

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: Haro 59

Event #: 3

Ship: Tully

UTC Date (dd/mm/yyyy): 11/2/2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |        |     |     |  |    |  |  |  | Comments |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--------|-----|-----|--|----|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DIC                                | Oxy | Nut-fr | Sal | pH  |  | Nd |  |  |  |          |  |
| 1        | 1        | 1        | Bot-10            | ✓ 214                | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 2        | 4        | 2        | 200               | ✓ 201                | xx                                 | x   | x      |     | x   |  |    |  |  |  |          |  |
| 3        | 5        | 3        | 175               | ✓ 175                | x                                  | x   | x      |     | xxx |  |    |  |  |  |          |  |
| 4        | 6        | 4        | 150               | ✓ 151                | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 5        | 8        | 5        | 125               | ✓ 125                | x                                  | xx  | x      |     | x   |  |    |  |  |  |          |  |
| 6        | 9        | 6        | 100               | ✓ 99                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 7        | 12       | 7        | 80                | ✓ 80                 | xx                                 | x   | xx     |     | x   |  |    |  |  |  |          |  |
| 8        | 14       | 8        | 60                | ✓ 60                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 9        | 15       | 9        | 50                | ✓ 49                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 10       | 17       | 10       | 40                | ✓ 40                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 11       | 18       | 11       | 30                | ✓ 29                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 12       | 19       | 12       | 20                | ✓ 20                 | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 13       | 20       | 13       | 10                | ✓ 10                 | xx                                 | x   | x      |     | xxx |  |    |  |  |  |          |  |
| 14       | 21       | 14       | 5                 | ✓ 5                  | x                                  | xx  | x      |     | x   |  |    |  |  |  |          |  |
| 15       | 24       | 15       | 0                 | ✓ 0.4                | x                                  | x   | x      |     | x   |  |    |  |  |  |          |  |
| 16       | 2        | 16       | Bot-10            | ✓ 214                |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 17       | 3        | 17       | Bot-10            | ✓ 214                |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 18       | 7        | 18       | 150               | ✓ 151                |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 19       | 10       | 19       | 100               | ✓ 99                 |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 20       | 11       | 20       | 100               | ✓ 99                 |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 21       | 13       | 21       | 75                | ✓ 75                 |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 22       | 16       | 22       | 50                | ✓ 49                 |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 23       | 22       | 23       | 5                 | ✓ 5                  |                                    |     |        |     |     |  | x  |  |  |  |          |  |
| 24       | 23       | 24       | 5                 | ✓ 5                  |                                    |     |        |     |     |  | x  |  |  |  |          |  |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 225     | m |
| Transmisso Cleaned: | (Y) / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0519 | 2119  |
| Bottom | 0524 |       |
| End    | 0542 |       |

|                        |                 |   |
|------------------------|-----------------|---|
| Positional Information |                 |   |
| Start                  | Lat: 48° 36.80  | N |
|                        | Lon: 123° 14.62 | W |

|        |                 |   |
|--------|-----------------|---|
| Bottom | Lat: 48° 36.80  | N |
|        | Lon: 123° 14.62 | W |

|     |                 |   |
|-----|-----------------|---|
| End | Lat: 48° 36.77  | N |
|     | Lon: 123° 14.76 | W |

|                                     |
|-------------------------------------|
| Extra comments:                     |
| Debby and Roger                     |
| OUT-OF-ORDER                        |
| 1; 16-17; 24; 18; 8-6; 19-20; 7; 21 |
| 8-9; 22; 10-14; 23-24; 15           |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: JF2 Event #: 5 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |           |        |     |       |     |      |  |    |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----------|--------|-----|-------|-----|------|--|----|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DIC KS                             | Oxy mS/KS | Nut-fr | Sal | pH GC | Chl | HPLC |  | Cr |  |          |  |  |  |
| 1        | 1        | 25       | Bot-10            | ✓ 177                | x                                  | x         | x      |     | x     |     |      |  | x  |  |          |  |  |  |
| 2        | 2        | 26       | 150               | ✓ 150                | xx                                 | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 3        | 5        | 27       | 125               | ✓ 125                | x                                  | x         | x      |     | xxx   |     |      |  |    |  |          |  |  |  |
| 4        | 6        | 28       | 100               | ✓ 100                | x                                  | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 5        | 9        | 29       | 80                | ✓ 80                 | x                                  | xx        | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 6        | 10       | 30       | 60                | ✓ 60                 | xx                                 | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 7        | 13       | 31       | 50                | ✓ 50                 | x                                  | x         | xx     |     | x     |     |      |  |    |  |          |  |  |  |
| 8        | 14       | 32       | 40                | ✓ 40                 | x                                  | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 9        | 17       | 33       | 30                | ✓ 30                 | x                                  | x         | x      |     | x     | xx  | xx   |  |    |  |          |  |  |  |
| 10       | 18       | 34       | 20                | ✓ 20                 | xx                                 | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 11       | 21       | 35       | 10                | ✓ 10                 | x                                  | x         | x      |     | xxx   |     |      |  |    |  |          |  |  |  |
| 12       | 22       | 36       | 5                 | ✓ 5                  | x                                  | x         | x      |     | x     | xx  | xx   |  |    |  |          |  |  |  |
| 13       | 24       | 37       | 0                 | ✓ 0                  | x                                  | x         | x      |     | x     |     |      |  |    |  |          |  |  |  |
| 14       | 3        | 38       | 150               | ✓ 150                |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 15       | 4        | 39       | 125               | ✓ 125                |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 16       | 7        | 40       | 100               | ✓ 100                |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 17       | 8        | 41       | 80                | ✓ 80                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 18       | 11       | 42       | 60                | ✓ 60                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 19       | 12       | 43       | 50                | ✓ 50                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 20       | 15       | 44       | 40                | ✓ 40                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 21       | 16       | 45       | 30                | ✓ 30                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 22       | 19       | 46       | 20                | ✓ 20                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 23       | 20       | 47       | 10                | ✓ 10                 |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |
| 24       | 23       | 48       | 5                 | ✓ 5                  |                                    |           |        |     |       |     |      |  | x  |  |          |  |  |  |

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

Watchkeeper(s): AB

Bottom Depth: 187 m

Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1112 | 0312  |
| Bottom | 1116 |       |
| End    | 1132 |       |

Positional Information

Start

Lat: 48 ° 18 01 N

Lon: 124 ° 00 14 W

Bottom

Lat: 48 ° 18 00 N

Lon: 124 ° 00 46 W

End

Lat: 48 ° 18 00 N

Lon: 124 ° 00 14 W

Extra comments:

Debby and Roger

1-2; 14-15; 3-4; 16-17; 5-6; 18-19

7-8; 20-21; 9-10; 22-23; 11-12;

