✓                    | 501                                |     |   |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 56       | 10                | ✓                    | 10                                 |     | x |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 57       | 10                | ✓                    | 10                                 |     |   |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 58       | 10                | ✓                    | 10                                 |     |   |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 59       | 10                | ✓                    | 10                                 |     |   |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |     |   |  |  |  |  |  |  |  |  |  |          |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): MR                                                                                                                     |

|                     |                                                                  |
|---------------------|------------------------------------------------------------------|
| Bottom Depth:       | 1314 m                                                           |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0005 | 1605  |
| Bottom | 0026 |       |
| End    | 0052 |       |

|        |                        |              |
|--------|------------------------|--------------|
| Start  | Positional Information |              |
|        | Lat:                   | 48° 39.02 N  |
|        | Lon:                   | 126° 40.13 W |
| Bottom | ▼                      |              |
|        | Lat:                   | 48° 39.03 N  |
|        | Lon:                   | 126° 40.11 W |
| End    | ▼                      |              |
|        | Lat:                   | 48° 39.04 N  |
|        | Lon:                   | 126° 40.11 W |

|                    |
|--------------------|
| Extra comments:    |
| Jade's cast TAKE 2 |

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P4 Event #: 25 Ship: Tully UTC Date (dd mmm yyyy): 8 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cesium                             |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 80       | 150               | ✓                  | 150                                |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 81       | 150               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 82       | 150               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 83       | 150               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 84       | 150               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 85       | 150               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 86       | 100               | ✓                  | 98                                 |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 87       | 100               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 88       | 100               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 89       | 100               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 90       | 100               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 91       | 100               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 92       | 50                | ✓                  | 50                                 |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 93       | 50                | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 94       | 50                | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 95       | 50                | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 96       | 50                | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 97       | 50                | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 98       | 5                 | ✓                  | 5                                  |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 99       | 5                 | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 100      | 5                 | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 101      | 5                 | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 102      | 5                 | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 103      | 5                 | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): JH/TV

Bottom Depth: 1317 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0142 | 1742  |
| Bottom | 0145 |       |
| End    | 0153 |       |

Positional Information  
Start  
Lat: 48° 38.93 N  
Lon: 126° 40.03 W

Bottom  
Lat: 48° 38.93 N  
Lon: 126° 40.02 W

End  
Lat: 48° 38.93 N  
Lon: 126° 39.99 W

Extra comments:  
Shallow Cesium cast

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P20 Event #: 32 Ship: Tully UTC Date (dd mmm yyyy): 9 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |             | Samples Taken / Sampler's Initials |     |     |       |       |       |     |  |  |  | Comments |      |     |  |  |
|----------|----------|----------|-------------------|-------------|------------------------------------|-----|-----|-------|-------|-------|-----|--|--|--|----------|------|-----|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure                           | OXY | Sal | Nut-F | Nut-C | DIC   | DOC |  |  |  | Gases    | SAGs | DNA |  |  |
|          |          |          |                   |             |                                    | dy  |     | LH    | LH    | RN/NA |     |  |  |  | SS/WB    |      |     |  |  |
| 1        | 1        | 107      | Bot-10            | ✓           | 4025                               | x   |     | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 2        | 2        | 108      | 3500              | ✓           | 3500                               | x   | x   | x     | x     | xx    | xx  |  |  |  |          |      |     |  |  |
| 3        | 3        | 109      | 3500              | ✓           |                                    | xx  | x   | x     | x     | x     |     |  |  |  |          |      |     |  |  |
| 4        | 4        | 110      | 3000              | ✓           | 3000                               | x   | xx  | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 5        | 5        | 111      | 2500              | ✓           | 2501                               | x   | x   | x     | x     | x     | xx  |  |  |  |          |      |     |  |  |
| 6        | 6        | 112      | 2000              | ✓           | 2003                               | x   | xx  | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 7        | 7        | 113      | 1500              | ✓           | 1499                               | x   | x   | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 8        | 8        | 114      | 1250              | ✓           | 1251                               | x   | xx  | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 9        | 9        | 115      | 1000              | ✓           | 1000                               | x   | x   | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 10       | 10       | 116      | 800               | ✓           | 799                                | x   | x   | xx    | xx    | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 11       | 11       | 117      | 600               | ✓           | 600                                | xx  | x   | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 12       | 12       | 118      | 400               | ✓           | 400                                | x   | x   | x     | x     | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 13       | 13       | 119      | 300               | ✓           | 301                                | x   | x   | x     |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 14       | 14       | 120      | 250               | ✓           | 251                                | x   | x   | x     |       | x     | xx  |  |  |  |          |      |     |  |  |
| 15       | 15       | 121      | 200               | ✓           | 202                                | x   | x   | x     |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 16       | 16       | 122      | 175               | ✓           | 175                                | x   | x   | x     |       | x     | xx  |  |  |  |          |      |     |  |  |
| 17       | 17       | 123      | 150               | ✓           | 149                                | x   | x   | x     |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 18       | 18       | 124      | 125               | ✓           | 125                                | xx  | x   | x     |       | x     | xx  |  |  |  |          |      |     |  |  |
| 19       | 19       | 125      | 100               | ✓           | 102                                | x   | x   | x     |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 20       | 20       | 126      | 75                | ✓           | 75                                 | x   | x   | x     |       | x     | xx  |  |  |  |          |      |     |  |  |
| 21       | 21       | 127      | 50                | ✓           | 51                                 | x   | x   | xx    |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 22       | 22       | 128      | 25                | ✓           | 25                                 | x   | x   | x     |       | x     | xx  |  |  |  | xx       | x    | x   |  |  |
| 23       | 23       | 129      | 10                | ✓           | 10                                 | x   | x   | x     |       | x     | xx  |  |  |  |          | x    | x   |  |  |
| 24       | 24       | 130      | 5                 | ✓           | 5                                  | xx  | x   | x     |       | x     | xx  |  |  |  | xx       |      |     |  |  |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): MB                                                                                                                     |

|                           |
|---------------------------|
| Bottom Depth: 3968 m      |
| Transmisso Cleaned: Y / N |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1949 | 1149  |
| Bottom | 2112 |       |
| End    | 2305 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 34.02 N      |
| Lon: 138 ° 40.11 W     |

Start

|                    |
|--------------------|
| Bottom             |
| Lat: 49 ° 34.01 N  |
| Lon: 138 ° 39.95 W |

Bottom

End

|                    |
|--------------------|
| End                |
| Lat: 49 ° 34.05 N  |
| Lon: 138 ° 39.96 W |

|                                |
|--------------------------------|
| Extra comments:                |
| Deep cast                      |
| plus loops for 2x oxy, 1x Sal, |
| 1 x Nut                        |

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P20

Event #: 33

Ship: Tully

UTC Date (dd mmm yyyy): 10 / 2 / 2017

| Cruise ID: 2017-01 |          |          | Station: T20      |                      | Event #: 22                        |      |  |        |     |      |    |      |    |   |   | Date: 11/17/17 |  | Ship: R/V |  | Comments |  |  |
|--------------------|----------|----------|-------------------|----------------------|------------------------------------|------|--|--------|-----|------|----|------|----|---|---|----------------|--|-----------|--|----------|--|--|
| Niskin #           | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
|                    |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP |  | Nut-Fr | Chl | HPLC |    | UVic | DA |   |   |                |  |           |  |          |  |  |
| 1                  |          | 131      | 300               | ✓ 300                | x                                  |      |  |        | x   |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 2                  |          | 132      | 250               | ✓ 250                |                                    |      |  |        | x   |      |    |      |    |   | x |                |  |           |  |          |  |  |
| 3                  |          | 133      | 200               | ✓ 201                | x                                  | x    |  |        | x   |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 4                  |          | 134      | 150               | ✓ 151                | x                                  | x    |  |        | x   |      |    |      |    |   | x |                |  |           |  |          |  |  |
| 5                  |          | 135      | 100               | ✓ 100                | x                                  |      |  |        | x   | x    |    |      |    |   |   |                |  |           |  |          |  |  |
| 6                  |          | 136      | 75                | ✓ 74                 | x                                  |      |  |        | x   | x    |    |      |    |   |   |                |  |           |  |          |  |  |
| 7                  |          | 137      | 60                | ✓ 60                 |                                    |      |  |        | x   | xx   | xx |      |    |   |   |                |  |           |  | Fluo     |  |  |
| 8                  |          | 138      | 50                | ✓ 50                 | x                                  |      |  |        | x   | xx   | xx |      |    | x |   |                |  |           |  | Fluo     |  |  |
| 9                  |          | 139      | 40                | ✓ 40                 | x                                  |      |  |        | x   | xx   | xx |      |    |   |   |                |  |           |  | Fluo     |  |  |
| 10                 |          | 140      | 30                | ✓ 30                 | x                                  | x    |  |        | x   | xx   | xx |      |    |   |   |                |  |           |  | Fluo     |  |  |
| 11                 |          | 141      | 25                | ✓ 25                 | x                                  |      |  |        | x   | x    |    |      |    |   |   |                |  |           |  |          |  |  |
| 12                 |          | 142      | 20                | ✓ 20                 | xx                                 | xx   |  |        | x   | x    |    |      |    | x |   |                |  |           |  |          |  |  |
| 13                 |          | 143      | 15                | ✓ 15                 | x                                  |      |  |        | x   | xx   | xx |      |    |   |   |                |  |           |  | Fluo     |  |  |
| 14                 |          | 144      | 10                | ✓ 10                 | x                                  |      |  |        | xx  | x    |    |      |    | x |   |                |  |           |  |          |  |  |
| 15                 |          | 145      | 5                 | ✓ 5                  | x                                  | x    |  |        | x   | xx   | xx |      |    | x | x |                |  |           |  | Fluo     |  |  |
| 16                 |          | 146      | 0                 | ✓ 3                  | x                                  | x    |  |        | x   | x    |    |      |    |   |   |                |  |           |  |          |  |  |
| 17                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 18                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 19                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 20                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 21                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 22                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 23                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |
| 24                 |          |          |                   |                      |                                    |      |  |        |     |      |    |      |    |   |   |                |  |           |  |          |  |  |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): DY/TU

Bottom Depth: 3966 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0038 | 1638  |
| Bottom | 0046 |       |
| End    | 0108 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 34.04  | N |
| Lon: | 138 ° 40.01 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 34.04  | N |
| Lon: | 138 ° 39.98 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 34.02  | N |
| Lon: | 138 ° 40.00 | W |

Extra comments:  
DMS & UVic cast  
Will also have loops for Chl x2

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P21 Event #: 36 Ship: Tully UTC Date (dd mmm yyyy): 10 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |    |   |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|----|---|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure |                                    |  | Cs |   |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 147      | 200               | ✓                  | 200                                |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 148      | 200               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 149      | 200               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 150      | 200               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 151      | 200               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 152      | 200               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 153      | 150               | ✓                  | 150                                |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 154      | 150               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 155      | 150               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 156      | 150               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 157      | 150               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 158      | 150               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 159      | 100               | ✓                  | 100                                |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 160      | 100               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 161      | 100               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 162      | 100               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 163      | 100               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 164      | 100               | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 165      | 50                | ✓                  | 50                                 |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 166      | 50                | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 167      | 50                | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 168      | 50                | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 169      | 50                | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 170      | 50                | ✓                  |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): DY/TV

Bottom Depth: 3960 m  
 Transmisso Cleaned: ☒ Y ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 0619 | 2219  |
| Bottom | 0625 |       |
| End    | 0635 |       |

Positional Information 38  
 Start  
 Lat: 49 ° 30.01 N  
 Lon: 139 ° 39.98 W

Bottom  
 Lat: 49 ° 38.00 N  
 Lon: 139 ° 40.01 W

End  
 Lat: 49 ° 37.96 N  
 Lon: 139 ° 40.07 W

Extra comments:  
 Cesium 200m cast



Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P21 Event #: 37 Ship: Tully UTC Date (dd mmm yyyy): 10 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |    |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|----|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  | Cs |  |  |  |  |          |
| 1        | 1        | 171      | 500               | ✓ 500              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 2        | 2        | 172      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 3        | 3        | 173      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 4        | 4        | 174      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 5        | 5        | 175      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 6        | 6        | 176      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 7        | 7        | 177      | 400               | ✓ 400              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 8        | 8        | 178      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 9        | 9        | 179      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 10       | 10       | 180      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 11       | 11       | 181      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 12       | 12       | 182      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 13       | 13       | 183      | 300               | ✓ 300              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 14       | 14       | 184      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 15       | 15       | 185      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 16       | 16       | 186      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 17       | 17       | 187      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 18       | 18       | 188      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 19       | 19       | 189      | 5                 | ✓ 5                |                                    |     |     |      |  | x  |  |  |  |  |          |
| 20       | 20       | 190      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 21       | 21       | 191      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 22       | 22       | 192      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 23       | 23       | 193      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 24       | 24       | 194      | 5                 | ✓                  | x                                  | x   | xx  | xx   |  | x  |  |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): DY/TV

Bottom Depth: 3960 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0702 | 2302  |
| Bottom | 0747 |       |
| End    | 0843 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 38.00  | N |
| Lon: | 139 ° 40.01 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 37.99  | N |
| Lon: | 139 ° 40.04 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 38.01  | N |
| Lon: | 139 ° 40.33 | W |

Extra comments:  
Cesium + IOS cast

# Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P22 Event #: 28 Ship: Tully UTC Date (dd mmm yyyy): 10 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  | Comments   |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|------------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |            |
| 1        | 1        | 195      | 600               | ✓ 600              | x                                  |     |     |      |  |  |  |  |  |  |  |  | Nut carboy |
| 2        | 2        | 196      | 5                 | ✓ 5                | x                                  |     |     |      |  |  |  |  |  |  |  |  | Nut carboy |
| 3        | 3        | 197      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |  |  |  |  |            |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |            |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MB

Bottom Depth: 3948 m  
 Transmisso Cleaned: ☒ Y / ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 1407 | 0607  |
| Bottom | 1442 |       |
| End    | 1527 |       |

Positional Information

|        |                    |                     |
|--------|--------------------|---------------------|
| Start  | Lat: 49° 41' 95" N | Lon: 140° 40' 06" W |
| Bottom | Lat: 49° 41' 90" N | Lon: 140° 40' 06" W |
| End    | Lat: 49° 41' 92" N | Lon: 140° 40' 07" W |

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P23

Event #:

40

Ship:

Tully

UTC Date (dd mmm yyyy): 10 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |       |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-------|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | DIC   |  |  |  |  |  |          |
| 1        |          | 198      | 2005              | ✓                  | 2005                               |     | x   |      | x x x |  |  |  |  |  |          |
| 2        |          | 199      | 2005              | ✓                  |                                    |     | x   |      | x x x |  |  |  |  |  |          |
| 3        |          | 200      | 2005              | ✓                  |                                    |     | x   |      | x x x |  |  |  |  |  |          |
| 4        |          | 201      | 2005              | ✓                  |                                    |     | x   |      | x x x |  |  |  |  |  |          |
| 5        |          | 202      | 2005              | ✓                  |                                    |     | x   |      | x x x |  |  |  |  |  |          |
| 6        |          | 203      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 7        |          | 204      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 8        |          | 205      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 9        |          | 206      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 10       |          | 207      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 11       |          | 208      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 12       |          | 209      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 13       |          | 210      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 14       |          | 211      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 15       |          | 212      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 16       |          | 213      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 17       |          | 214      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 18       |          | 215      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 19       |          | 216      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 20       |          | 217      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 21       |          | 218      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 22       |          | 219      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 23       |          | 220      | 2005              | ✓                  |                                    |     | x   |      |       |  |  |  |  |  |          |
| 24       |          | 221      | 5                 | ✓                  | 5                                  | x   | x   | x x  | x x   |  |  |  |  |  |          |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): DY/TU                                                                                                                  |

|                     |       |
|---------------------|-------|
| Bottom Depth:       | m     |
| Transmisso Cleaned: | Y / N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 2054 | 1254  |
| Bottom | 2137 |       |
| End    | 2222 |       |

|                        |                    |
|------------------------|--------------------|
| Positional Information |                    |
| Start                  | Lat: 49 ° 46.03 N  |
|                        | Lon: 141 ° 39.87 W |

|        |                    |
|--------|--------------------|
| Bottom | Lat: 49 ° 46.03 N  |
|        | Lon: 141 ° 40.01 W |

|     |                    |
|-----|--------------------|
| End | Lat: 49 ° 46.12 N  |
|     | Lon: 141 ° 40.17 W |

|                 |
|-----------------|
| Extra comments: |
|-----------------|

## Sampling Log

**Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC**

Cruise ID: 2017-01 Station: P24 Event #: 42 Ship: Tully UTC Date (dd mmm yyyy): 11 2 2017

[illegible]

Profile type: ROS TRM X-Niskin other?