24; 13

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P1 Event #: 10 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |              |     |      |     |     |    |     |    |  | Comments |  |  |  |                                         |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|--------------|-----|------|-----|-----|----|-----|----|--|----------|--|--|--|-----------------------------------------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal          | Chl | HPLC | DIC | Oxy | pH | Bsi | Nd |  |          |  |  |  |                                         |
| 1        | 1        | 49       | Bot-10            | <input checked="" type="checkbox"/>                    | 116                                | X            |     |      |     | xx  | xx | xxx |    |  |          |  |  |  |                                         |
| 2        | 2        | 50       | 30                | <input checked="" type="checkbox"/>                    | 29                                 | X            |     | xx   | xx  | x   | x  | x   |    |  |          |  |  |  |                                         |
| 3        | 3        | 51       | 5                 | <input checked="" type="checkbox"/>                    | 5                                  | <del>X</del> | x   | xx   | xx  | x   | x  | x   |    |  |          |  |  |  | No water left (no idea why)             |
| 4        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  | -no Nut, 1/2 of 2nd HPLC from 5m Bottle |
| 5        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 6        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 7        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 8        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 9        |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 10       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 11       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 12       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 13       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 14       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 15       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 16       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 17       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 18       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 19       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 20       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 21       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 22       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |
| 23       | 4        | -        | 5                 | <input checked="" type="checkbox"/>                    | 5                                  |              |     |      |     |     |    |     |    |  |          |  |  |  | no sample fire to check spigot          |
| 24       |          |          |                   |                                                        |                                    |              |     |      |     |     |    |     |    |  |          |  |  |  |                                         |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| 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:       | 118                                                              | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 19:21 | 11:21 |
| Bottom | 19:24 |       |
| End    | 19:28 |       |

|                        |      |             |   |
|------------------------|------|-------------|---|
| Positional Information |      |             |   |
| Start                  | Lat: | 48 ° 34 54  | N |
|                        | Lon: | 125 ° 30 13 | W |

|        |      |             |   |
|--------|------|-------------|---|
| Bottom | Lat: | 48 ° 34 55  | N |
|        | Lon: | 125 ° 30 14 | W |

|     |      |             |   |
|-----|------|-------------|---|
| End | Lat: | 48 ° 34 58  | N |
|     | Lon: | 125 ° 30 18 | W |

|                                                                          |
|--------------------------------------------------------------------------|
| Extra comments:                                                          |
| Fire bottle 23 to test spigot/vent which may be leaky. -very slight leak |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P2 Event #: 16 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |       |       |     |     |       |  |        |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-------|-------|-----|-----|-------|--|--------|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Nut-F | Nut-C | Sal | DIC | pH    |  | Céline |  |  |          |  |  |  |
| 1        | 1        | 96       | Bot-10            | ✓ 106                | x x                                | x     |       |     | x   | x     |  | x      |  |  |          |  |  |  |
| 2        | 2        | 97       | 100               | ✓                    | x                                  | x     |       |     | x   | x     |  | x      |  |  |          |  |  |  |
| 3        | 3        | 98       | 75                | ✓                    | x                                  | x     |       |     | x x | x     |  |        |  |  |          |  |  |  |
| 4        | 4        | 99       | 75                | ✓                    | x                                  | x     |       |     | x   | x     |  |        |  |  |          |  |  |  |
| 5        | 5        | 100      | 50                | ✓                    | x                                  | x     |       |     | x   | x x x |  | x      |  |  |          |  |  |  |
| 6        | 6        | 101      | 25                | ✓                    | x                                  | x x   |       |     | x   | x     |  | x      |  |  |          |  |  |  |
| 7        | 7        | 102      | 10                | ✓                    | x                                  | x     |       |     | x   | x     |  | x      |  |  |          |  |  |  |
| 8        | 8        | 103      | 5                 | ✓                    | x                                  | x     |       | x   | x   | x     |  |        |  |  |          |  |  |  |
| 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      |

|                     |       |   |
|---------------------|-------|---|
| Bottom Depth:       | 115   | m |
| Transmisso Cleaned: | Q / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2320 | 1520  |
| Bottom | 2324 |       |
| End    | 2334 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48° 26.01 N       |
| Lon: 125° 59.97 W      |

|                   |
|-------------------|
| Bottom            |
| Lat: 48° 36.00 N  |
| Lon: 125° 59.95 W |

|                   |
|-------------------|
| End               |
| Lat: 48° 36.01 N  |
| Lon: 125° 59.97 W |

|                    |
|--------------------|
| Extra comments:    |
| Deep cast + Céline |



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P2 Event #: 12 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |  |    |   |  |  |  |  |  |  | Comments      |
|----------|----------|----------|-------------------|----------------------|------------------------------------|--|----|---|--|--|--|--|--|--|---------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    |  | Nd |   |  |  |  |  |  |  |               |
| 1        |          | 52       | Bot-10            | ✓                    | 107                                |  |    | x |  |  |  |  |  |  |               |
| 2        |          | 53       | Bot-10            | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 3        |          | 54       | Bot-10            | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 4        |          | 55       | Bot-10            | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 5        |          | 56       | 100               | ✓                    | 100                                |  |    | x |  |  |  |  |  |  |               |
| 6        |          | 57       | 100               | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 7        |          | 58       | 100               | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 8        |          | 59       | 100               | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 9        |          | 60       | 75                | ✓                    | 75                                 |  |    | x |  |  |  |  |  |  |               |
| 10       |          | 61       | 75                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 11       |          | 62       | 75                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 12       |          | 63       | 75                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 13       |          | 64       | 50                | ✓                    | 50                                 |  |    | x |  |  |  |  |  |  | ← Fired early |
| 14       |          | 65       | 50                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 15       |          | 66       | 50                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 16       |          | 67       | 50                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 17       |          | 68       | 25                | ✓                    | 26                                 |  |    | x |  |  |  |  |  |  |               |
| 18       |          | 69       | 25                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 19       |          | 70       | 25                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 20       |          | 71       | 25                | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 21       |          | 72       | 5                 | ✓                    | 5                                  |  |    | x |  |  |  |  |  |  |               |
| 22       |          | 73       | 5                 | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 23       |          | 74       | 5                 | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |
| 24       |          | 75       | 5                 | ✓                    |                                    |  |    | x |  |  |  |  |  |  |               |

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

|                     |                                                                  |   |
|---------------------|------------------------------------------------------------------|---|
| Bottom Depth:       | 115                                                              | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2138 | 1338  |
| Bottom | 2140 |       |
| End    | 2149 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 36.08 N      |
| Lon: 125 ° 59.96 W     |

Start

Bottom

End

|                   |
|-------------------|
| Bottom            |
| Lat: 48 ° 36.07 N |
| Lon: 126 ° 0.03 W |

|                   |
|-------------------|
| End               |
| Lat: 48 ° 36.07 N |
| Lon: 126 ° 0.05 W |

|                       |
|-----------------------|
| Extra comments:       |
| Maureen's cast for Nd |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P2 Event #: 15 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |        |     |      |  |    |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|--------|-----|------|--|----|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-Fr | Chl | HPLC |  | Cr |  |  |          |  |  |  |
| 1        |          | 76       | 100               | ✓                    |                                    | x    | x    | x      | x x | x    |  |    |  |  |          |  |  |  |
| 2        |          | 77       | 75                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 3        |          | 78       | 50                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 4        |          | 79       | 40                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 5        |          | 80       | 30                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 6        |          | 81       | 25                | ✓                    |                                    | x    |      |        | x   | x x  |  |    |  |  |          |  |  |  |
| 7        |          | 82       | 20                | ✓                    |                                    | x x  | x x  | x x    | x   | x    |  |    |  |  |          |  |  |  |
| 8        |          | 83       | 15                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 9        |          | 84       | 10                | ✓                    |                                    | x    |      |        | x   | x    |  |    |  |  |          |  |  |  |
| 10       |          | 85       | 5                 | ✓                    |                                    | x    | x    | x      | x   | x    |  |    |  |  |          |  |  |  |
| 11       |          | 86       | 0                 | ✓                    |                                    | x    | x    | x      | x   | x    |  |    |  |  |          |  |  |  |
| 12       |          | 87       | 30                | ✓                    |                                    |      |      |        | x x | x x  |  |    |  |  |          |  |  |  |
| 13       |          | 88       | 15                | ✓                    |                                    |      |      |        | x x | x x  |  |    |  |  |          |  |  |  |
| 14       |          | 89       | 5                 | ✓                    |                                    |      |      |        | x x | x x  |  |    |  |  |          |  |  |  |
| 15       |          | 90       | Bot-10            | ✓                    | 106                                |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 16       |          | 91       | 100               | ✓                    |                                    |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 17       |          | 92       | 75                | ✓                    |                                    |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 18       |          | 93       | 50                | ✓                    |                                    |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 19       |          | 94       | 25                | ✓                    |                                    |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 20       |          | 95       | 5                 | ✓                    |                                    |      |      |        |     |      |  | x  |  |  |          |  |  |  |
| 21       |          |          |                   |                      |                                    |      |      |        |     |      |  |    |  |  |          |  |  |  |
| 22       |          |          |                   |                      |                                    |      |      |        |     |      |  |    |  |  |          |  |  |  |
| 23       |          |          |                   |                      |                                    |      |      |        |     |      |  |    |  |  |          |  |  |  |
| 24       |          |          |                   |                      |                                    |      |      |        |     |      |  |    |  |  |          |  |  |  |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 117     | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2228 | 1428  |
| Bottom | 2231 |       |
| End    | 2245 |       |

|                        |                 |   |
|------------------------|-----------------|---|
| Positional Information |                 |   |
| Start                  | Lat: 48° 36.05  | N |
|                        | Lon: 125° 59.97 | W |

|        |                 |   |
|--------|-----------------|---|
| Bottom | Lat: 48° 36.05  | N |
|        | Lon: 125° 59.98 | W |

|     |                |   |
|-----|----------------|---|
| End | Lat: 48° 36.04 | N |
|     | Lon: 126° 0.01 | W |

|                                        |
|----------------------------------------|
| Extra comments:                        |
| DMS + Kohen cast; out-of-order         |
| 15 - 16 - 1 - 2 - 17 - 18 - 3 - 4 - 5  |
| 12 - 6 - 19 - 7 - 8 - 13 - 9 - 10 - 14 |
| 20 - 11                                |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P3 Event #: 18 Ship: Tully UTC Date (dd|mmm|yyyy): 12 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |    |    |   |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|----|----|---|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |    | Nd |   |  |  |  |          |  |  |  |
| 1        |          | 104      | Bot-10            | ✓                    | 772                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 2        |          | 105      | Bot-10            | ✓                    | 772                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 3        |          | 106      | 625               | ✓                    | -626                               |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 4        |          | 107      | 625               | ✓                    | -625                               |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 5        |          | 108      | 525               | ✓                    | 525                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 6        |          | 109      | 525               | ✓                    | 525                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 7        |          | 110      | 425               | ✓                    | 425                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 8        |          | 111      | 425               | ✓                    | 425                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 9        |          | 112      | 375               | ✓                    | 478                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 10       |          | 113      | 375               | ✓                    | 475                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 11       |          | 114      | 300               | ✓                    | 300                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 12       |          | 115      | 300               | ✓                    | 300                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 13       |          | 116      | 225               | ✓                    | 226                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 14       |          | 117      | 225               | ✓                    | 226                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 15       |          | 118      | 175               | ✓                    | 175                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 16       |          | 119      | 175               | ✓                    | 174                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 17       |          | 120      | 100               | ✓                    | 101                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 18       |          | 121      | 100               | ✓                    | 101                                |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 19       |          | 122      | 50                | ✓                    | 53                                 |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 20       |          | 123      | 50                | ✓                    | 52                                 |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 21       |          | 124      | 5                 | ✓                    | 5                                  |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 22       |          | 125      | 5                 | ✓                    | 5                                  |     |     |      |    |    | x |  |  |  |          |  |  |  |
| 23       |          | 126      | 30                | ✓                    | 30                                 | x   |     | xx   | xx |    |   |  |  |  |          |  |  |  |
| 24       |          | 127      | 5                 | ✓                    | 6                                  | x   | x   | xx   | xx |    |   |  |  |  |          |  |  |  |

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

Bottom Depth: 807 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0111 | 1711  |
| Bottom | 0130 |       |
| End    | 0201 |       |

Positional Information  
Start  
Lat: 48° 37.53 N  
Lon: 126° 20.02 WBottom  
Lat: 48° 37.67 N  
Lon: 126° 20.23 WEnd  
Lat: 48° 37.69 N  
Lon: 126° 20.09 WExtra comments:  
OUT-OF-ORDER  
1 - 20; 23 - 24; 21 - 22

## Water Properties Group

## Sampling Log

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

Cruise ID: 2014-19

Station: P4

Event #: 20

Ship: Tully

UTC Date (dd/mm/yyyy): 12 / 2 / 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |    |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|----|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | Cs |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 128      | 150               | ✓                    | 152                                |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 129      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 130      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 131      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 132      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 133      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 134      | 100               | ✓                    | 102                                |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 135      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 136      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 137      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 138      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 139      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 140      | 50                | ✓                    | 51                                 |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 141      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 142      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 143      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 144      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 145      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 146      | 0                 | ✓                    | 2                                  |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 147      | 0                 | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 148      | 0                 | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 149      | 0                 | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 150      | 0                 | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 151      | 0                 | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| Profile type:                                                                                                                          |
| <input checked="" type="checkbox"/> ROS <input type="checkbox"/> TRM <input type="checkbox"/> X-Niskin <input type="checkbox"/> other? |
| Watchkeeper(s): 2Y                                                                                                                     |

|                     |                                                                  |   |
|---------------------|------------------------------------------------------------------|---|
| Bottom Depth:       | 1310                                                             | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0351 | 1951  |
| Bottom | 0354 |       |
| End    | 0403 |       |