Watchkeeper(s): DY/TU

Bottom Depth: 3985 m

Transmisso Cleaned: (Y) / N

| <i>Time</i> | <i>UTC</i> | <i>Local</i> |
|-------------|------------|--------------|
| Start       | 0336       | 1936         |
| Bottom      | 0422       |              |
| End         | 0506       |              |

|        | Positional Information |   |   |
|--------|------------------------|---|---|
| Start  | Lat: 49 ° 50.27        | N | ▼ |
|        | Lon: 142 ° 39.96       | W |   |
| Bottom | Lat: 49 ° 50.24        | N | ▼ |
|        | Lon: 142 ° 39.94       | W |   |
| End    | Lat: 49 ° 50.19        | N |   |
|        | Lon: 142 ° 40.23       | W |   |

**Extra comments:**

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P25

Event #:

43

Ship:

Tully

UTC Date (dd mmm yyyy):

11 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  |  |  | Comments     |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|--|--|--------------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |  |  |              |
| 1        | 1        | 223      | 5                 | ✓                  | x                                  | x   | xx  | xx   |  |  |  |  |  |  |  |  |  |  | Leaky bottom |
| 2        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 3        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |  |  |  |  |              |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 4152 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0936 | 0136  |
| Bottom | 1014 |       |
| End    | 1047 |       |

Positional Information

Start Lat: 50 ° 0 06 N

Start Lon: 143 ° 36 28 W

Bottom Lat: 50 ° 0 01 N

Bottom Lon: 143 ° 36 24 W

End Lat: 50 ° 0 03 N

End Lon: 143 ° 36 23 W

Extra comments:

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P35 Event #: Ship: Tully UTC Date (dd mmm yyyy):

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |     |     |      |     |  |  |  |  |  | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|------------|------------------------------------|-----|-----|------|-----|--|--|--|--|--|----------|--|--|--|--|--|
|          |          |          | Target            | Confirmed  | Nut-F                              | Sal | Chl | HPLC |     |  |  |  |  |  |          |  |  |  |  |  |
|          |          |          | Pressure          | ✓ Pressure |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 1        |          | 224      | 5                 |            |                                    | x   | x   | x x  | x x |  |  |  |  |  |          |  |  |  |  |  |
| 2        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 3        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 4        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 5        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 6        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 7        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 8        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 9        |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 10       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 11       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 12       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 13       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 14       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 15       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 16       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 17       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 18       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 19       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 20       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 21       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 22       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 23       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |
| 24       |          |          |                   |            |                                    |     |     |      |     |  |  |  |  |  |          |  |  |  |  |  |

Version: 25 Nov 2011

Transmissometer to be cleaned before each cast, do not use a wet cloth to clean the sensor.

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s):

Bottom Depth: m  
Transmisso Cleaned: Y / N

| Time   | UTC | Local |
|--------|-----|-------|
| Start  |     |       |
| Bottom |     |       |
| End    |     |       |

Positional Information

|      |   |   |
|------|---|---|
| Lat: | ° | N |
| Lon: | ° | W |

▼

|      |   |   |
|------|---|---|
| Lat: | ° | N |
| Lon: | ° | W |

▼

|      |   |   |
|------|---|---|
| Lat: | ° | N |
| Lon: | ° | W |

Exti

224 CHI P35 5 m 5 m 201 Bot 1

2017-01



## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P26

Event #:

44

Ship:

Tully

UTC Date (dd mmm yyyy): 12 2 2017

| Cruise ID: 2017-01 |          |          | Station: P26      |                    | Event #: 1                         |   | Smp. 1 |  | Run 1 |  | Comments |  |  |  |  |  |  |  |  |  |
|--------------------|----------|----------|-------------------|--------------------|------------------------------------|---|--------|--|-------|--|----------|--|--|--|--|--|--|--|--|--|
| Niskin #           | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
|                    |          |          | Target Pressure   | Confirmed Pressure | UBC                                |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 1                  | 1        | 225      | 2000              | ✓ 2000             |                                    | x |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 2                  | 2        | 226      | 2000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 3                  | 3        | 227      | 2000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 4                  | 4        | 228      | 2000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 5                  | 5        | 229      | 1000              | ✓ 1000             |                                    | x |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 6                  | 6        | 230      | 1000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 7                  | 7        | 231      | 1000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 8                  | 8        | 232      | 1000              | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 9                  | 9        | 233      | 500               | ✓ 500              |                                    | x |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 10                 | 10       | 234      | 500               | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 11                 | 11       | 235      | 500               | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 12                 | 12       | 236      | 500               | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 13                 | 13       | 237      | 10                | ✓ 10               |                                    | x |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 14                 | 14       | 238      | 10                | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 15                 | 15       | 239      | 10                | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 16                 | 16       | 240      | 10                | ✓                  |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 17                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 18                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 19                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 20                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 21                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 22                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 23                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |
| 24                 |          |          |                   |                    |                                    |   |        |  |       |  |          |  |  |  |  |  |  |  |  |  |

Profile type:

ROS TRM X-Niskin other?

Watchkeeper(s): DY/TV

Bottom Depth: 4252 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0614 | 2214  |
| Bottom | 0658 |       |
| End    | 0743 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.11   | N |
| Lon: | 144 ° 59.91 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.11   | N |
| Lon: | 144 ° 59.91 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.11   | N |
| Lon: | 144 ° 59.91 | W |

Extra comments:

Jade's cast

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P26

Event #:

47

Ship:

Tully

UTC Date (dd mmm yyyy):

12 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cesium                             |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 241      | 150               | ✓                  | 150                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 242      | 150               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 243      | 150               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 244      | 150               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 245      | 150               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 246      | 150               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 247      | 100               | ✓                  | 100                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 248      | 100               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 249      | 100               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 250      | 100               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 251      | 100               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 252      | 100               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 253      | 50                | ✓                  | 50                                 | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 254      | 50                | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 255      | 50                | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 256      | 50                | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 257      | 50                | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 258      | 50                | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 259      | 5                 | ✓                  | 5                                  | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 260      | 5                 | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 261      | 5                 | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 262      | 5                 | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 263      | 5                 | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 264      | 5                 | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MB

Bottom Depth: 4255 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0933 | 0147  |
| Bottom | 0936 |       |
| End    | 0944 |       |

Positional Information

|       |                    |
|-------|--------------------|
| Start | Lat: 50 ° 0 11 N   |
|       | Lon: 144 ° 59 91 W |

Bottom

|                    |
|--------------------|
| Lat: 50 ° 0 11 N   |
| Lon: 144 ° 59 91 W |

End

|                    |
|--------------------|
| Lat: 50 ° 0 11 N   |
| Lon: 144 ° 59 91 W |

Extra comments:  
Shallow Cesium cast

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P26 Event #: 48 Ship: Tully UTC Date (dd mmm yyyy): 12 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cesium                             |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 265      | 500               | /                  | 500                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 266      | 500               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 267      | 500               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 268      | 500               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 269      | 500               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 270      | 500               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 271      | 400               | /                  | 400                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 272      | 400               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 273      | 400               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 274      | 400               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 275      | 400               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 276      | 400               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 277      | 300               | /                  | 300                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 278      | 300               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 279      | 300               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 280      | 300               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 281      | 300               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 282      | 300               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 283      | 200               | /                  | 200                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 284      | 200               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 285      | 200               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 286      | 200               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 287      | 200               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 288      | 200               | /                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MB

Bottom Depth: 4255 m  
 Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1007 | 0207  |
| Bottom | 1018 |       |
| End    | 1032 |       |

Positional Information

|      |               |
|------|---------------|
| Lat: | 50 ° 0 06 N   |
| Lon: | 144 ° 59 95 W |

Start

▼

|      |               |
|------|---------------|
| Lat: | 50 ° 0 06 N   |
| Lon: | 144 ° 59 96 W |

Bottom

▼

|      |               |
|------|---------------|
| Lat: | 50 ° 0 06 N   |
| Lon: | 144 ° 59 95 W |

End

Extra comments:  
 Deep Cesium cast

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P26

Event #:

50

Ship:

Tully

UTC Date (dd mmm yyyy): 12 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |       |     |     |     |  |  |    | Gases | DNA | SAGs | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-------|-----|-----|-----|--|--|----|-------|-----|------|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC | Alk | DOC |  |  |    |       |     |      |          |
| 1        | 1        | 289      | Bot-10            | ✓ 4317             | x                                  |     | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 2        | 2        | 290      | 4000              | ✓ 4001             | x                                  | x   | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 3        | 3        | 291      | 3500              | ✓ 3500             | x                                  | xx  | xxxx  | xxxx  | xx  | x   | xx  |  |  |    |       |     |      |          |
| 4        | 4        | 292      | 3000              | ✓ 3000             | x                                  | x   | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 5        | 5        | 293      | 2500              | ✓ 2501             | xx                                 | xx  | xx    | xx    | x   | x   | xx  |  |  |    |       |     |      |          |
| 6        | 6        | 294      | 2000              | ✓ 2000             | x                                  | x   | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 7        | 7        | 295      | 1500              | ✓ 1500             | x                                  | xx  | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 8        | 8        | 296      | 1250              | ✓ 1252             | x                                  | x   | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 9        | 9        | 297      | 1000              | ✓ 1002             | x                                  | xx  | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 10       | 10       | 298      | 800               | ✓ 800              | x                                  | x   | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 11       | 11       | 299      | 600               | ✓ 600              | x                                  |     | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 12       | 12       | 300      | 400               | ✓ 400              | x                                  |     | xx    | xx    | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 13       | 13       | 301      | 300               | ✓ 300              | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 14       | 14       | 302      | 250               | ✓ 250              | xx                                 |     | xx    |       | x   | x   | xx  |  |  |    |       |     |      |          |
| 15       | 15       | 303      | 200               | ✓ 201              | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 16       | 16       | 304      | 175               | ✓ 175              | x                                  |     | xxxx  |       | x   | x   | xx  |  |  |    |       |     |      |          |
| 17       | 17       | 305      | 150               | ✓ 150              | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 18       | 18       | 306      | 125               | ✓ 125              | x                                  |     | xx    |       | x   | x   | xx  |  |  |    |       |     |      |          |
| 19       | 19       | 307      | 100               | ✓ 100              | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 20       | 20       | 308      | 75                | ✓ 75               | xx                                 |     | xx    |       | x   | x   | xx  |  |  |    |       |     |      |          |
| 21       | 21       | 309      | 50                | ✓ 50               | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 22       | 22       | 310      | 25                | ✓ 25               | x                                  |     | xx    |       | x   | x   | xx  |  |  | xx | x     | x   |      |          |
| 23       | 23       | 311      | 10                | ✓ 10               | x                                  |     | xx    |       | x   | x   | xx  |  |  |    | x     | x   |      |          |
| 24       | 24       | 312      | 5                 | ✓ 5                | xx                                 |     | xx    |       | x   | x   | xx  |  |  | xx |       |     |      |          |

|                         |
|-------------------------|
| Profile type:           |
| ROS TRM X-Niskin other? |
| Watchkeeper(s): MB      |

|                     |      |   |
|---------------------|------|---|
| Bottom Depth:       | 4255 | m |
| Transmisso Cleaned: | Y    | N |

|        |      |       |
|--------|------|-------|
|        | UTC  | Local |
| Start  | 1209 | 0409  |
| Bottom | 1326 |       |
| End    | 1510 |       |

DP MODE ☺

|                        |       |   |      |
|------------------------|-------|---|------|
| Positional Information |       |   |      |
| Lat:                   | 50 °  | 0 | 01 N |
| Lon:                   | 145 ° | 0 | 00 W |

Start

|      |       |   |      |
|------|-------|---|------|
| Lat: | 50 °  | 0 | 01 N |
| Lon: | 145 ° | 0 | 00 W |

Bottom

|      |       |   |      |
|------|-------|---|------|
| Lat: | 50 °  | 0 | 01 N |
| Lon: | 145 ° | 0 | 00 W |

End

|      |       |   |      |
|------|-------|---|------|
| Lat: | 50 °  | 0 | 01 N |
| Lon: | 145 ° | 0 | 00 W |

Extra comments:

Deep cast

Will have loop for 2xOXY 1xSal

1 x Nut

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P26

Event #:

51

Ship:

Tully

UTC Date (dd mmm yyyy):

12 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |        |     |      |       |      |    |      |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|--------|-----|------|-------|------|----|------|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP | Nut-Fr | Chl | HPLC | Phyto | UVic | DA | bugs |  |  |  |          |
| 1        | 1        | 313      | 300               | ✓ 299              | x                                  |      |        | x   |      |       |      |    |      |  |  |  |          |
| 2        | 2        | 314      | 250               | ✓ 250              |                                    |      |        | x   |      |       | x    |    |      |  |  |  |          |
| 3        | 3        | 315      | 200               | ✓ 202              | x                                  | x    |        | x   |      |       |      |    |      |  |  |  |          |
| 4        | 4        | 316      | 150               | ✓ 150              | x                                  | x    |        | x   |      |       | x    |    |      |  |  |  |          |
| 5        | 5        | 317      | 100               | ✓ 100              | x                                  |      |        | x   | x    |       |      |    |      |  |  |  |          |
| 6        | 6        | 318      | 75                | ✓ 75               | x                                  |      |        | x   | x    |       |      |    |      |  |  |  | Fluo     |
| 7        | 8        | 319      | 60                | ✓ 60               |                                    |      |        | x   | xx   | xx    |      |    |      |  |  |  | Fluo     |
| 8        | 9        | 320      | 50                | ✓ 50               | x                                  |      |        | x   | xx   | xx    |      | x  |      |  |  |  | Fluo     |
| 9        | 11       | 321      | 40                | ✓ 40               | x                                  |      |        | xx  | xx   | xx    |      |    |      |  |  |  | Fluo     |
| 10       | 12       | 322      | 30                | ✓ 30               | x                                  | x    |        | x   | xx   | xx    |      |    |      |  |  |  |          |
| 11       | 13       | 323      | 25                | ✓ 25               | x                                  |      |        | x   | x    |       |      |    |      |  |  |  |          |
| 12       | 14       | 324      | 20                | ✓ 20               | xx                                 | xx   |        | x   | x    |       | x    |    |      |  |  |  | Fluo     |
| 13       | 15       | 325      | 15                | ✓ 15               | x                                  |      |        | x   | xx   | xx    |      |    |      |  |  |  |          |
| 14       | 16       | 326      | 10                | ✓ 10               | x                                  |      |        | x   | x    |       | x    |    |      |  |  |  | Fluo     |
| 15       | 17       | 327      | 5                 | ✓ 5                |                                    |      |        | x   | xx   | xx    | xxx  | x  |      |  |  |  |          |
| 16       | 18       | 328      | 5                 | ✓ 5                | x                                  | x    |        |     |      |       | x    |    |      |  |  |  |          |
| 17       | 20       | 329      | 0                 |                    | x                                  | x    |        | x   | x    |       |      |    |      |  |  |  |          |
| 18       | 6        | 330      | 100               | ✓ 100              |                                    |      |        |     |      |       |      |    | x    |  |  |  |          |
| 19       | 10       | 331      | 50                | ✓ 50               |                                    |      |        |     |      |       |      |    | x    |  |  |  |          |
| 20       | 19       | 332      | 5                 | ✓ 5                |                                    |      |        |     |      |       |      |    | x    |  |  |  |          |
| 21       |          |          |                   |                    |                                    |      |        |     |      |       |      |    |      |  |  |  |          |
| 22       |          |          |                   |                    |                                    |      |        |     |      |       |      |    |      |  |  |  |          |
| 23       |          |          |                   |                    |                                    |      |        |     |      |       |      |    |      |  |  |  |          |
| 24       |          |          |                   |                    |                                    |      |        |     |      |       |      |    |      |  |  |  |          |

Profile type:

ROS TRM X-Niskin other?

Watchkeeper(s):

MB

Bottom Depth: 4255 m

Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1636 | 0836  |
| Bottom | 1643 |       |
| End    | 1705 |       |

Positional Information

|       |                   |
|-------|-------------------|
| Start | Lat: 50 ° 0 01 N  |
|       | Lon: 145 ° 0 02 W |

|        |                   |
|--------|-------------------|
| Bottom | Lat: 50 ° 0 01 N  |
|        | Lon: 145 ° 0 01 W |

|     |                   |
|-----|-------------------|
| End | Lat: 50 ° 0 01 N  |
|     | Lon: 145 ° 0 02 W |

Extra comments:

DMS cast - OUT OF ORDER!

Will also have loops for Chl x2 -

1 to 5; 18; 6; 7; 8; 19; 9 to 16; 20;

17



## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P19

Event #:

59

Ship:

Tully

UTC Date (dd mmm yyyy):

15 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      | Comments |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|----------|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |          |  |
| 1        |          | 333      | 5                 | ✓                  | 6                                  | x   | x   | xx   | xx       |  |
| 2        |          |          |                   |                    |                                    |     |     |      |          |  |
| 3        |          |          |                   |                    |                                    |     |     |      |          |  |
| 4        |          |          |                   |                    |                                    |     |     |      |          |  |
| 5        |          |          |                   |                    |                                    |     |     |      |          |  |
| 6        |          |          |                   |                    |                                    |     |     |      |          |  |
| 7        |          |          |                   |                    |                                    |     |     |      |          |  |
| 8        |          |          |                   |                    |                                    |     |     |      |          |  |
| 9        |          |          |                   |                    |                                    |     |     |      |          |  |
| 10       |          |          |                   |                    |                                    |     |     |      |          |  |
| 11       |          |          |                   |                    |                                    |     |     |      |          |  |
| 12       |          |          |                   |                    |                                    |     |     |      |          |  |
| 13       |          |          |                   |                    |                                    |     |     |      |          |  |
| 14       |          |          |                   |                    |                                    |     |     |      |          |  |
| 15       |          |          |                   |                    |                                    |     |     |      |          |  |
| 16       |          |          |                   |                    |                                    |     |     |      |          |  |
| 17       |          |          |                   |                    |                                    |     |     |      |          |  |
| 18       |          |          |                   |                    |                                    |     |     |      |          |  |
| 19       |          |          |                   |                    |                                    |     |     |      |          |  |
| 20       |          |          |                   |                    |                                    |     |     |      |          |  |
| 21       |          |          |                   |                    |                                    |     |     |      |          |  |
| 22       |          |          |                   |                    |                                    |     |     |      |          |  |
| 23       |          |          |                   |                    |                                    |     |     |      |          |  |
| 24       |          |          |                   |                    |                                    |     |     |      |          |  |

Profile type:

ROS TRM X-Niskin other?

Watchkeeper(s): DY / TV

Bottom Depth: ~3925 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0305 | 1905  |
| Bottom | 0249 |       |
| End    | 0428 |       |

## Positional Information

Start  
Lat: 49° 30.06 N  
Lon: 137° 40.04 W

Bottom  
Lat: 49° 30.08 N  
Lon: 137° 40.14 W

End  
Lat: 49° 30.08 N  
Lon: 137° 40.13 W

Extra comments:



# Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P18

Event #:

62

Ship:

Tully

UTC Date (dd mmm yyyy):

15 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 1        | 1        | 334      | 2005              | ✓ 2005             |                                    | x   |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 2        | 2        | 335      | 1500              | ✓ 1500             |                                    | x   |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 3        | 3        | 336      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MS

Bottom Depth: 3835 m  
 Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 0854  | 0054  |
| Bottom | 0929  |       |
| End    | 10 03 |       |

Positional Information  
 Start  
 Lat: 49 ° 26 10 N  
 Lon: 136 ° 40 10 W

Bottom  
 Lat: 49 ° 26 12 N  
 Lon: 136 ° 40 14 W

End  
 Lat: 49 ° 26 16 N  
 Lon: 136 ° 40 15 W

Extra comments:

# Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P17 Event #: 63 Ship: Tully UTC Date (dd mmm yyyy): 15 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |
| 1        | 1        | 337      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |  |  |          |
| 2        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 3        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 3566 m

Transmisso Cleaned: ☒ Y / ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 1403 | 0603  |
| Bottom | 1444 |       |
| End    | 1518 |       |

Positional Information

Start Lat: 49 ° 20 98 N

Start Lon: 135 ° 39 95 W

Bottom Lat: 49 ° 20 95 N

Bottom Lon: 135 ° 39 86 W

End Lat: 49 ° 20 95 N

End Lon: 135 ° 39 81 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P16

Event #: 64

Ship: Tully

UTC Date (dd mmm yyyy): 15 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |  |        |     |      |    |      |  |  |  | Comments        |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|--|--------|-----|------|----|------|--|--|--|-----------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP |  | Nut-Fr | Chl | HPLC | DA | UVic |  |  |  |                 |
| 1        | 1        | 338      | 300               | ✓ 300                | x                                  |      |  | x      |     |      |    |      |  |  |  |                 |
| 2        | 2        | 339      | 250               | ✓ 250                |                                    |      |  | x      |     |      |    | x    |  |  |  |                 |
| 3        | 3        | 340      | 200               | ✓ 200                | x                                  | x    |  | x      |     |      |    |      |  |  |  |                 |
| 4        | 4        | 341      | 150               | ✓ 150                | x                                  | x    |  | x      |     |      |    | x    |  |  |  |                 |
| 5        | 5        | 342      | 100               | ✓ 101                | x                                  |      |  | x      | x   |      |    |      |  |  |  |                 |
| 6        | 6        | 343      | 75                | ✓ 75                 | x                                  |      |  | x      | x   |      |    |      |  |  |  |                 |
| 7        | 7        | 344      | 60                | ✓ 60                 |                                    |      |  | xx     | xx  | xx   |    |      |  |  |  | Fluo            |
| 8        | 8        | 345      | 50                | ✓ 50                 | x                                  |      |  | x      | xx  | xx   |    | x    |  |  |  | Fluo            |
| 9        | 9        | 346      | 40                | ✓ 40                 | x                                  |      |  | x      | xx  | xx   |    |      |  |  |  | Fluo            |
| 10       | 10       | 347      | 30                | ✓ 30                 | x                                  | x    |  | x      | xx  | xx   |    |      |  |  |  | Fluo            |
| 11       | 11       | 348      | 25                | ✓ 26                 | x                                  |      |  | x      | x   |      |    |      |  |  |  |                 |
| 12       | 12       | 349      | 20                | ✓ 20                 | xx                                 | xx   |  | x      | x   |      |    | x    |  |  |  |                 |
| 13       | 13       | 350      | 15                | ✓ 15                 | x                                  |      |  | x      | xx  | xx   |    |      |  |  |  | Fluo            |
| 14       | 14       | 351      | 10                | ✓ 10                 | x                                  |      |  | x      | x   |      |    | x    |  |  |  |                 |
| 15       | 15       | 352      | 5                 | ✓ 5                  | x                                  | x    |  | x      | xx  | xx   | 4x | x    |  |  |  | Fluo            |
| 16       | 16       | 353      | 0                 | ✓ 2                  | x                                  | x    |  | x      | x   |      | x  |      |  |  |  | no water for DA |
| 17       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 18       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 19       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 20       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 21       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 22       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 23       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |
| 24       |          |          |                   |                      |                                    |      |  |        |     |      |    |      |  |  |  |                 |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MS/04

Bottom Depth: 3633 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1923 | 1123  |
| Bottom | 1929 |       |
| End    | 1952 |       |

Positional Information

|                     |                    |
|---------------------|--------------------|
| Start               | Lat: 49° 17' 00" N |
| Lon: 134° 40' 00" W |                    |

Start

Bottom

|                     |
|---------------------|
| Lat: 49° 16' 99" N  |
| Lon: 134° 40' 01" W |

Bottom

End

|                     |
|---------------------|
| Lat: 49° 17' 02" N  |
| Lon: 134° 40' 14" W |

End

Extra comments:  
DMS & UVic cast  
Will also have loops for Chl x2

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P16 Event #: 68 Ship: Tully UTC Date (dd mmm yyyy): 15 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |     |     |  |  |  |       | Comments |     |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|-----|-----|--|--|--|-------|----------|-----|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC | DOC |  |  |  | Gases | SAGs     | DNA |  |  |  |
| 1        |          | 354      | Bot-10            | ✓ 3684               | x                                  |     | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 2        |          | 355      | 3500              | ✓ 3501               | x                                  | xx  | xx    | xx    | xx  | xx  |  |  |  |       |          |     |  |  |  |
| 3        |          | 356      | 3500              | ✓                    | xx                                 | x   | x     | x     | x   | xx  |  |  |  |       |          |     |  |  |  |
| 4        |          | 357      | 3000              | ✓ 3000               | x                                  | xx  | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 5        |          | 358      | 2500              | ✓ 2500               | x                                  | x   | x     | x     | x   | xx  |  |  |  |       |          |     |  |  |  |
| 6        |          | 359      | 2000              | ✓ 2000               | x                                  | xx  | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 7        |          | 360      | 1500              | ✓ 1503               | x                                  | x   | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 8        |          | 361      | 1250              | ✓ 1251               | x                                  | xx  | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 9        |          | 362      | 1000              | ✓ 1001               | x                                  | xx  | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 10       |          | 363      | 800               | ✓ 800                | xx                                 |     | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 11       |          | 364      | 600               | ✓ 601                | x                                  |     | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 12       |          | 365      | 400               | ✓ 400                | x                                  |     | x     | x     | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 13       |          | 366      | 300               | ✓ 300                | x                                  |     | x     |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 14       |          | 367      | 250               | ✓ 251                | x                                  |     | x     |       | x   | xx  |  |  |  |       |          |     |  |  |  |
| 15       |          | 368      | 200               | ✓ 200                | x                                  |     | x     |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 16       |          | 369      | 175               | ✓ 175                | xx                                 |     | x     |       | x   | xx  |  |  |  |       |          |     |  |  |  |
| 17       |          | 370      | 150               | ✓ 150                | x                                  |     | x     |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 18       |          | 371      | 125               | ✓ 125                | x                                  |     | x     |       | x   | xx  |  |  |  |       |          |     |  |  |  |
| 19       |          | 372      | 100               | ✓ 100                | x                                  |     | x     |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 20       |          | 373      | 75                | ✓ 75                 | x                                  |     | x     |       | x   | xx  |  |  |  |       |          |     |  |  |  |
| 21       |          | 374      | 50                | ✓ 51                 | x                                  |     | x     |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 22       |          | 375      | 25                | ✓ 25                 | x                                  |     | xx    |       | x   | xx  |  |  |  | xx    | x        | x   |  |  |  |
| 23       |          | 376      | 10                | ✓ 10                 | x                                  |     | x     |       | x   | xx  |  |  |  |       | x        | x   |  |  |  |
| 24       |          | 377      | 5                 | ✓ 5                  | xx                                 | x   | x     |       | x   | xx  |  |  |  | xx    |          |     |  |  |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): JY/TV

Bottom Depth: 3640 m  
 Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2302 | 1502  |
| Bottom | 0030 |       |
| End    | 0209 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 49° 16.99  | N |
| Lon: | 134° 40.04 | W |