|                        |                  |   |
|------------------------|------------------|---|
| Positional Information |                  |   |
| Start                  | Lat: 48 ° 39.01  | N |
|                        | Lon: 126 ° 39.97 | W |

|        |                  |   |
|--------|------------------|---|
| Bottom | Lat: 48 ° 39.01  | N |
|        | Lon: 126 ° 39.96 | W |

|     |                  |   |
|-----|------------------|---|
| End | Lat: 48 ° 39.01  | N |
|     | Lon: 126 ° 39.96 | W |

|                     |
|---------------------|
| Extra comments:     |
| Shallow Cesium cast |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 21 Ship: Tully UTC Date (dd|mmm|yyyy): 12 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |   |    |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|---|----|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure |                                    | UBC |   | Cs |  |  |  |  |  |  |  |  |          |
| 1        |          | 152      | Bot-10            | ✓                  | 1319                               |     | x |    |  |  |  |  |  |  |  |  |          |
| 2        |          | 153      | Bot-10            | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 3        |          | 154      | Bot-10            | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 4        |          | 155      | Bot-10            | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 5        |          | 156      | 1000              | ✓                  | 1001                               |     | x |    |  |  |  |  |  |  |  |  |          |
| 6        |          | 157      | 1000              | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 7        |          | 158      | 1000              | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 8        |          | 159      | 1000              | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 9        |          | 160      | 500               | ✓                  | 501                                |     | x |    |  |  |  |  |  |  |  |  |          |
| 10       |          | 161      | 500               | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 11       |          | 162      | 500               | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 12       |          | 163      | 500               | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 13       |          | 164      | 10                | ✓                  | 10                                 |     | x |    |  |  |  |  |  |  |  |  |          |
| 14       |          | 165      | 10                | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 15       |          | 166      | 10                | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 16       |          | 167      | 10                | ✓                  |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |   |    |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 1310 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0437 | 2037  |
| Bottom | 0459 |       |
| End    | 0527 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39.01  | N |
| Lon: | 126 ° 39.99 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39.01  | N |
| Lon: | 126 ° 39.99 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39.01  | N |
| Lon: | 126 ° 40.00 | W |

Extra comments:

Sam

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 22 Ship: Tully UTC Date (dd|mmm|yyyy): 12 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |    |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|----|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure |                                    | TM  | TM |  |  |  |  |  |  |  |          |
|          |          |          |                   |                                                        |                                    | E.I | UN |  |  |  |  |  |  |  | KS D.Y   |
| 1        |          | 168      |                   | 40                                                     |                                    | x   | x  |  |  |  |  |  |  |  |          |
| 2        |          | 169      |                   | 90                                                     |                                    | x   | x  |  |  |  |  |  |  |  |          |
| 3        |          | 170      |                   | 100                                                    |                                    | xx  | xx |  |  |  |  |  |  |  |          |
| 4        |          | 171      |                   | 5                                                      |                                    |     |    |  |  |  |  |  |  |  |          |
| 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): KS. D.Y.

Bottom Depth: 1312 m  
Transmisso Cleaned: ~~Y~~ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0612 | 22:04 |
| Bottom |      |       |
| End    | 0704 | 23:04 |

Positional Information  
Start  
Lat: 48 ° 39.01 N  
Lon: 126 ° 39.99 W

Bottom  
Lat: ° N  
Lon: ° W

End  
Lat: 48 ° 39.01 N  
Lon: 126 ° 39.99 W

Extra comments:  
TM pumping

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 25 Ship: Tully UTC Date (dd/mmm/yyyy): 12 FEB 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |          |   |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|----------|---|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | Plastics |   |  |  |  |  |  |  |  |          |
| 1        | 1        | 172      | Bot-10            | ✓                    | 1319                               |          | x |  |  |  |  |  |  |  |          |
| 2        | 2        | 173      | 1200              | ✓                    | 1202                               |          | x |  |  |  |  |  |  |  |          |
| 3        | 3        | 174      | 1100              | ✓                    | 1100                               |          | x |  |  |  |  |  |  |  |          |
| 4        | 4        | 175      | 1000              | ✓                    | 1000                               |          | x |  |  |  |  |  |  |  |          |
| 5        | 5        | 176      | 900               | ✓                    | 900                                |          | x |  |  |  |  |  |  |  |          |
| 6        | 6        | 177      | 800               | ✓                    | 800                                |          | x |  |  |  |  |  |  |  |          |
| 7        | 7        | 178      | 700               | ✓                    | 700                                |          | x |  |  |  |  |  |  |  |          |
| 8        | 8        | 179      | 600               | ✓                    | 600                                |          | x |  |  |  |  |  |  |  |          |
| 9        | 9        | 180      | 500               | ✓                    | 500                                |          | x |  |  |  |  |  |  |  |          |
| 10       | 10       | 181      | 450               | ✓                    | 450                                |          | x |  |  |  |  |  |  |  |          |
| 11       | 11       | 182      | 400               | ✓                    | 400                                |          | x |  |  |  |  |  |  |  |          |
| 12       | 12       | 183      | 350               | ✓                    | 350                                |          | x |  |  |  |  |  |  |  |          |
| 13       | 13       | 184      | 300               | ✓                    | 300                                |          | x |  |  |  |  |  |  |  |          |
| 14       | 14       | 185      | 250               | ✓                    | 250                                |          | x |  |  |  |  |  |  |  |          |
| 15       | 15       | 186      | 200               | ✓                    | 200                                |          | x |  |  |  |  |  |  |  |          |
| 16       | 16       | 187      | 175               | ✓                    | 175                                |          | x |  |  |  |  |  |  |  |          |
| 17       | 17       | 188      | 150               | ✓                    | 150                                |          | x |  |  |  |  |  |  |  |          |
| 18       | 18       | 189      | 125               | ✓                    | 125                                |          | x |  |  |  |  |  |  |  |          |
| 19       | 19       | 190      | 100               | ✓                    | 101                                |          | x |  |  |  |  |  |  |  |          |
| 20       | 20       | 191      | 75                | ✓                    | 76                                 |          | x |  |  |  |  |  |  |  |          |
| 21       | 21       | 192      | 50                | ✓                    | 51                                 |          | x |  |  |  |  |  |  |  |          |
| 22       | 22       | 193      | 25                | ✓                    | 26                                 |          | x |  |  |  |  |  |  |  |          |
| 23       | 23       | 194      | 10                | ✓                    | 10                                 |          | x |  |  |  |  |  |  |  |          |
| 24       | 24       | 195      | 5                 | ✓                    | 5                                  |          | x |  |  |  |  |  |  |  |          |

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

Bottom Depth: 1319 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0905 | 0105  |
| Bottom | 0927 |       |
| End    | 1007 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 02  | N |
| Lon: | 126 ° 39 99 | W |