Start

Bottom

End

Lat: 49° 16.99 N  
 Lon: 134° 40.09 W

Lat: 49° 17.03 N  
 Lon: 134° 40.12 W

Extra comments:  
 Deep cast  
 Will also have loops for Sal x1,  
 Oxy x2, Nut x1

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P16 Event #: 69 Ship: Tully UTC Date (dd mmm yyyy): 16 2 2017

|          |          |          | Rosette Operation |                    | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|----------|
| Niskin # | Firing # | Sample # | Target Pressure   | Confirmed Pressure | Cesium                             |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 378      | 500               | ✓                  | 500                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 379      | 500               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 380      | 500               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 381      | 500               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 382      | 500               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 383      | 500               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 384      | 400               | ✓                  | 400                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 385      | 400               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 386      | 400               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 387      | 400               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 388      | 400               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 389      | 400               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 390      | 300               | ✓                  | 300                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 391      | 300               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 392      | 300               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 393      | 300               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 394      | 300               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 395      | 300               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 396      | 200               | ✓                  | 200                                | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 397      | 200               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 398      | 200               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 399      | 200               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 400      | 200               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 401      | 200               | ✓                  |                                    | x |  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TUBottom Depth: 3635 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0311 | 1911  |
| Bottom | 0323 |       |
| End    | 0339 |       |

Positional Information  
Start  
Lat: 49° 16.99 N  
Lon: 134° 39.93 WBottom  
Lat: 49° 17.00 N  
Lon: 134° 39.90 WEnd  
Lat: 49° 17.03 N  
Lon: 134° 40.08 WExtra comments:  
Deep Cesium cast

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: P16

Event #: 70

Ship: Tully

UTC Date (dd mmm yyyy): 16 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cesium                             |  |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 402      | 150               | ✓ 150              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 403      | 150               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 404      | 150               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 405      | 150               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 406      | 150               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 407      | 150               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 408      | 100               | ✓ 100              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 409      | 100               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 410      | 100               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 411      | 100               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 412      | 100               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 413      | 100               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 414      | 50                | ✓ 50               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 415      | 50                | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 416      | 50                | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 417      | 50                | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 17       | 17       | 418      | 50                | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 18       | 18       | 419      | 50                | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 19       | 19       | 420      | 5                 | ✓ 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 20       | 20       | 421      | 5                 | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 21       | 21       | 422      | 5                 | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 22       | 22       | 423      | 5                 | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 23       | 23       | 424      | 5                 | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 24       | 24       | 425      | 5                 | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TV

Bottom Depth: 3635 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0403 | 2003  |
| Bottom | 0408 |       |
| End    | 0416 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.01  | N |
| Lon: | 134 ° 39.96 | W |

Start

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.00  | N |
| Lon: | 134 ° 39.98 | W |

Bottom

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 16.99  | N |
| Lon: | 134 ° 40.07 | W |

End

Extra comments:  
Shallow Cesium cast



Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P15 Event #: 72 Ship: Tully UTC Date (dd mmm yyyy): 16 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 426      | 5                 | <input checked="" type="checkbox"/>                    | x                                  | x   | xx  | xx   |  |  |  |  |  |  |  |  |          |
| 2        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 3        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 4        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 5        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 6        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 7        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MS

Bottom Depth: 3460 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0832 | 0032  |
| Bottom | 0913 |       |
| End    | 0954 |       |

Positional Information

|      |               |
|------|---------------|
| Lat: | 49 ° 12 04 N  |
| Lon: | 133 ° 39 98 W |

▼

|      |               |
|------|---------------|
| Lat: | 49 ° 12 05 N  |
| Lon: | 133 ° 39 92 W |

▼

|      |               |
|------|---------------|
| Lat: | 49 ° 12 05 N  |
| Lon: | 133 ° 39 94 W |

Extra comments:

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P14 Event #: 73 Ship: Tully UTC Date (dd mmm yyyy): 16 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 427      | 5                 | ✓ 5                                                    | x                                  | x   | xx  | xx   |  |  |  |  |  |  |  |  |          |
| 2        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 3        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 4        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 5        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 6        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 7        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                                                        |                                    |     |     |      |  |  |  |  |  |  |  |  |          |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 3317 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1357 | 0557  |
| Bottom | 1432 |       |
| End    | 1510 |       |

Positional Information

Start Lat: 49° 7' 30" N  
Lon: 132° 40' 03" W

Bottom Lat: 49° 07' 28" N  
Lon: 132° 40' 09" W

End Lat: 49° 7' 27" N  
Lon: 132° 40' 07" W

Extra comments:

## Sampling Log

**Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC**

Cruise ID: 2017-01 Station: P13 Event #: 741 Ship: Tully UTC Date (dd mmm yyyy): 16 FEB 2017

[illegible]

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MB

Bottom Depth: 3014 m

Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1920 | 1120  |
| Bottom | 1955 |       |
| End    | 2035 |       |

**Positional Information**

|      |     |   |    |    |
|------|-----|---|----|----|
| Lat: | 49  | ° | 2  | 49 |
| Lon: | 131 | ° | 39 | 97 |

|        |                 |
|--------|-----------------|
| Bottom | Lat: 49° 2.49   |
|        | Lon: 131° 39.96 |

|     |      |       |       |
|-----|------|-------|-------|
| End | Lat: | 49 °  | 2.49  |
|     | Lon: | 131 ° | 39.96 |

**Extra comments:**

- extra (space) riskin  
tripped

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: P12

Event #: 75

Ship: Tully

UTC Date (dd mmm yyyy): 17 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |        |     |      |    |      |   |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|--------|-----|------|----|------|---|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP | Nut-Fr | Chl | HPLC | DA | UVic |   |  |  |          |
| 1        | 1        | 429      | 300               | ✓ 300              | x                                  |      |        | x   |      |    |      |   |  |  |          |
| 2        | 2        | 430      | 250               | ✓ 250              |                                    |      |        | x   |      |    | x    |   |  |  |          |
| 3        | 3        | 431      | 200               | ✓ 200              | x                                  | x    |        | x   |      |    |      |   |  |  |          |
| 4        | 4        | 432      | 150               | ✓ 150              | x                                  | x    |        | x   |      |    | x    |   |  |  |          |
| 5        | 5        | 433      | 100               | ✓ 100              | x                                  |      |        | x   | x    |    |      |   |  |  |          |
| 6        | 6        | 434      | 75                | ✓ 75               | x                                  |      |        | x   | x    |    |      |   |  |  |          |
| 7        | 7        | 435      | 60                | ✓ 60               |                                    |      |        | x   | xx   | xx |      |   |  |  | Fluo     |
| 8        | 8        | 436      | 50                | ✓ 50               | x                                  |      |        | x   | xx   | xx |      | x |  |  | Fluo     |
| 9        | 9        | 437      | 40                | ✓ 40               | x                                  |      |        | x   | xx   | xx |      |   |  |  | Fluo     |
| 10       | 10       | 438      | 30                | ✓ 30               | x                                  | x    |        | x   | xx   | xx |      |   |  |  | Fluo     |
| 11       | 11       | 439      | 25                | ✓ 25               | x                                  |      |        | x   | x    |    |      |   |  |  |          |
| 12       | 12       | 440      | 20                | ✓ 20               | xx                                 | xx   |        | x   | x    |    | x    |   |  |  |          |
| 13       | 13       | 441      | 15                | ✓ 15               | x                                  |      |        | x   | xx   | xx |      |   |  |  | Fluo     |
| 14       | 14       | 442      | 10                | ✓ 10               | x                                  |      |        | xx  | x    |    | x    |   |  |  |          |
| 15       | 15       | 443      | 5                 | ✓ 5                | x                                  | x    |        | x   | xx   | xx | x    | x |  |  | Fluo     |
| 16       | 16       | 444      | 0                 | ✓ 0                | x                                  | x    |        | x   | x    |    |      |   |  |  |          |
| 17       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 18       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 19       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 20       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 21       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 22       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 23       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |
| 24       |          |          |                   |                    |                                    |      |        |     |      |    |      |   |  |  |          |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): DYFIV                                                                                                                  |

|                     |                                                              |
|---------------------|--------------------------------------------------------------|
| Bottom Depth:       | 3235 m                                                       |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y / <input type="radio"/> N |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0043 | 1643  |
| Bottom | 0051 |       |
| End    | 0114 |       |

|                        |   |
|------------------------|---|
| Positional Information |   |
| Lat: 48° 58.19         | N |
| Lon: 130° 40.00        | W |

Start

|                 |   |
|-----------------|---|
| Lat: 48° 58.19  | N |
| Lon: 130° 40.00 | W |

Bottom

|                 |   |
|-----------------|---|
| Lat: 48° 58.19  | N |
| Lon: 130° 40.00 | W |

End

Extra comments:  
DMS & UVic cast  
Will also have loops for Chl x2

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P12 Event #: 77 Ship: Tully UTC Date (dd mmm yyyy): 17 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |     |     |  |  |          |         | Comments  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|-----|-----|--|--|----------|---------|-----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC | DOC |  |  | SAGs UBC | DNA UBC | Gases UBC |  |  |  |
| 1        | 1        | 445      | Bot-10            | ✓ 3273               | x                                  |     | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 2        | 2        | 446      | 3000              | ✓ 3000               | x                                  | xx  | x     | x     | xx  | xx  |  |  |          |         |           |  |  |  |
| 3        | 3        | 447      | 3000              | ✓                    | x                                  | x   | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 4        | 4        | 448      | 2500              | ✓ 2499               | xx                                 | xx  | xx    | xx    | x   | xx  |  |  |          |         |           |  |  |  |
| 5        | 5        | 449      | 2000              | ✓ 2001               | x                                  | x   | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 6        | 6        | 450      | 1500              | ✓ 1500               | x                                  | xx  | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 7        | 7        | 451      | 1250              | ✓ 1249               | x                                  | x   | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 8        | 8        | 452      | 1000              | ✓ 1000               | x                                  | xx  | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 9        | 9        | 453      | 800               | ✓ 800                | x                                  |     | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 10       | 10       | 454      | 600               | ✓ 601                | xx                                 |     | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 11       | 11       | 455      | 400               | ✓ 400                | x                                  |     | x     | x     | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 12       | 12       | 456      | 300               | ✓ 300                | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 13       | 13       | 457      | 250               | ✓ 250                | x                                  |     | x     |       | x   | xx  |  |  |          |         |           |  |  |  |
| 14       | 14       | 458      | 200               | ✓ 200                | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 15       | 15       | 459      | 175               | ✓ 176                | x                                  |     | x     |       | x   | xx  |  |  |          |         |           |  |  |  |
| 16       | 16       | 460      | 150               | ✓ 149                | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 17       | 17       | 461      | 125               | ✓ 124                | xx                                 |     | x     |       | x   | xx  |  |  |          |         |           |  |  |  |
| 18       | 18       | 462      | 100               | ✓ 100                | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 19       | 19       | 463      | 75                | ✓ 75                 | x                                  |     | xx    |       | x   | xx  |  |  |          |         |           |  |  |  |
| 20       | 20       | 464      | 50                | ✓ 50                 | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 21       | 21       | 465      | 25                | ✓ 25                 | x                                  |     | x     |       | x   | xx  |  |  | x        | x       | xx        |  |  |  |
| 22       | 22       | 466      | 10                | ✓ 10                 | x                                  |     | x     |       | x   | xx  |  |  | x        | x       |           |  |  |  |
| 23       | 23       | 467      | 5                 | ✓ 5                  | xx                                 | x   | x     |       | x   | xx  |  |  |          |         | xx        |  |  |  |
| 24       |          |          |                   |                      |                                    |     |       |       |     |     |  |  |          |         |           |  |  |  |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): MK/07                                                                                                                  |

|                     |                                                                    |
|---------------------|--------------------------------------------------------------------|
| Bottom Depth:       | 3236 m                                                             |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0205 | 1805  |
| Bottom | 0317 |       |
| End    | 0449 |       |

|                        |
|------------------------|
| Positional Information |
| Lat: 48 ° 58.20 N      |
| Lon: 130 ° 40.01 W     |

Start

Bottom

End

|                    |
|--------------------|
| Lat: 48 ° 58.20 N  |
| Lon: 130 ° 40.00 W |

|                    |
|--------------------|
| Lat: 48 ° 58.20 N  |
| Lon: 130 ° 40.00 W |

|                                  |
|----------------------------------|
| Extra comments:                  |
| Deep cast                        |
| Will also have loops for Sal x1, |
| Nut x1, Oxy x2                   |

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P12 Event #: 81 Ship: Tully UTC Date (dd mmm yyyy): 17 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |  |   |  |  |  |  |  |  |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|------------|------------------------------------|--|---|--|--|--|--|--|--|--|--|--|----------|--|--|
|          |          |          | Target            | Confirmed  | UBC                                |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
|          |          |          | Pressure          | ✓ Pressure |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 1        | 1        | 468      | 2000              | ✓          | 2000                               |  | x |  |  |  |  |  |  |  |  |  |          |  |  |
| 2        | 2        | 469      | 2000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 3        | 3        | 470      | 2000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 4        | 4        | 471      | 2000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 5        | 5        | 472      | 1000              | ✓          | 1000                               |  | x |  |  |  |  |  |  |  |  |  |          |  |  |
| 6        | 6        | 473      | 1000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 7        | 7        | 474      | 1000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 8        | 8        | 475      | 1000              | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 9        | 9        | 476      | 500               | ✓          | 501                                |  | x |  |  |  |  |  |  |  |  |  |          |  |  |
| 10       | 10       | 477      | 500               | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 11       | 11       | 478      | 500               | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 12       | 12       | 479      | 500               | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 13       | 13       | 480      | 10                | ✓          | 10                                 |  | x |  |  |  |  |  |  |  |  |  |          |  |  |
| 14       | 14       | 481      | 10                | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 15       | 15       | 482      | 10                | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 16       | 16       | 483      | 10                | ✓          | ↓                                  |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 17       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 18       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 19       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 20       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 21       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 22       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 23       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |
| 24       |          |          |                   |            |                                    |  |   |  |  |  |  |  |  |  |  |  |          |  |  |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MS

Bottom Depth: 3234 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0821 | 0021  |
| Bottom | 0855 |       |
| End    | 0931 |       |

Positional Information

|        |                    |
|--------|--------------------|
| Start  | Lat: 48 ° 58 17 N  |
|        | Lon: 130 ° 39 93 W |
| Bottom | Lat: 48 ° 58 17 N  |
|        | Lon: 130 ° 39 92 W |
| End    | Lat: 48 ° 58 17 N  |
|        | Lon: 130 ° 39 93 W |