Start

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 02  | N |
| Lon: | 126 ° 39 99 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 39 02  | N |
| Lon: | 126 ° 40 00 | W |

End

Extra comments:  
Plastics cast



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 26 Ship: Tully UTC Date (dd|mmm|yyyy): 12 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |   |  |    |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---|--|----|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | C |  | Cr |  |  |  |  |  |  |          |
| 1        | 1        | 196      | Bot-10            | ✓ 1319               |                                    | x |  |    |  |  |  |  |  |  |          |
| 2        | 3        | 197      | 1250              | ✓ 1250               |                                    | x |  | x  |  |  |  |  |  |  |          |
| 3        | 4        | 198      | 1000              | ✓ 1000               |                                    | x |  |    |  |  |  |  |  |  |          |
| 4        | 7        | 199      | 800               | ✓ 800                |                                    | x |  |    |  |  |  |  |  |  |          |
| 5        | 8        | 200      | 600               | ✓ 600                |                                    | x |  |    |  |  |  |  |  |  |          |
| 6        | 11       | 201      | 400               | ✓ 400                |                                    | x |  |    |  |  |  |  |  |  |          |
| 7        | 12       | 202      | 300               | ✓ 300                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 8        | 13       | 203      | 250               | ✓ 250                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 9        | 14       | 204      | 200               | ✓ 200                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 10       | 15       | 205      | 175               | ✓ 175                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 11       | 16       | 206      | 150               | ✓ 150                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 12       | 17       | 207      | 125               | ✓ 125                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 13       | 18       | 208      | 100               | ✓ 100                |                                    | x |  | x  |  |  |  |  |  |  |          |
| 14       | 19       | 209      | 75                | ✓ 75                 |                                    | x |  | x  |  |  |  |  |  |  |          |
| 15       | 20       | 210      | 50                | ✓ 50                 |                                    | x |  | x  |  |  |  |  |  |  |          |
| 16       | 21       | 211      | 25                | ✓ 25                 |                                    | x |  | x  |  |  |  |  |  |  |          |
| 17       | 22       | 212      | 10                | ✓ 10                 |                                    | x |  | x  |  |  |  |  |  |  |          |
| 18       | 23       | 213      | 5                 | ✓ 5                  |                                    | x |  | x  |  |  |  |  |  |  |          |
| 19       | 2        | 214      | Bot-10            | ✓ 1320               |                                    |   |  | x  |  |  |  |  |  |  |          |
| 20       | 5        | 215      | 1000              | ✓ 1000               |                                    |   |  | x  |  |  |  |  |  |  |          |
| 21       | 6        | 216      | 800               | ✓ 800                |                                    |   |  | x  |  |  |  |  |  |  |          |
| 22       | 9        | 217      | 600               | ✓ 600                |                                    |   |  | x  |  |  |  |  |  |  |          |
| 23       | 10       | 218      | 400               | ✓ 400                |                                    |   |  | x  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |   |  |    |  |  |  |  |  |  |          |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 1310    | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 10:49 | 2:49  |
| Bottom | 11:10 |       |
| End    | 11:49 |       |

|                        |               |
|------------------------|---------------|
| Positional Information |               |
| Start                  |               |
| Lat:                   | 48 ° 39 02 N  |
| Lon:                   | 126 ° 40 00 W |

|        |               |
|--------|---------------|
| Bottom |               |
| Lat:   | 48 ° 39 02 N  |
| Lon:   | 126 ° 40 00 W |

|      |               |
|------|---------------|
| End  |               |
| Lat: | 48 ° 39 02 N  |
| Lon: | 126 ° 40 01 W |

|                                    |
|------------------------------------|
| Extra comments:                    |
| Céline + Kohen                     |
| Bot 10 order!                      |
| 1, 19, 2, 3, 20, 21, 4, 5, 22, 23, |
| 6, 7 → 18                          |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P6 Event #: 28 Ship: Tully UTC Date (dd|mmm|yyyy): 12 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |              |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |              |
| 1        | 1        | 280      | 2000              | ✓ 2007               |                                    |     |     |      |  |  |  |  |          |  |  | Water for CW |
| 2        | 2        | 281      | 250               | ✓ 249                |                                    |     |     |      |  |  |  |  |          |  |  | NH4 water    |
| 3        | 3        | 282      | 30                | ✓                    | x                                  |     | x x | x x  |  |  |  |  |          |  |  |              |
| 4        | 4        | 283      | 5                 | /                    | x                                  | x   | x x | x x  |  |  |  |  |          |  |  |              |
| 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): MR

Bottom Depth: 2540 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1725 | 0925  |
| Bottom | 1757 |       |
| End    | 1834 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 44.66  | N |
| Lon: | 127° 40 15 | W |

Start

▼

|      |            |   |
|------|------------|---|
| Lat: | 48° 44.66  | N |
| Lon: | 127° 40.15 | W |

Bottom

▼

|      |            |   |
|------|------------|---|
| Lat: | 48° 44.66  | N |
| Lon: | 127° 40.15 | W |

End

|      |            |   |
|------|------------|---|
| Lat: | 48° 44.66  | N |
| Lon: | 127° 40.15 | W |

Extra comments:

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P7 Event #: 29 Ship: Tully UTC Date (dd|mmm|yyyy): 12|2|2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |
| 1        | 1        | 284      | 30                | ✓ 30                 | x                                  |     | x x | x x  |  |  |  |  |  |  |          |
| 2        | 2        | 285      | 5                 | ✓ 5                  | x                                  | x   | x x | x x  |  |  |  |  |  |  |          |
| 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): 29

Bottom Depth: 2501 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2111 | 1311  |
| Bottom | 2144 |       |
| End    | 2216 |       |