Extra comments:  
Jade's cast



# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P11 Event #: 82 Ship: Tully UTC Date (dd mmm yyyy): 17 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |  |
| 1        | 1        | 484      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |          |  |  |  |
| 2        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 3        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |          |  |  |  |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 2756 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 11 37 | 08 37 |
| Bottom | 12 20 |       |
| End    | 13 01 |       |

Positional Information

|        |                    |
|--------|--------------------|
| Start  | Lat: 48 ° 56 06 N  |
|        | Lon: 130 ° 10 06 W |
| Bottom | Lat: 48 ° 56 04 N  |
|        | Lon: 130 ° 10 11 W |
| End    | Lat: 48 ° 56 04 N  |
|        | Lon: 130 ° 10 22 W |

Extra comments:

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P10 Event #: 83 Ship: Tully UTC Date (dd mmm yyyy): 17 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                         | Samples Taken / Sampler's Initials |  |    |   |  |  |  |  |  |  |  |  |  | Comments |  |
|----------|----------|----------|-------------------|-------------------------|------------------------------------|--|----|---|--|--|--|--|--|--|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed<br>✓ Pressure |                                    |  | Cs |   |  |  |  |  |  |  |  |  |  |          |  |
| 1        | 1        | 485      | 200               | ✓                       | 200                                |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 2        | 2        | 486      | 200               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 3        | 3        | 487      | 200               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 4        | 4        | 488      | 200               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 5        | 5        | 489      | 200               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 6        | 6        | 490      | 200               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 7        | 7        | 491      | 150               | ✓                       | 150                                |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 8        | 8        | 492      | 150               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 9        | 9        | 493      | 150               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 10       | 10       | 494      | 150               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 11       | 11       | 495      | 150               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 12       | 12       | 496      | 150               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 13       | 13       | 497      | 100               | ✓                       | 100                                |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 14       | 14       | 498      | 100               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 15       | 15       | 499      | 100               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 16       | 16       | 500      | 100               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 17       | 17       | 501      | 100               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 18       | 18       | 502      | 100               | ✓                       |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 19       | 19       | 503      | 50                |                         | 50                                 |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 20       | 20       | 504      | 50                |                         |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 21       | 21       | 505      | 50                |                         |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 22       | 22       | 506      | 50                |                         |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 23       | 23       | 507      | 50                |                         |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |
| 24       | 24       | 508      | 50                |                         |                                    |  |    | x |  |  |  |  |  |  |  |  |  |          |  |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MB

Bottom Depth: 2639 m  
 Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1508 | 0708  |
| Bottom | 1511 |       |
| End    | 1519 |       |

Positional Information  
 Start  
 Lat: 48 ° 53 58 N  
 Lon: 129 ° 40 02 W

Bottom  
 Lat: 48 ° 53 59 N  
 Lon: 129 ° 40 07 W

End  
 Lat: 48 ° 53 59 N  
 Lon: 129 ° 40 09 W

Extra comments:  
 Cesium 200m cast

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: P10

Event #: 84

Ship: Tully

UTC Date (dd mmm yyyy): 17 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |    |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|----|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  | Cs |  |  |  |  |          |
| 1        | 1        | 509      | 500               | ✓ 500              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 2        | 2        | 510      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 3        | 3        | 511      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 4        | 4        | 512      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 5        | 5        | 513      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 6        | 6        | 514      | 500               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 7        | 7        | 515      | 400               | ✓ 400              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 8        | 8        | 516      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 9        | 9        | 517      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 10       | 10       | 518      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 11       | 11       | 519      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 12       | 12       | 520      | 400               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 13       | 13       | 521      | 300               | ✓ 300              |                                    |     |     |      |  | x  |  |  |  |  |          |
| 14       | 14       | 522      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 15       | 15       | 523      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 16       | 16       | 524      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 17       | 17       | 525      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 18       | 18       | 526      | 300               | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 19       | 19       | 527      | 5                 | ✓ 5                |                                    |     |     |      |  | x  |  |  |  |  |          |
| 20       | 20       | 528      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 21       | 21       | 529      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 22       | 22       | 530      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 23       | 23       | 531      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
| 24       | 24       | 532      | 5                 | ✓                  |                                    |     |     |      |  | x  |  |  |  |  |          |
|          |          |          |                   |                    | x                                  | x   | x x | x x  |  | x  |  |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MB

Bottom Depth: 2640 m  
Transmisso Cleaned: Y N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1537 | 0837  |
| Bottom | 1612 |       |
| End    | 1653 |       |

Positional Information

|       |                    |
|-------|--------------------|
| Start | Lat: 48 ° 53 64 N  |
|       | Lon: 129 ° 40 06 W |

Bottom

|                    |
|--------------------|
| Lat: 48 ° 53 61 N  |
| Lon: 129 ° 40 10 W |

End

|                    |
|--------------------|
| Lat: 48 ° 53 60 N  |
| Lon: 129 ° 40 20 W |

Extra comments:

Cesium + IOS cast

Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P9 Event #: 85 Ship: Tully UTC Date (dd mmm yyyy): 17 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|----------|--|--|
|          |          |          | Target            | Confirmed |          | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |          |  |  |
|          |          |          | Pressure          | ✓         | Pressure |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 1        | 1        | 533      | 5                 | ✓         | 5        | x                                  | x   | x x | x x  |  |  |  |  |  |  |  |  |          |  |  |
| 2        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 3        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 4        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 5        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 6        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 7        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 8        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 9        |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 10       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 11       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 12       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 13       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 14       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 15       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 16       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 17       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 18       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 19       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 20       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 21       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 22       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 23       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |
| 24       |          |          |                   |           |          |                                    |     |     |      |  |  |  |  |  |  |  |  |          |  |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MB

Bottom Depth: 2350 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1858 | 1058  |
| Bottom | 1938 |       |
| End    | 2021 |       |

Positional Information  
Start  
Lat: 48 ° 51 39 N  
Lon: 129 ° 10 01 W

Bottom  
Lat: 48 ° 51 36 N  
Lon: 129 ° 10 09 W

End  
Lat: 48 ° 51 39 N  
Lon: 129 ° 10 08 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P8

Event #:

90

Ship:

Tully

UTC Date (dd mmm yyyy):

18 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |        |       |     |      |     |    |           |      | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--------|-------|-----|------|-----|----|-----------|------|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut Fr | Nut C | Chl | HPLC | DOC | DA | UBC gases | UVic |          |  |  |  |
| 1        | 1        | 534      | 2000              | ✓ 2000               | x                                  | xx  | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 2        | 2        | 535      | 1500              | ✓ 1500               | x                                  | x   | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 3        | 3        | 536      | 1250              | ✓ 1250               | x                                  | x   | xx     | xx    |     |      | xx  |    | xx        |      |          |  |  |  |
| 4        | 4        | 537      | 1000              | ✓ 1001               | xx                                 | xx  | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 5        | 5        | 538      | 800               | ✓ 801                | x                                  | x   | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 6        | 6        | 539      | 600               | ✓ 600                | x                                  |     | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 7        | 7        | 540      | 400               | ✓ 400                | x                                  |     | x      | x     |     |      | xx  |    | xx        |      |          |  |  |  |
| 8        | 8        | 541      | 300               | ✓ 301                | xx                                 |     | x      |       |     |      | xx  |    | xx        |      |          |  |  |  |
| 9        | 9        | 542      | 250               | ✓ 250                | x                                  |     | x      |       |     |      | xx  |    |           | x    |          |  |  |  |
| 10       | 10       | 543      | 200               | ✓ 200                | x                                  |     | x      |       |     |      | xx  |    | xx        |      |          |  |  |  |
| 11       | 11       | 544      | 175               | ✓ 175                | x                                  |     | x      |       |     |      | xx  |    |           |      |          |  |  |  |
| 12       | 12       | 545      | 150               | ✓ 150                | x                                  |     | x      |       |     |      | xx  |    | xx        | x    |          |  |  |  |
| 13       | 13       | 546      | 100               | ✓ 101                | xx                                 |     | x      |       | x   |      | xx  |    | xx        |      |          |  |  |  |
| 14       | 14       | 547      | 75                | ✓ 75                 | x                                  |     | x      |       | x   |      | xx  |    |           |      |          |  |  |  |
| 15       | 15       | 548      | 60                | ✓ 61                 | x                                  |     | xx     |       | xx  | xx   | xx  |    |           |      |          |  |  |  |
| 16       | 16       | 549      | 50                | ✓ 51                 | x                                  |     | x      |       | xx  | xx   | xx  |    | xx        | x    |          |  |  |  |
| 17       | 17       | 550      | 40                | ✓ 41                 | x                                  |     | x      |       | xx  | xx   | xx  |    |           |      |          |  |  |  |
| 18       | 18       | 551      | 30                | ✓ 30                 | x                                  |     | x      |       | xx  | xx   | xx  |    |           |      |          |  |  |  |
| 19       | 19       | 552      | 25                | ✓ 25                 | x                                  |     | x      |       | x   |      | xx  |    | xx        |      |          |  |  |  |
| 20       | 20       | 553      | 20                | ✓ 20                 | x                                  |     | x      |       | x   |      | xx  |    |           | x    |          |  |  |  |
| 21       | 21       | 554      | 15                | ✓ 14                 | x                                  |     | x      |       | xx  | xx   | xx  |    |           |      |          |  |  |  |
| 22       | 22       | 555      | 10                | ✓ 9                  | x                                  |     | x      |       | x   |      | xx  |    |           | x    |          |  |  |  |
| 23       | 23       | 556      | 5                 | ✓ 5                  | xx                                 | x   | x      |       |     |      | xx  |    | xx        |      |          |  |  |  |
| 24       | 24       | 557      | 5                 | ✓ 5                  |                                    |     | x      |       | xx  | xx   |     | x  |           | x    |          |  |  |  |

Profile type:

ROS TRM X-Niskin other?

Watchkeeper(s):

DY/TV

Bottom Depth: 2517 m

Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0111 | 1711  |
| Bottom | 0150 |       |
| End    | 0254 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 49.03  | N |
| Lon: | 128° 40.20 | W |

|      |            |   |
|------|------------|---|
| Lat: | 48° 49.10  | N |
| Lon: | 128° 40.20 | W |

|      |            |   |
|------|------------|---|
| Lat: | 48° 49.02  | N |
| Lon: | 128° 40.29 | W |

Extra comments:

Will also have loops for Sal x1,  
Nut x1, Chl x2, Oxy x2.

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P7

Event #:

92

Ship:

Tully

UTC Date (dd mmm yyyy):

18 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |  |  |  | Comments |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|--|--|--|----------|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |     |  |  |  |          |  |  |  |  |  |  |
| 1        | 1        | 558      | 5                 | ✓                  | 5                                  | x   | x   | x x  | x x |  |  |  |          |  |  |  |  |  |  |
| 2        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 3        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |     |  |  |  |          |  |  |  |  |  |  |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s):                                                                                                                        |
| DT/TV                                                                                                                                  |

|                     |                                       |
|---------------------|---------------------------------------|
| Bottom Depth:       | 2502m                                 |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0509 | 2109  |
| Bottom | 0549 |       |
| End    | 0630 |       |

|                        |
|------------------------|
| Positional Information |
| Lat: 48 ° 46.68 N      |
| Lon: 128 ° 9.91 W      |

Start

Bottom

End

|                   |
|-------------------|
| Lat: 48 ° 46.67 N |
| Lon: 128 ° 9.90 W |

|                   |
|-------------------|
| Lat: 48 ° 46.66 N |
| Lon: 128 ° 9.95 W |

|                 |
|-----------------|
| Extra comments: |
|-----------------|



Water Properties Group

Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P6 Event #: 93 Ship: Tully UTC Date (dd mmm yyyy): 18 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |
| 1        | 1        | 559      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |  |  |          |
| 2        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 3        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 4        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 5        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 6        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 7        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 8        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 9        |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 10       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 11       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 12       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |     |      |  |  |  |  |  |  |          |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MB

Bottom Depth: 2541 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0825 | 0025  |
| Bottom | 0908 |       |
| End    | 0949 |       |

Positional Information  
Start  
Lat: 48 ° 41 64 N  
Lon: 127 ° 39 96 W

Bottom  
Lat: 48 ° 44 06 N  
Lon: 127 ° 39 95 W

End  
Lat: 48 ° 44 64 N  
Lon: 127 ° 39 96 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P5 Event #: 95 Ship: Tully UTC Date (dd mmm yyyy): 18 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |          |
| 1        | 1        | 560      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |          |
| 2        |          |          |                   |                    |                                    |     |     |      |          |
| 3        |          |          |                   |                    |                                    |     |     |      |          |
| 4        |          |          |                   |                    |                                    |     |     |      |          |
| 5        |          |          |                   |                    |                                    |     |     |      |          |
| 6        |          |          |                   |                    |                                    |     |     |      |          |
| 7        |          |          |                   |                    |                                    |     |     |      |          |
| 8        |          |          |                   |                    |                                    |     |     |      |          |
| 9        |          |          |                   |                    |                                    |     |     |      |          |
| 10       |          |          |                   |                    |                                    |     |     |      |          |
| 11       |          |          |                   |                    |                                    |     |     |      |          |
| 12       |          |          |                   |                    |                                    |     |     |      |          |
| 13       |          |          |                   |                    |                                    |     |     |      |          |
| 14       |          |          |                   |                    |                                    |     |     |      |          |
| 15       |          |          |                   |                    |                                    |     |     |      |          |
| 16       |          |          |                   |                    |                                    |     |     |      |          |
| 17       |          |          |                   |                    |                                    |     |     |      |          |
| 18       |          |          |                   |                    |                                    |     |     |      |          |
| 19       |          |          |                   |                    |                                    |     |     |      |          |
| 20       |          |          |                   |                    |                                    |     |     |      |          |
| 21       |          |          |                   |                    |                                    |     |     |      |          |
| 22       |          |          |                   |                    |                                    |     |     |      |          |
| 23       |          |          |                   |                    |                                    |     |     |      |          |
| 24       |          |          |                   |                    |                                    |     |     |      |          |

|                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                              |
| <input checked="" type="radio"/> ROS <input type="radio"/> TRM <input type="radio"/> X-Niskin <input type="radio"/> other? |
| Watchkeeper(s): MB                                                                                                         |

|                     |                                                            |   |
|---------------------|------------------------------------------------------------|---|
| Bottom Depth:       | 2086                                                       | m |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y <input type="radio"/> N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1142 | 0342  |
| Bottom | 1215 |       |
| End    | 1247 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 41 48 N      |
| Lon: 127 ° 10 04 W     |

|                   |
|-------------------|
| Bottom            |
| Lat: 48 ° 41 52 N |
| Lon: 127 ° 9 93 W |