Positional Information  
Start  
Lat: 48° 46.61' N  
Lon: 128° 10.05' W

Bottom  
Lat: 48° 46.60' N  
Lon: 128° 10.10' W

End  
Lat: 48° 46.61' N  
Lon: 128° 9.96' W

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P8 Event #: 30 Ship: Tully UTC Date (dd/mmm/yyyy): 13/2/2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |        |       |     |     |      |     |        |   | Comments |  |  |  |              |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--------|-------|-----|-----|------|-----|--------|---|----------|--|--|--|--------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut Fr | Nut C | pH  | Chl | HPLC |     | Céline |   |          |  |  |  |              |
| 1        |          | 286      | 2000              | ✓                    |                                    | x x | x x    | x     | x   |     |      |     |        |   |          |  |  |  |              |
| 2        |          | 287      | 1500              | ✓                    |                                    | x   | x      | x     | x   |     |      |     |        | x |          |  |  |  |              |
| 3        |          | 288      | 1250              | ✓                    |                                    | x   | x      | x x   | x x |     |      |     |        |   |          |  |  |  |              |
| 4        |          | 289      | 1000              | ✓                    | 1001                               | x   | x x    | x     | x   |     |      |     |        | x |          |  |  |  |              |
| 5        |          | 290      | 800               | ✓                    |                                    | x   | x      | x     | x   |     |      |     |        |   |          |  |  |  |              |
| 6        |          | 291      | 600               | ✓                    |                                    | x   |        | x     | x   |     |      |     |        | x |          |  |  |  |              |
| 7        |          | 292      | 400               | ✓                    |                                    | x   |        | x     | x   |     |      |     |        |   |          |  |  |  |              |
| 8        |          | 293      | 300               | ✓                    |                                    | x   |        | x     |     |     |      |     |        |   |          |  |  |  |              |
| 9        |          | 294      | 250               | ✓                    |                                    | x x |        | x     |     |     |      |     |        |   |          |  |  |  | DIDN'T CLOSE |
| 10       |          | 295      | 200               | ✓                    | 198                                | x   |        | x     |     |     |      |     |        | x |          |  |  |  |              |
| 11       |          | 296      | 175               | ✓                    |                                    | x   |        | x     |     |     |      |     |        |   |          |  |  |  |              |
| 12       |          | 297      | 150               | ✓                    |                                    | x   |        | x x   |     |     |      |     |        |   |          |  |  |  |              |
| 13       |          | 298      | 125               | ✓                    |                                    | x   |        | x     |     |     |      |     |        |   |          |  |  |  |              |
| 14       |          | 299      | 100               | ✓                    |                                    | x   |        | x     |     |     | x    |     |        | x |          |  |  |  |              |
| 15       |          | 300      | 75                | ✓                    |                                    | x   |        | x     |     |     | x    |     |        |   |          |  |  |  |              |
| 16       |          | 301      | 50                | ✓                    |                                    | x   |        | x     |     |     | x    |     |        |   |          |  |  |  |              |
| 17       |          | 302      | 25                | ✓                    |                                    | x x |        | x     |     |     | x    |     |        |   |          |  |  |  |              |
| 18       |          | 303      | 10                | ✓                    |                                    | x   |        | x     |     |     | x    |     |        |   |          |  |  |  |              |
| 19       |          | 304      | 5                 | ✓                    |                                    | x   | x      | x     |     |     | x    |     |        |   |          |  |  |  |              |
| 20       |          | 305      | 50                | ✓                    |                                    |     |        |       |     |     | x x  | x x |        |   |          |  |  |  |              |
| 21       |          | 306      | 20                | ✓                    |                                    |     |        |       |     |     | x x  | x x |        |   |          |  |  |  |              |
| 22       |          | 307      | 5                 | ✓                    |                                    |     |        |       |     |     | x x  | x x |        |   |          |  |  |  |              |
| 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                                                                                                                     |

|                     |      |   |
|---------------------|------|---|
| Bottom Depth:       | 3362 | m |
| Transmisso Cleaned: | Y    | N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0035 | 1635  |
| Bottom | 0109 |       |
| End    | 0203 |       |

|                        |                 |   |
|------------------------|-----------------|---|
| Positional Information |                 |   |
| Start                  | Lat: 48° 48.96  | N |
|                        | Lon: 128° 39.95 | W |

|        |                 |   |
|--------|-----------------|---|
| Bottom | Lat: 48° 48.95  | N |
|        | Lon: 128° 39.95 | W |

|     |                 |   |
|-----|-----------------|---|
| End | Lat: 48° 48.98  | N |
|     | Lon: 128° 40.07 | W |

|                                 |
|---------------------------------|
| Extra comments:                 |
| Firing out of order             |
| 1 - 16; 20; 17; 21; 18 - 19; 22 |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P9

Event #: 34

Ship: Tully

UTC Date (dd|mmm|yyyy): 13 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |             |          | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments                 |
|----------|----------|----------|-------------------|-------------|----------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--------------------------|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |                          |
| 1        | 2        | 308      | 50                | ✓           | 50       | x                                  |     | x x | x x  |  |  |  |  |  |  |                          |
| 2        | 3        | 309      | 5                 | ✓           | 5        | x                                  | x   | x x | x x  |  |  |  |  |  |  |                          |
| 3        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 4        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 5        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 6        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 7        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 8        |          |          |                   |             |          |                                    |     |     |      |  |  |  |  |  |  |                          |
| 9        | 1        | NA       | 2005              | ✓           | 2005     |                                    |     |     |      |  |  |  |  |  |  | ← Test fired<br>Ⓢ 2005 m |
| 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): DY                                                                                                         |

|                     |                                                            |   |
|---------------------|------------------------------------------------------------|---|
| Bottom Depth:       | 2514                                                       | m |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y <input type="radio"/> N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0620 | 2220  |
| Bottom | 0653 |       |
| End    | 0729 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 51.40 N      |
| Lon: 129 ° 10.00 W     |

|                   |
|-------------------|
| Bottom            |
| Lat: 48 ° 51.38 N |
| Lon: 129 ° 9.98 W |

|                    |
|--------------------|
| End                |
| Lat: 48 ° 51.34 N  |
| Lon: 129 ° 10.03 W |

|                 |
|-----------------|
| Extra comments: |
| 9-1-2           |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P10

Event #: 36

Ship: Tully

UTC Date (dd|mmm|yyyy): 13 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                         | Samples Taken / Sampler's Initials |     |     |      |    |    |   |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|-------------------------|------------------------------------|-----|-----|------|----|----|---|--|--|--|----------|--|--|
|          |          |          | Target Pressure   | Confirmed<br>✓ Pressure | Nut-F                              | Sal | Chl | HPLC |    | Cs |   |  |  |  |          |  |  |
| 1        | 1        | 310      | 300               | ✓                       | 200                                |     |     |      |    |    | x |  |  |  |          |  |  |
| 2        | 2        | 311      | 300               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 3        | 3        | 312      | 300               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 4        | 4        | 313      | 300               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 5        | 5        | 314      | 300               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 6        | 6        | 315      | 300               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 7        | 7        | 316      | 150               | ✓                       | 151                                |     |     |      |    |    | x |  |  |  |          |  |  |
| 8        | 8        | 317      | 150               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 9        | 9        | 318      | 150               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 10       | 10       | 319      | 150               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 11       | 11       | 320      | 150               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 12       | 12       | 321      | 150               | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 13       | 13       | 322      | 50                | ✓                       | 51                                 |     |     |      |    |    | x |  |  |  |          |  |  |
| 14       | 14       | 323      | 50                | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 15       | 15       | 324      | 50                | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 16       | 16       | 325      | 50                | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 17       | 17       | 326      | 50                | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 18       | 18       | 327      | 50                | ✓                       | ↓                                  | x   |     | xx   | xx |    | x |  |  |  |          |  |  |
| 19       | 19       | 328      | 5                 | ✓                       | 5                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 20       | 20       | 329      | 5                 | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 21       | 21       | 330      | 5                 | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 22       | 22       | 331      | 5                 | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 23       | 23       | 332      | 5                 | ✓                       | ↓                                  |     |     |      |    |    | x |  |  |  |          |  |  |
| 24       | 24       | 333      | 5                 | ✓                       | ↓                                  | x   | x   | xx   | xx |    | x |  |  |  |          |  |  |

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| 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:       | 2640 m                                                             |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 10:21 | 2:21  |
| Bottom | 10:54 |       |
| End    | 11:32 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 53 62 N      |
| Lon: 129 ° 40 04 W     |

|                    |
|--------------------|
| Bottom             |
| Lat: 48 ° 53 62 N  |
| Lon: 129 ° 40 08 W |

|                    |
|--------------------|
| End                |
| Lat: 48 ° 53 63 N  |
| Lon: 129 ° 40 07 W |

|                            |
|----------------------------|
| Extra comments:            |
| Cs Sampling + IOS Sampling |

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P11 Event #: 37 Ship: Tully UTC Date (dd|mmm|yyyy): 13 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |  |
| 1        | 1        | 334      | 50                | ✓ 50                 | x                                  |     | x x | x x  |  |  |  |  |  |  |          |  |
| 2        | 2        | 335      | 5                 | ✓                    | x                                  | x   | x x | x x  |  |  |  |  |  |  |          |  |
| 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: 2752 m  
 Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 14 11 | 06 11 |
| Bottom | 14 44 |       |
| End    | 15 16 |       |

Positional Information

|       |                    |
|-------|--------------------|
| Start | Lat: 48 ° 56 01 N  |
|       | Lon: 130 ° 10 07 W |

Bottom

|  |                    |
|--|--------------------|
|  | Lat: 48 ° 56 02 N  |
|  | Lon: 130 ° 10 04 W |

End

|  |                    |
|--|--------------------|
|  | Lat: 48 ° 56 03 N  |
|  | Lon: 130 ° 10 06 W |

Extra comments:



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P12 Event #: 38 Ship: Tully UTC Date (dd|mmm|yyyy): 13 | 02 | 15

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |         |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|---------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM                                 | TM      |  |  |  |  |  |  |  |  |          |
|          |          |          |                   |                                                        | filt                               | un-filt |  |  |  |  |  |  |  |  |          |
| 1        |          | 336      | 40                | <input checked="" type="checkbox"/>                    | x                                  | x       |  |  |  |  |  |  |  |  |          |
| 2        |          | 337      | 20                | <input checked="" type="checkbox"/>                    | x                                  | x       |  |  |  |  |  |  |  |  |          |
| 3        |          | 338      | 10                | <input checked="" type="checkbox"/>                    | 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: TM PUMP  
ROS TRM X-Niskin other?  
Watchkeeper(s): K.S. M.B.

Bottom Depth: 3453 m  
Transmisso Cleaned: Y / N

| Time   | UTC          | Local        |
|--------|--------------|--------------|
| Start  | <u>18:02</u> | <u>10:02</u> |
| Bottom | <u>18:05</u> | <u>10:05</u> |
| End    | <u>18:53</u> | <u>10:53</u> |

Positional Information  
Start  
Lat: 48° 58.1467 N  
Lon: 130° 39.9127 W

Bottom  
Lat: 48° 58.1470 N  
Lon: 130° 39.9068 W

End  
Lat: 48° 58.1467 N  
Lon: 130° 39.9111 W

Extra comments:  
TM pumping

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P12

Event #: 39

Ship: Tully

UTC Date (dd|mmm|yyyy): 13 | 07 | 15

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |    |     |        |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|----|-----|--------|--|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM                                 | TM | Sal | Nut-Fr |  |  |  |  |          |  |  |  |
| 1        |          | 339      | 200               | 150                                                    | x                                  | x  | x   | x      |  |  |  |  |          |  |  |  |
| 2        |          | 340      | 150               | 125                                                    | x                                  | x  |     |        |  |  |  |  |          |  |  |  |
| 3        |          | 341      | 100               | 75                                                     | xx                                 | xx |     |        |  |  |  |  |          |  |  |  |
| 4        |          | 342      | 75                | 50                                                     | x                                  | x  |     |        |  |  |  |  |          |  |  |  |
| 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): KS 14.13

Bottom Depth: 3753 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1905 |       |
| Bottom | 1926 |       |
| End    | 2020 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 58.15  | N |
| Lon: | 130 ° 37.91 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 58.14  | N |
| Lon: | 130 ° 39.91 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 57.13  | N |
| Lon: | 130 ° 39.70 | W |

Extra comments:  
TM Shallow Go-flos  
Refine 125m  
Winch = Broken

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P12

Event #: 40

Ship: Tully

UTC Date (dd|mmm|yyyy): 13 FEB 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |       |     |     |  |  |  | Comments |           |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|-------|-----|-----|--|--|--|----------|-----------|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC   | pH  |     |  |  |  | Sam UBC  | Gases UBC |  |  |
|          |          |          |                   |                      | 24                                 | 24  | NR    | NR    | KS/MB | GLW |     |  |  |  |          |           |  |  |
| 1        |          | 343      | Bot-10            | ✓                    | 3271                               | x   |       | x     | x     | x   |     |  |  |  | x        | XXXX      |  |  |
| 2        |          | 344      | 3000              | ✓                    |                                    | x   | xx    | x     | x     | xx  | x   |  |  |  |          |           |  |  |
| 3        |          | 345      | 3000              | ✓                    |                                    | x   | x     | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 4        |          | 346      | 2500              | ✓                    |                                    | xx  | xx    | x     | x     | x   | xxx |  |  |  |          |           |  |  |
| 5        |          | 347      | 2000              | ✓                    |                                    | x   | x     | xx    | xx    | x   | x   |  |  |  | x        | XXXX      |  |  |
| 6        |          | 348      | 1500              | ✓                    |                                    | x   | x     | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 7        |          | 349      | 1250              | ✓                    |                                    | x   | x     | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 8        |          | 350      | 1000              | ✓                    |                                    | xx  | xx    | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 9        |          | 351      | 800               | ✓                    |                                    | x   |       | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 10       |          | 352      | 600               | ✓                    |                                    | x   |       | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 11       |          | 353      | 400               | ✓                    |                                    | x   |       | x     | x     | x   | x   |  |  |  | x        | XXXX      |  |  |
| 12       |          | 354      | 300               | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 13       |          | 355      | 250               | ✓                    |                                    | xx  |       | x     |       | x   | x   |  |  |  |          |           |  |  |
| 14       |          | 356      | 200               | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 15       |          | 357      | 175               | ✓                    |                                    | x   |       | x     |       | x   | xxx |  |  |  |          |           |  |  |
| 16       |          | 358      | 150               | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 17       |          | 359      | 125               | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  |          |           |  |  |
| 18       |          | 360      | 100               | ✓                    |                                    | x   |       | xx    |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 19       |          | 361      | 75                | ✓                    |                                    | xx  |       | x     |       | x   | x   |  |  |  |          |           |  |  |
| 20       |          | 362      | 50                | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 21       |          | 363      | 25                | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 22       |          | 364      | 10                | ✓                    |                                    | x   |       | x     |       | x   | x   |  |  |  | x        | XXXX      |  |  |
| 23       |          | 365      | 5                 | ✓                    |                                    | x   | x     | x     |       | x   | x   |  |  |  |          |           |  |  |
| 24       |          |          |                   |                      |                                    |     |       |       |       |     |     |  |  |  |          |           |  |  |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 3232    | m |
| Transmisso Cleaned: | (Y) / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 2132 | 1332  |
| Bottom | 2226 |       |
| End    | 2338 |       |

|                        |
|------------------------|
| Positional Information |
| Lat: 48 ° 58.18 N      |
| Lon: 130 ° 39.86 W     |