|                   |
|-------------------|
| End               |
| Lat: 48 ° 41 46 N |
| Lon: 127 ° 9 08 W |

|                 |
|-----------------|
| Extra comments: |
|-----------------|

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: P4

Event #: 99

Ship: Tully

UTC Date (dd mmm yyyy): 18 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |       |       |     |     |      |       |     |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-------|-------|-----|-----|------|-------|-----|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Nut-F | Nut-C | Sal | CHL | HPLC | gases | DMJ |  |  |          |  |  |  |
| 1        | 1        | 561      | Bot-10            | ✓ 1312               | x                                  | x     | x     |     |     |      | x x   |     |  |  |          |  |  |  |
| 2        | 2        | 562      | 1250              | ✓ 1250               | x                                  | x     | x     | x x |     |      | x x   |     |  |  |          |  |  |  |
| 3        | 3        | 563      | 1000              | ✓ 1000               | x x                                | x     | x     | x   |     |      | x x   |     |  |  |          |  |  |  |
| 4        | 4        | 564      | 800               | ✓ 800                | x                                  | x     | x     | x   |     |      | x x   |     |  |  |          |  |  |  |
| 5        | 5        | 565      | 600               | ✓ 600                | x                                  | x x   | x x   |     |     |      | x x   |     |  |  |          |  |  |  |
| 6        | 6        | 566      | 400               | ✓ 400                | x                                  | x     | x     |     |     |      | x x   |     |  |  |          |  |  |  |
| 7        | 7        | 567      | 300               | ✓ 300                | x                                  | x     |       |     |     |      | x x   |     |  |  |          |  |  |  |
| 8        | 8        | 568      | 200               | ✓ 200                | x                                  | x     |       |     |     |      | x x   |     |  |  |          |  |  |  |
| 9        | 9        | 569      | 150               | ✓ 150                | x x                                | x     |       |     |     |      | x x   |     |  |  |          |  |  |  |
| 10       | 10       | 570      | 100               | ✓ 100                | x                                  | x     |       |     |     |      | x x   |     |  |  |          |  |  |  |
| 11       | 11       | 571      | 50                | ✓ 50                 | x                                  | x     |       |     | x x |      | x x   | x   |  |  |          |  |  |  |
| 12       | 12       | 572      | 25                | ✓ 25                 | x                                  | x     |       |     | x   |      | x x   |     |  |  |          |  |  |  |
| 13       | 13       | 573      | 5                 | ✓ 5                  | x                                  | x     |       |     | x x | x x  | x x   |     |  |  |          |  |  |  |
| 14       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 15       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 16       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 17       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 18       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 19       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 20       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 21       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 22       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 23       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |
| 24       |          |          |                   |                      |                                    |       |       |     |     |      |       |     |  |  |          |  |  |  |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MB

Bottom Depth: 1305 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1854 | 1054  |
| Bottom | 1917 |       |
| End    | 1953 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 03  | N |
| Lon: | 126 ° 39 91 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 03  | N |
| Lon: | 126 ° 39 95 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 04  | N |
| Lon: | 126 ° 40 13 | W |

Extra comments:

P4 - return;

plus 2 Oxy loops

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P3 Event #: 100 Ship: Tully UTC Date (dd mmm yyyy): 18 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 1        | (        | 574      | 5                 | ✓ 6                  | x                                  | x   | xx  | xx   |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                      |                                    |     |     |      |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): DY/TV

Bottom Depth: 808 m  
 Transmisso Cleaned: Y / ☒ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 2128 | 1328  |
| Bottom | 2147 |       |
| End    | 2206 |       |

Positional Information

|       |                    |
|-------|--------------------|
| Start | Lat: 48 ° 37.49 N  |
|       | Lon: 126 ° 20.00 W |

Bottom

|  |                    |
|--|--------------------|
|  | Lat: 48 ° 37.61 N  |
|  | Lon: 126 ° 20.02 W |

End

|  |                    |
|--|--------------------|
|  | Lat: 48 ° 37.66 N  |
|  | Lon: 126 ° 20.06 W |

Extra comments:  
 P3 - return

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P2

Event #:

101

Ship:

Tully

UTC Date (dd mmm yyyy):

18 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |  |        |     |      |      |      |    |  | Comments |  |      |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|--|--------|-----|------|------|------|----|--|----------|--|------|--|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP |  | Nut-Fr | Chl | HPLC | UVic | Bugs | DA |  |          |  |      |  |
| 1        | 1        | 575      | 100               | ✓ 100              |                                    |      |  |        |     |      |      | x    |    |  |          |  |      |  |
| 2        | 2        | 576      | 100               | ✓                  | x                                  | x    |  | x      | x   |      | x    |      |    |  |          |  |      |  |
| 3        | 3        | 577      | 75                | ✓ 75               | x                                  |      |  | x      | x   |      | x    |      |    |  |          |  |      |  |
| 4        | 4        | 578      | 50                | ✓ 50               | x                                  |      |  | x      | x   |      | x    |      |    |  |          |  |      |  |
| 5        | 5        | 579      | 50                | ✓ 50               |                                    |      |  |        |     |      |      | x    |    |  |          |  |      |  |
| 6        | 6        | 580      | 40                | ✓ 40               | x                                  |      |  | x      | x   |      |      |      |    |  |          |  |      |  |
| 7        | 7        | 581      | 30                | ✓ 30               | x                                  | x    |  | x      | xx  | xx   |      |      |    |  |          |  | Fluo |  |
| 8        | 8        | 582      | 25                | ✓ 25               | x                                  |      |  | x      | xx  | xx   |      |      |    |  |          |  | Fluo |  |
| 9        | 9        | 583      | 20                | ✓ 20               | xx                                 | xx   |  | x      | xx  | xx   | x    |      |    |  |          |  | Fluo |  |
| 10       | 10       | 584      | 15                | ✓ 15               | x                                  |      |  | xx     | xx  | xx   |      |      |    |  |          |  | Fluo |  |
| 11       | 11       | 585      | 10                | ✓ 10               | x                                  |      |  | x      | xx  | xx   | x    |      |    |  |          |  | Fluo |  |
| 12       | 12       | 586      | 5                 | ✓ 5                | x                                  | x    |  | x      |     |      |      |      | x  |  |          |  |      |  |
| 13       | 13       | 587      | 5                 | ✓                  |                                    |      |  |        | xx  | xx   | x    |      |    |  |          |  | Fluo |  |
| 14       | 14       | 588      | 5                 | ✓                  |                                    |      |  |        |     |      |      | x    |    |  |          |  |      |  |
| 15       | 15       | 589      | 0                 | ✓ 2                | x                                  | x    |  | x      | x   |      |      |      |    |  |          |  |      |  |
| 16       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 17       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 18       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 19       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 20       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 21       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 22       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 23       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |
| 24       |          |          |                   |                    |                                    |      |  |        |     |      |      |      |    |  |          |  |      |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TV

Bottom Depth: 117 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2338 | 1538  |
| Bottom | 2342 |       |
| End    | 2357 |       |

## Positional Information

Start  
Lat: 48° 35.99 N  
Lon: 126° 0.01 W

Bottom  
Lat: 48° 35.99 N  
Lon: 125° 59.99 W

End  
Lat: 48° 35.98 N  
Lon: 125° 59.90 W

## Extra comments:

DMS cast

Will also have loops for Chl x2

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: P2 Event #: 105 Ship: Tully UTC Date (dd mmm yyyy): 19 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |       |       |     |     |       |    |  |  |  |  |  |  |  | Comments |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-------|-------|-----|-----|-------|----|--|--|--|--|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Nut-F | Nut-C | Sal | DIC | DOC   |    |  |  |  |  |  |  |  |          |  |
|          |          |          |                   | ✓                  |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
|          |          |          |                   |                    |                                    | DY    | AN    |     | DY  | P+LWB | AN |  |  |  |  |  |  |  |          |  |
| 1        | 1        | 590      | Bot-10            | ✓                  | 106                                | x     | x     |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 2        | 2        | 591      | 100               | ✓                  | 100                                | xx    | x     |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 3        | 3        | 592      | 75                | ✓                  | 75                                 | x     | x     |     |     | xx    | xx |  |  |  |  |  |  |  |          |  |
| 4        | 4        | 593      | 75                | ✓                  | 75                                 | x     | x     |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 5        | 5        | 594      | 50                | ✓                  | 50                                 | x     | x     |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 6        | 6        | 595      | 25                | ✓                  | 25                                 | x     | xx    |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 7        | 7        | 596      | 10                | ✓                  | 10                                 | x     | x     |     |     | x     | xx |  |  |  |  |  |  |  |          |  |
| 8        | 8        | 597      | 5                 | ✓                  | 5                                  | xx    | x     |     | x   | x     | xx |  |  |  |  |  |  |  |          |  |
| 9        |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 10       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 11       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 12       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 13       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 14       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 15       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 16       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 17       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 18       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 19       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 20       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 21       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 22       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 23       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |
| 24       |          |          |                   |                    |                                    |       |       |     |     |       |    |  |  |  |  |  |  |  |          |  |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): DY/TJ

Bottom Depth: 116 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0054 | 1654  |
| Bottom | 2056 |       |
| End    | 0106 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 35.97  | N |
| Lon: | 125° 59.86 | W |

Start

Bottom

End

|      |            |   |
|------|------------|---|
| Lat: | 48° 35.96  | N |
| Lon: | 125° 59.87 | W |

|      |            |   |
|------|------------|---|
| Lat: | 48° 35.93  | N |
| Lon: | 125° 59.87 | W |

Extra comments:  
Deep cast  
Will also have loops for Oxy x2



## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

P1

Event #:

106

Ship:

Tully

UTC Date (dd mmm yyyy):

19 2 17

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |     |     |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|-----|-----|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | DIC | Oxy | DOC |  |  |  |          |
| 1        | 1        | 598      | Bot-10            | ✓                  | 101                                | x   |     |      | xx  | x   | xx  |  |  |  |          |
| 2        | 2        | 599      | 30                | ✓                  | 30                                 | x   |     |      | x   | x   | xx  |  |  |  |          |
| 3        | 3        | 600      | 5                 | ✓                  | 5                                  |     | x   |      | x   | xx  | xx  |  |  |  |          |
| 4        | 4        | 601      | 5                 | ✓                  | 5                                  | x   |     | xx   | xx  |     |     |  |  |  |          |
| 5        |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 6        |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 7        |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 8        |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 9        |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 10       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 11       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 12       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |     |      |     |     |     |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TV

Bottom Depth: 113 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0313 | 1913  |
| Bottom | 0316 |       |
| End    | 0322 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 34.56  | N |
| Lon: | 125° 30.01 | W |

Start

Bottom

End

Lat: 48° 34.57 N  
Lon: 125° 30.01 W

Lat: 48° 34.58 N  
Lon: 125° 30.00 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 102 Event #: 109 Ship: Tully UTC Date (dd mmm yyyy): 19 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |     |      |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-----|------|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut-F | Chl | HPLC |  |  |  |  |  |          |
| 1        | 1        | 602      | Bot-5             | ✓ 252                | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 2        | 2        | 603      | 200               | ✓ 201                | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 3        | 3        | 604      | 175               | ✓ 176                | x                                  |     | xx    |     |      |  |  |  |  |  |          |
| 4        | 4        | 605      | 150               | ✓ 151                | xx                                 |     | x     |     |      |  |  |  |  |  |          |
| 5        | 5        | 606      | 125               | ✓ 125                | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 6        | 6        | 607      | 100               | ✓ 99                 | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 7        | 7        | 608      | 75                | ✓ 75                 | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 8        | 8        | 609      | 50                | ✓ 50                 | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 9        | 9        | 610      | 40                | ✓ 40                 | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 10       | 10       | 611      | 30                | ✓ 30                 | x                                  |     | x     |     |      |  |  |  |  |  |          |
| 11       | 11       | 612      | 20                | ✓ 20                 | x                                  |     | xx    | xx  |      |  |  |  |  |  |          |
| 12       | 12       | 613      | 10                | ✓ 10                 | xx                                 |     | x     | xx  |      |  |  |  |  |  |          |
| 13       | 13       | 614      | 5                 | ✓ 5                  | x                                  | x   | x     |     |      |  |  |  |  |  |          |
| 14       | 14       | 615      | 0                 | ✓ 1                  | x                                  |     | x     | xx  | xx   |  |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |     |       |     |      |  |  |  |  |  |          |

|                         |
|-------------------------|
| Profile type:           |
| ROS TRM X-Niskin other? |
| Watchkeeper(s): DY/TJ   |

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 256     | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0709 | 2309  |
| Bottom | 0715 |       |
| End    | 0739 |       |

|                        |                  |   |
|------------------------|------------------|---|
| Positional Information |                  |   |
| Start                  | Lat: 48 ° 30.00  | N |
|                        | Lon: 124 ° 44.14 | W |

Start

Bottom

End

|        |                  |   |
|--------|------------------|---|
| Bottom | Lat: 48 ° 30.00  | N |
|        | Lon: 124 ° 44.09 | W |

|     |                  |   |
|-----|------------------|---|
| End | Lat: 48 ° 29.92  | N |
|     | Lon: 124 ° 44.14 | W |

|                 |
|-----------------|
| Extra comments: |
|-----------------|

# Water Properties Group

# Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: JF2 Event #: 111 Ship: Tully UTC Date (dd mmm yyyy): 19 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |      |     |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|------|-----|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | HPLC | DIC |  |  |  |  |          |
| 1        | 1        | 616      | Bot-5             | ✓ 182              | x                                  |     | x x   |     |      | x   |  |  |  |  |          |
| 2        | 2        | 617      | 150               | ✓ 150              | x                                  |     | x     |     |      | x   |  |  |  |  |          |
| 3        | 3        | 618      | 125               | ✓ 125              | x                                  |     | x     |     |      | x x |  |  |  |  |          |
| 4        | 4        | 619      | 100               | ✓ 100              | x x                                |     | x     |     |      | x   |  |  |  |  |          |
| 5        | 5        | 620      | 75                | ✓ 75               | x                                  |     | x     |     |      | x   |  |  |  |  |          |
| 6        | 6        | 621      | 50                | ✓ 50               | x                                  |     | x x   |     |      | x   |  |  |  |  |          |
| 7        | 7        | 622      | 40                | ✓ 40               | x                                  |     | x     |     |      | x x |  |  |  |  |          |
| 8        | 8        | 623      | 30                | ✓ 30               | x                                  |     | x     |     |      | x   |  |  |  |  |          |
| 9        | 9        | 624      | 20                | ✓ 20               | x                                  |     | x     | x x |      | x   |  |  |  |  |          |
| 10       | 10       | 625      | 10                | ✓ 10               | x x                                |     | x     | x x |      | x   |  |  |  |  |          |
| 11       | 11       | 626      | 5                 | ✓ 5                | x                                  | x   | x     |     |      | x   |  |  |  |  |          |
| 12       | 12       | 627      | 0                 | ✓ 0.7              | x                                  |     | x     | x x | x x  | x   |  |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |      |     |  |  |  |  |          |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MS/JS

Bottom Depth: 187 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1133 | 0333  |
| Bottom | 1136 |       |
| End    | 1150 |       |

Positional Information

Start Lat: 48 ° 17 90 N  
Lon: 124 ° 0 05 W

Bottom Lat: 48 ° 17 89 N  
Lon: 124 ° 0 07 W

End Lat: 48 ° 17 87 N  
Lon: 124 ° 0 18 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01

Station: Haro 59

Event #: 112

Ship: Tully

UTC Date (dd mmm yyyy): 19 FEB 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                         | Samples Taken / Sampler's Initials |     |       |     |     |      |       |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|-------------------------|------------------------------------|-----|-------|-----|-----|------|-------|--|--|--|----------|--|--|
|          |          |          | Target Pressure   | Confirmed<br>✓ Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC | Phyto |  |  |  |          |  |  |
| 1        | 1        | 628      | Bot-5             | ✓ 225                   | x                                  |     | x     |     | x   |      |       |  |  |  |          |  |  |
| 2        | 2        | 629      | 200               | ✓ 200                   | x                                  |     | x     |     | x x |      |       |  |  |  |          |  |  |
| 3        | 3        | 630      | 175               | ✓ 175                   | x                                  |     | x     |     |     |      |       |  |  |  |          |  |  |
| 4        | 4        | 631      | 150               | ✓ 150                   | x x                                |     | x x   |     | x   |      |       |  |  |  |          |  |  |
| 5        | 5        | 632      | 125               | ✓ 125                   | x                                  |     | x     |     |     |      |       |  |  |  |          |  |  |
| 6        | 6        | 633      | 100               | ✓ 100                   | x                                  |     | x     |     | x   |      |       |  |  |  |          |  |  |
| 7        | 7        | 634      | 75                | ✓ 75                    | x                                  |     | x     |     | x   |      |       |  |  |  |          |  |  |
| 8        | 8        | 635      | 50                | ✓ 50                    | x                                  |     | x     |     | x   |      |       |  |  |  |          |  |  |
| 9        | 9        | 636      | 40                | ✓ 40                    | x                                  |     | x x   |     |     |      |       |  |  |  |          |  |  |
| 10       | 10       | 637      | 30                | ✓ 30                    | x                                  |     | x     |     | x   |      |       |  |  |  |          |  |  |
| 11       | 11       | 638      | 20                | ✓ 20                    | x                                  |     | x     | x x | x   |      |       |  |  |  |          |  |  |
| 12       | 12       | 639      | 10                | ✓ 10                    | x                                  |     | x     | x x | x   |      |       |  |  |  |          |  |  |
| 13       | 13       | 640      | 5                 | ✓ 5                     | x                                  | x   | x     |     | x x |      |       |  |  |  |          |  |  |
| 14       | 14       | 641      | 0                 | ✓ 0                     | x x                                |     | x     | x x | x   | x x  | x     |  |  |  |          |  |  |
| 15       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 16       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 17       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 18       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 19       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 20       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 21       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 22       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 23       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |
| 24       |          |          |                   |                         |                                    |     |       |     |     |      |       |  |  |  |          |  |  |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MB

Bottom Depth: 235 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1647 | 0847  |
| Bottom | 1651 |       |
| End    | 1706 |       |

Positional Information

|      |         |      |
|------|---------|------|
| Lat: | 48° 36  | 84 N |
| Lon: | 123° 14 | 81 W |

Start

Bottom

End

|      |         |      |
|------|---------|------|
| Lat: | 48° 36  | 84 N |
| Lon: | 123° 14 | 81 W |

|      |         |      |
|------|---------|------|
| Lat: | 48° 36  | 84 N |
| Lon: | 123° 14 | 94 W |

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 56 Event #: 114 Ship: Tully UTC Date (dd mmm yyyy): 19 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |     |     |      |       |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-----|-----|------|-------|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC | Phyto |  |  |  |          |
| 1        | 1        | 642      | Bot-5             | ✓ 220                | x                                  |     | x x   |     |     |      |       |  |  |  |          |
| 2        | 2        | 643      | 200               | ✓ 200                | x x                                |     | x     |     |     |      |       |  |  |  |          |
| 3        | 3        | 644      | 175               | ✓ 175                | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 4        | 4        | 645      | 150               | ✓ 150                | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 5        | 5        | 646      | 125               | ✓ 125                | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 6        | 6        | 647      | 100               | ✓ 100                | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 7        | 7        | 648      | 75                | ✓ 75                 | x                                  |     | x x   |     |     |      |       |  |  |  |          |
| 8        | 8        | 649      | 50                | ✓ 50                 | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 9        | 9        | 650      | 40                | ✓ 40                 | x                                  |     | x     |     |     |      |       |  |  |  |          |
| 10       | 10       | 651      | 30                | ✓ 30                 | x x                                |     | x     |     |     |      |       |  |  |  |          |
| 11       | 11       | 652      | 20                | ✓ 20                 | x                                  |     | x     | x x |     |      |       |  |  |  |          |
| 12       | 12       | 653      | 10                | ✓ 10                 | x                                  |     | x     | x x |     |      |       |  |  |  |          |
| 13       | 13       | 654      | 5                 | ✓ 5                  | x                                  | x   | x     |     |     |      |       |  |  |  |          |
| 14       | 14       | 655      | 0                 | ✓ 1                  | x                                  |     | x     | x x |     | x x  | x     |  |  |  |          |
| 15       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 16       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 17       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 18       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 19       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 20       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 21       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 22       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 23       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |
| 24       |          |          |                   |                      |                                    |     |       |     |     |      |       |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): DY/TVBottom Depth: 223 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2000 | 1200  |
| Bottom | 2006 |       |
| End    | 2024 |       |

Positional Information  
Start  
Lat: 48° 46.24 N  
Lon: 123° 1.77 WBottom  
Lat: 48° 46.24 N  
Lon: 123° 1.78 WEnd  
Lat: 48° 46.25 N  
Lon: 123° 1.81 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 46 Event #: Ship: Tully UTC Date (dd mmm yyyy): 19 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |          |
| 1        | ✓        | 656      | Bot-5             | ✓ 182                | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 2        | 2        | 657      | 150               | ✓ 150                | x                                  |     | x x   |     |     |      |  |  |  |  |          |
| 3        | 3        | 658      | 125               | ✓ 125                | x x                                |     | x     |     |     |      |  |  |  |  |          |
| 4        | 4        | 659      | 100               | ✓ 100                | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 5        | 5        | 660      | 75                | ✓ 74                 | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 6        | 6        | 661      | 50                | ✓ 50                 | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 7        | 7        | 662      | 40                | ✓ 40                 | x x                                |     | x     |     |     |      |  |  |  |  |          |
| 8        | 8        | 663      | 30                | ✓ 30                 | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 9        | 9        | 664      | 20                | ✓ 19                 | x                                  |     | x     | x x |     |      |  |  |  |  |          |
| 10       | 10       | 665      | 10                | ✓ 10                 | x                                  |     | x     | x x |     |      |  |  |  |  |          |
| 11       | 11       | 666      | 5                 | ✓ 5                  | x                                  | x   | x x   |     |     |      |  |  |  |  |          |
| 12       | 12       | 667      | 0                 | ✓ 1                  | x                                  |     | x     | x x |     | x x  |  |  |  |  |          |
| 13       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 14       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |     |       |     |     |      |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TJ

Bottom Depth: 187 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0201 | 1401  |
| Bottom | 2206 |       |
| End    | 2241 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 51.32  | N |
| Lon: | 123 ° 10.55 | W |

Start

Bottom

End

Lat: 48 ° 51.21 N  
Lon: 123 ° 10.52 W

Lat: 48 ° 51.06 N  
Lon: 123 ° 10.38 W

Extra comments:



## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

42

Event #:

Ship:

Tully

UTC Date (dd mmm yyyy):

20 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |     |      |       |   |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|-----|------|-------|---|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC | Phyto |   |  |  |          |
| 1        | 1        | 668      | Bot-5             | ✓                  | 314                                | x   |       | x   | x   |      |       |   |  |  |          |
| 2        | 2        | 669      | 300               | ✓                  | 300                                | x   |       | x   | xx  |      |       |   |  |  |          |
| 3        | 3        | 670      | 250               | ✓                  | 250                                | x   |       | x   | x   |      |       |   |  |  |          |
| 4        | 4        | 671      | 200               | ✓                  | 200                                | x   |       | x   | x   |      |       |   |  |  |          |
| 5        | 5        | 672      | 175               | ✓                  | 175                                | x   |       | xx  |     |      |       |   |  |  |          |
| 6        | 6        | 673      | 150               | ✓                  | 150                                | x   |       | x   | x   |      |       |   |  |  |          |
| 7        | 7        | 674      | 125               | ✓                  | 124                                | xx  |       | x   | x   |      |       |   |  |  |          |
| 8        | 8        | 675      | 100               | ✓                  | 100                                | x   |       | x   | x   |      |       |   |  |  |          |
| 9        | 9        | 676      | 75                | ✓                  | 75                                 | x   |       | x   | xx  |      |       |   |  |  |          |
| 10       | 10       | 677      | 50                | ✓                  | 50                                 | x   |       | x   | x   |      |       |   |  |  |          |
| 11       | 11       | 678      | 40                | ✓                  | 40                                 | x   |       | x   | x   |      |       |   |  |  |          |
| 12       | 12       | 679      | 30                | ✓                  | 30                                 | x   |       | x   | x   |      |       |   |  |  |          |
| 13       | 13       | 680      | 20                | ✓                  | 20                                 | x   |       | xx  | xx  | x    |       |   |  |  |          |
| 14       | 14       | 681      | 10                | ✓                  | 10                                 | xx  |       | x   | xx  | x    |       |   |  |  |          |
| 15       | 15       | 682      | 5                 | ✓                  | 5                                  | x   | x     | x   | x   |      |       |   |  |  |          |
| 16       | 16       | 683      | 0                 | ✓                  | 2                                  | x   |       | x   | xx  | x    | xx    | x |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |     |      |       |   |  |  |          |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): DY/TU                                                                                                                  |

|                     |     |   |
|---------------------|-----|---|
| Bottom Depth:       | 318 | m |
| Transmisso Cleaned: | Y   | N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0040 | 1640  |
| Bottom | 0048 |       |
| End    | 0109 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 1.68 N       |
| Lon: 123 ° 26.26 W     |

Start

|                    |
|--------------------|
| Bottom             |
| Lat: 49 ° 1.72 N   |
| Lon: 123 ° 26.23 W |

Bottom

|                    |
|--------------------|
| End                |
| Lat: 49 ° 1.75 N   |
| Lon: 123 ° 26.12 W |

End

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

39

Event #:

119

Ship:

Tully

UTC Date (dd mmm yyyy):

20 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |          |
| 1        | 1        | 684      | Bot-5             | ✓ 369                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 2        | 2        | 685      | 350               | ✓ 350                                                  | x x                                |     | x     |     |     |      |  |  |  |  |          |
| 3        | 3        | 686      | 300               | ✓ 300                                                  | x                                  |     | x x   |     |     |      |  |  |  |  |          |
| 4        | 4        | 687      | 250               | ✓ 250                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 5        | 5        | 688      | 200               | ✓ 200                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 6        | 6        | 689      | 175               | ✓ 175                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 7        | 7        | 690      | 150               | ✓ 150                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 8        | 8        | 691      | 125               | ✓ 124                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 9        | 9        | 692      | 100               | ✓ 100                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 10       | 10       | 693      | 75                | ✓ 75                                                   | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 11       | 11       | 694      | 50                | ✓ 50                                                   | x x                                |     | x     |     |     |      |  |  |  |  |          |
| 12       | 12       | 695      | 40                | ✓ 40                                                   | x                                  |     | x x   |     |     |      |  |  |  |  |          |
| 13       | 13       | 696      | 30                | ✓ 30                                                   | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 14       | 14       | 697      | 20                | ✓ 20                                                   | x                                  |     | x     | x x |     |      |  |  |  |  |          |
| 15       | 15       | 698      | 10                | ✓ 10                                                   | x                                  |     | x     | x x |     |      |  |  |  |  |          |
| 16       | 16       | 699      | 5                 | ✓ 5                                                    | x                                  | x   | x     |     |     |      |  |  |  |  |          |
| 17       | 17       | 700      | 0                 | ✓ 2                                                    | x                                  |     | x     | x x |     | x x  |  |  |  |  |          |
| 18       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 19       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 20       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 21       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 22       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 23       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 24       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TU

Bottom Depth: 374 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0219 | 1819  |
| Bottom | 0229 |       |
| End    | 0250 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 9.80   | N |
| Lon: | 123 ° 33.06 | W |

Start

Bottom

End

Lat: 49 ° 9.79 N  
Lon: 123 ° 33.06 W

Lat: 49 ° 9.79 N  
Lon: 123 ° 33.04 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: GE01 Event #: 120 Ship: Tully UTC Date (dd mmm yyyy): 20 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |     |      |       |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|-----|------|-------|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC | Phyto |  |  |  |          |
| 1        | 1        | 701      | Bot-5             | ✓ 394              |                                    |     | x     |     |     |      |       |  |  |  |          |
| 2        | 2        | 702      | 200               | ✓ 200              |                                    |     | x     |     |     |      |       |  |  |  |          |
| 3        | 3        | 703      | 100               | ✓ 100              |                                    |     | x     |     |     |      |       |  |  |  |          |
| 4        | 4        | 704      | 75                | ✓ 75               |                                    |     | x     |     |     |      |       |  |  |  |          |
| 5        | 5        | 705      | 50                | ✓ 50               |                                    |     | x     |     |     |      |       |  |  |  |          |
| 6        | 6        | 706      | 40                | ✓ 40               |                                    |     | x     |     |     |      |       |  |  |  |          |
| 7        | 7        | 707      | 30                | ✓ 30               |                                    |     | x     |     |     |      |       |  |  |  |          |
| 8        | 8        | 708      | 20                | ✓ 20               |                                    |     | x     | xx  |     |      |       |  |  |  |          |
| 9        | 9        | 709      | 10                | ✓ 10               |                                    |     | x     | xx  |     |      |       |  |  |  |          |
| 10       | 10       | 710      | 5                 | ✓ 5                |                                    | x   | x     |     |     |      |       |  |  |  |          |
| 11       | 11       | 711      | 0                 | ✓ 2                |                                    |     | xx    | xx  |     | xx   | x     |  |  |  |          |
| 12       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |     |      |       |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): DY/TU

Bottom Depth: 398 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0405 | 2005  |
| Bottom | 0415 |       |
| End    | 0433 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 15.04  | N |
| Lon: | 123 ° 44.96 | W |

Start

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 15.06  | N |
| Lon: | 123 ° 44.96 | W |

Bottom

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 15.05  | N |
| Lon: | 123 ° 44.93 | W |

End

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 27 Event #: 124 Ship: Tully UTC Date (dd mmm yyyy): 20 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |          |
| 1        | 1        | 712      | Bot-5             | ✓ 340                                                  | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 2        | 2        | 713      | 300               | ✓ 300                                                  | x                                  |     | x     |     | xx  |      |  |  |  |  |          |
| 3        | 3        | 714      | 250               | ✓ 250                                                  | x                                  |     | xx    |     | x   |      |  |  |  |  |          |
| 4        | 4        | 715      | 200               | ✓ 200                                                  | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 5        | 5        | 716      | 175               | ✓ 175                                                  | x                                  |     | x     |     |     |      |  |  |  |  |          |
| 6        | 6        | 717      | 150               | ✓ 150                                                  | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 7        | 7        | 718      | 125               | ✓ 125                                                  | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 8        | 8        | 719      | 100               | ✓ 100                                                  | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 9        | 9        | 720      | 75                | ✓ 75                                                   | xx                                 |     | x     |     | x   |      |  |  |  |  |          |
| 10       | 10       | 721      | 50                | ✓ 50                                                   | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 11       | 11       | 722      | 40                | ✓ 40                                                   | x                                  |     | xx    |     | x   |      |  |  |  |  |          |
| 12       | 12       | 723      | 30                | ✓ 30                                                   | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 13       | 13       | 724      | 20                | ✓ 20                                                   | x                                  |     | x     | xx  | xx  |      |  |  |  |  |          |
| 14       | 14       | 725      | 10                | ✓ 10                                                   | x                                  |     | x     | xx  | x   |      |  |  |  |  |          |
| 15       | 15       | 726      | 5                 | ✓ 5                                                    | xx                                 | x   | x     |     | x   |      |  |  |  |  |          |
| 16       | 16       | 727      | 0                 | ✓ 1                                                    | x                                  |     | x     | xx  | x   | xx   |  |  |  |  |          |
| 17       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 18       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 19       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 20       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 21       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 22       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 23       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |
| 24       |          |          |                   |                                                        |                                    |     |       |     |     |      |  |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): JH/TVBottom Depth: 343 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0619 | 2219  |
| Bottom | 0627 |       |
| End    | 0649 |       |

Positional Information  
Start  
Lat: 49° 19.12 N  
Lon: 123° 48.01 WBottom  
Lat: 49° 19.11 N  
Lon: 123° 48.03 WEnd  
Lat: 49° 19.13 N  
Lon: 123° 47.99 W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 2 Event #: 125 Ship: Tully UTC Date (dd mmm yyyy): 26 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |      |       |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|------|-------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | HPLC | Phyto |  |  |  |  |          |
| 1        | 1        | 728      | Bot-5             | ✓ 275              | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 2        | 2        | 729      | 250               | ✓ 250              | x x                                |     | x     |     |      |       |  |  |  |  |          |
| 3        | 3        | 730      | 200               | ✓ 200              | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 4        | 4        | 731      | 175               | ✓ 176              | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 5        | 5        | 732      | 150               | ✓ 150              | x x                                |     | x     |     |      |       |  |  |  |  |          |
| 6        | 6        | 733      | 125               | ✓ 125              | x                                  |     | x x   |     |      |       |  |  |  |  |          |
| 7        | 7        | 734      | 100               | ✓ 100              | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 8        | 8        | 735      | 75                | ✓ 75               | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 9        | 9        | 736      | 50                | ✓ 50               | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 10       | 10       | 737      | 40                | ✓ 40               | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 11       | 11       | 738      | 30                | ✓ 30               | x                                  |     | x     |     |      |       |  |  |  |  |          |
| 12       | 12       | 739      | 20                | ✓ 19               | x                                  |     | x     | x x |      |       |  |  |  |  |          |
| 13       | 13       | 740      | 10                | ✓ 11               | x                                  |     | x     | x x |      |       |  |  |  |  |          |
| 14       | 14       | 741      | 5                 | ✓ 5                | x                                  | x   | x x   |     |      |       |  |  |  |  |          |
| 15       | 15       | 742      | 0                 | ✓ 1.1              | x                                  |     | x     | x x | x x  | x     |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |      |       |  |  |  |  |          |

|                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                              |
| <input checked="" type="radio"/> ROS <input type="radio"/> TRM <input type="radio"/> X-Niskin <input type="radio"/> other? |
| Watchkeeper(s): MP                                                                                                         |

|                     |                                                            |   |
|---------------------|------------------------------------------------------------|---|
| Bottom Depth:       | 280                                                        | m |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y <input type="radio"/> N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 08 32 | 00 32 |
| Bottom | 08 39 |       |
| End    | 08 56 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 24 10 N      |
| Lon: 124 ° 9 33 W      |

|                   |
|-------------------|
| Bottom            |
| Lat: 49 ° 24 07 N |
| Lon: 124 ° 9 31 W |

|                   |
|-------------------|
| End               |
| Lat: 49 ° 24 06 N |
| Lon: 124 ° 9 16 W |

|                 |
|-----------------|
| Extra comments: |
|-----------------|



## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

CPF2

Event #:

127

Ship:

Tully

UTC Date (dd mmm yyyy): 20 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |  |  |          |
| 1        | 1        | 743      | Bot-5             | ✓ 319              | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 2        | 2        | 744      | 175               | ✓ 175              | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 3        | 3        | 745      | 150               | ✓ 150              | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 4        | 4        | 746      | 125               | ✓ 125              | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 5        | 5        | 747      | 100               | ✓ 100              | xx                                 |     | xx    |     |     |      |  |  |  |  |  |  |          |
| 6        | 6        | 748      | 75                | ✓ 75               | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 7        | 7        | 749      | 50                | ✓ 50               | xx                                 |     | x     |     |     |      |  |  |  |  |  |  |          |
| 8        | 8        | 750      | 40                | ✓ 40               | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 9        | 9        | 751      | 30                | ✓ 30               | x                                  |     | x     |     |     |      |  |  |  |  |  |  |          |
| 10       | 10       | 752      | 20                | ✓ 20               | x                                  |     | x     | xx  |     |      |  |  |  |  |  |  |          |
| 11       | 11       | 753      | 10                | ✓ 10               | x                                  |     | x     | xx  |     |      |  |  |  |  |  |  |          |
| 12       | 12       | 754      | 5                 | ✓ 5                | x                                  | x   | x     |     |     |      |  |  |  |  |  |  |          |
| 13       | 13       | 755      | 0                 | ✓ 0.7              | x                                  |     | xx    | xx  |     | xx   |  |  |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |  |  |          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MB

Bottom Depth: 350 m  
Transmisso Cleaned: Y N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 11 01 | 0301  |
| Bottom | 1109  |       |
| End    | 1124  |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 27 98  | N |
| Lon: | 124 ° 29 97 | W |

Start

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 27 96  | N |
| Lon: | 124 ° 30 03 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 27 97  | N |
| Lon: | 124 ° 30 11 | W |

End

Extra comments:



# Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 12 Event #: 129 Ship: Tully UTC Date (dd mmm yyyy): 20 Feb 2017

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| Niskin #           | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |       |       |     |     |       |       |    |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                    |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal   | Nut-F | Chl | DIC | HPLC  | Phyto |    |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                    |          |          |                   | ✓                  |                                    | MP/RB | RB    | LH  | MB  | SS/WB | MB    | MO |  |  |  |  |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?

Watchkeeper(s): MB

Bottom Depth: 355 m

Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1351 |       |
| Bottom | 1358 |       |
| End    | 1416 |       |

Positional Information

Start

Lat: 49° 43' 80" N

Lon: 124° 41' 09" W

Bottom

Lat: 49° 43' 77" N

Lon: 124° 41' 14" W

End

Lat: 49° 43' 85" N

Lon: 124° 41' 12" W

Extra comments:

Rosette sat on deck ~10 min before sampling.

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: 14 Event #: 132 Ship: Tully UTC Date (dd mmm yyyy): 10 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  | Comments |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |          |  |
| 1        | 1        | 772      | Bot-5             | ✓ 310              | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 2        | 2        | 773      | 250               | ✓ 250              | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 3        | 3        | 774      | 200               | ✓ 200              | xx                                 |     | x     |     |     |      |  |  |  |  |          |  |
| 4        | 4        | 775      | 175               | ✓ 175              | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 5        | 5        | 776      | 150               | ✓ 150              | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 6        | 6        | 777      | 125               | ✓ 125              | x                                  |     | xx    |     |     |      |  |  |  |  |          |  |
| 7        | 7        | 778      | 100               | ✓ 100              | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 8        | 8        | 779      | 75                | ✓ 75               | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 9        | 9        | 780      | 50                | ✓ 51               | x                                  |     | x     |     |     |      |  |  |  |  |          |  |
| 10       | 10       | 781      | 40                | ✓ 40               | xx                                 |     | x     |     |     |      |  |  |  |  |          |  |
| 11       | 11       | 782      | 30                | ✓ 30               | x                                  |     | xx    |     |     |      |  |  |  |  |          |  |
| 12       | 12       | 783      | 20                | ✓ 20               | x                                  |     | x     | xx  |     |      |  |  |  |  |          |  |
| 13       | 13       | 784      | 10                | ✓ 10               | x                                  |     | x     | xx  |     |      |  |  |  |  |          |  |
| 14       | 14       | 785      | 5                 | ✓ 5                | x                                  | x   | x     |     |     |      |  |  |  |  |          |  |
| 15       | 15       | 786      | 0                 | ✓ 0.8              | x                                  |     | x     | xx  |     | xx   |  |  |  |  |          |  |
| 16       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 17       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 18       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 19       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 20       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 21       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 22       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 23       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |
| 24       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |  |

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): MSBottom Depth: 313 m  
Transmisso Cleaned: ☒ Y / ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 1653 | 0853  |
| Bottom | 1700 |       |
| End    | 1720 |       |

Positional Information  
Start  
Lat: 49° 53' 15" N  
Lon: 124° 59' 73" WBottom  
Lat: 49° 53' 14" N  
Lon: 124° 59' 71" WEnd  
Lat: 49° 53' 06" N  
Lon: 124° 59' 47" W

Extra comments:

## Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID:

2017-01

Station:

BS11

Event #:

133

Ship:

Tully

UTC Date (dd mmm yyyy): 20 2 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |     |     |      |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-----|-----|------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Oxy                                | Sal | Nut-F | Chl | DIC | HPLC |  |  |  |  |          |
| 1        | 1        | 787      | Bot-5             | ✓ 57               | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 2        | 2        | 788      | 40                | ✓ 40               | x                                  |     | x x   |     |     |      |  |  |  |  |          |
| 3        | 3        | 789      | 30                | ✓ 30               | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 4        | 4        | 790      | 20                | ✓ 20               | x                                  |     | x     | x x | x   |      |  |  |  |  |          |
| 5        | 5        | 791      | 10                | ✓ 10               | x                                  |     | x     | x x | x   |      |  |  |  |  |          |
| 6        | 6        | 792      | 5                 | ✓ 5                | x                                  |     | x     |     | x   |      |  |  |  |  |          |
| 7        | 7        | 793      | 0                 | ✓ 1                | x                                  |     | x     | x x |     | x x  |  |  |  |  |          |
| 8        |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 9        |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 10       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 11       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 12       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 13       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |       |     |     |      |  |  |  |  |          |

Profile type:  
☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
Watchkeeper(s): DY/TU

Bottom Depth: 62 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2144 | 1344  |
| Bottom | 2147 |       |
| End    | 2154 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 49° 29.01  | N |
| Lon: | 124° 46.00 | W |

Start  
Bottom  
End

Lat: 49° 29.01 N  
Lon: 124° 46.00 W

Lat: 49° 28.99 N  
Lon: 124° 46.01 W

Extra comments:

# Water Properties Group

## Sampling Log

Institute of Ocean Sciences, Ocean Sciences Division, Sidney, BC

Cruise ID: 2017-01 Station: SI03 Event #: 136 Ship: Tully UTC Date (dd mmm yyyy): 21 Feb 2017

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |  |    |   |  |  |  |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|--|----|---|--|--|--|--|--|--|----------|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure |                                    |  | Th |   |  |  |  |  |  |  |          |  |  |
| 1        | 1        | 794      | 48                | <input checked="" type="checkbox"/> 48                 |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 2        | 2        | 795      | 44                | <input checked="" type="checkbox"/> 44                 |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 3        | 3        | 796      | 40                | <input checked="" type="checkbox"/> 40.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 4        | 4        | 797      | 36                | <input checked="" type="checkbox"/> 36.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 5        | 5        | 798      | 32                | <input checked="" type="checkbox"/> 32.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 6        | 6        | 799      | 28                | <input checked="" type="checkbox"/> 28.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 7        | 7        | 800      | 24                | <input checked="" type="checkbox"/> 24.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 8        | 8        | 801      | 20                | <input checked="" type="checkbox"/> 20                 |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 9        | 9        | 802      | 16                | <input checked="" type="checkbox"/> 16.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 10       | 10       | 803      | 12                | <input checked="" type="checkbox"/> 12.1               |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 11       | 11       | 804      | 8                 | <input checked="" type="checkbox"/> 8                  |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 12       | 12       | 805      | 4                 | <input checked="" type="checkbox"/> 4                  |                                    |  |    | x |  |  |  |  |  |  |          |  |  |
| 13       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 14       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 15       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 16       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 17       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 18       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 19       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 20       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 21       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 22       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 23       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |
| 24       |          |          |                   |                                                        |                                    |  |    |   |  |  |  |  |  |  |          |  |  |

Version: 25 Nov 2011

Transmittal: 10/11/2011 10:00 AM

Profile type: ☒ ROS ☐ TRM ☐ X-Niskin ☐ other?  
 Watchkeeper(s): MB

Bottom Depth: 226 m  
 Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1232 | 0432  |
| Bottom | 1237 |       |
| End    | 1254 |       |

Positional Information  
 Start  
 Lat: 48 ° 35 57 N  
 Lon: 123 ° 30 05 W

Bottom  
 Lat: 48 ° 35 57 N  
 Lon: 123 ° 30 08 W

End  
 Lat: 48 ° 35 58 N  
 Lon: 123 ° 30 11 W

Extra comments:  
 CTD to bottom-10