Start

|                    |
|--------------------|
| Lat: 48 ° 58.21 N  |
| Lon: 130 ° 39.86 W |

Bottom

|                    |
|--------------------|
| Lat: 48 ° 58.21 N  |
| Lon: 130 ° 39.99 W |

End

Extra comments:

Deep cast

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P12

Event #: 41

Ship: Tully

UTC Date (dd|mmm|yyyy): 14 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |       |    |     |      |    | Comments |  |        |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|-------|----|-----|------|----|----------|--|--------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-F |    | Chl | HPLC |    | Céline   |  |        |  |
|          |          |          |                   |                      | MR                                 | IMA  | d    | MA    | MR | MR  | LF   | MR |          |  | PAR ON |  |
| 1        |          | 370      | 300               | ✓ 300                | x                                  |      |      | x     |    |     |      |    |          |  |        |  |
| 2        |          | 371      | 200               | ✓                    | x                                  | x    | x    | x     |    |     |      |    |          |  |        |  |
| 3        |          | 372      | 175               | ✓                    | x                                  | x    | x    | x     |    |     |      |    |          |  |        |  |
| 4        |          | 373      | 100               | ✓                    | x                                  | x    | x    | x     |    | x   |      |    |          |  |        |  |
| 5        |          | 374      | 75                | ✓                    | x                                  |      |      | x     |    | x   |      |    |          |  |        |  |
| 6        |          | 375      | 50                | ✓                    | x                                  |      |      | x     |    | x x | x x  |    |          |  |        |  |
| 7        |          | 376      | 40                | ✓                    | x                                  |      |      | x     |    | x   |      |    |          |  |        |  |
| 8        |          | 377      | 30                | ✓                    | x                                  |      |      | x     |    | x   |      |    |          |  |        |  |
| 9        |          | 378      | 25                | ✓                    | x                                  |      |      | x     |    | x   |      |    |          |  |        |  |
| 10       |          | 379      | 20                | ✓                    |                                    | x x  | x x  | x x   | x  | x x | x x  |    |          |  |        |  |
| 11       |          | 380      | 15                | ✓                    | x                                  |      |      | x     |    | x   |      |    |          |  |        |  |
| 12       |          | 381      | 10                | ✓                    | x                                  |      |      | x x   |    | x   |      |    |          |  |        |  |
| 13       |          | 382      | 5                 | ✓                    | x                                  | x    | x    | x     |    | x x | x x  |    |          |  |        |  |
| 14       |          | 383      | 0                 |                      | x                                  | x    | x    | x     |    | x   |      |    |          |  |        |  |
| 15       |          | 384      | 200               | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 16       |          | 385      | 175               | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 17       |          | 386      | 150               | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 18       |          | 387      | 125               | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 19       |          | 388      | 100               | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 20       |          | 389      | 75                | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 21       |          | 390      | 50                | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 22       |          | 391      | 25                | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 23       |          | 392      | 10                | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |
| 24       |          | 393      | 5                 | ✓                    |                                    |      |      |       |    |     |      |    | x        |  |        |  |

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

Bottom Depth: 3232 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0101 | 1701  |
| Bottom | 0107 |       |
| End    | 0125 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.21  | N |
| Lon: | 130° 39.99 | W |

Start

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.21  | N |
| Lon: | 130° 39.99 | W |

Bottom

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.21  | N |
| Lon: | 130° 39.99 | W |

End

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.21  | N |
| Lon: | 130° 39.99 | W |

Extra comments:  
DMS cast - OUT-OF-ORDER  
1 - 2; 15 - 16; 3; 17 - 19; 4 - 5; 20-21;  
6 - 9; 22; 10 - 12; 23 - 24; 13- 14

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P12

Event #: 42

Ship: Tully

UTC Date (dd|mmm|yyyy): 14 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation  |                                                        |  | Samples Taken / Sampler's Initials |            |     |        |  |  |  |  | Comments       |  |  |  |
|----------|----------|----------|--------------------|--------------------------------------------------------|--|------------------------------------|------------|-----|--------|--|--|--|--|----------------|--|--|--|
|          |          |          | Target Pressure    | Confirmed <input checked="" type="checkbox"/> Pressure |  | TM filt                            | TM un-filt | Sal | Nut-Fr |  |  |  |  |                |  |  |  |
| 1        |          | 366      | 800                |                                                        |  | x                                  | x          | x   | x      |  |  |  |  | went very well |  |  |  |
| 2        |          | 367      | <del>800</del> 400 |                                                        |  | x                                  | x          |     |        |  |  |  |  |                |  |  |  |
| 3        |          | 368      | <del>400</del> 200 |                                                        |  | xx                                 | xx         |     |        |  |  |  |  |                |  |  |  |
| 4        |          | 369      | <del>200</del> 200 |                                                        |  | x                                  | x          |     |        |  |  |  |  |                |  |  |  |
| 5        |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 6        |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 7        |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 8        |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 9        |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 10       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 11       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 12       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 13       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 14       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 15       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 16       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 17       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 18       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 19       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 20       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 21       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 22       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 23       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |
| 24       |          |          |                    |                                                        |  |                                    |            |     |        |  |  |  |  |                |  |  |  |

|                 |           |     |                                            |        |
|-----------------|-----------|-----|--------------------------------------------|--------|
| Profile type:   | ROS       | TRM | <input checked="" type="checkbox"/> Niskin | other? |
| Watchkeeper(s): | K.S. R.N. |     |                                            |        |

|                     |      |                                       |
|---------------------|------|---------------------------------------|
| Bottom Depth:       | 3233 | m                                     |
| Transmisso Cleaned: | Y    | <input checked="" type="checkbox"/> N |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 02:45 | 5:45  |
| Bottom | 02:10 | 6:10  |
| End    | 02:42 | 6:42  |

|                        |               |
|------------------------|---------------|
| Positional Information |               |
| Start                  |               |
| Lat:                   | 48 ° 58 20 N  |
| Lon:                   | 130 ° 39 99 W |

|        |               |
|--------|---------------|
| Bottom |               |
| Lat:   | 48 ° 58 20 N  |
| Lon:   | 130 ° 39 99 W |

|      |               |
|------|---------------|
| End  |               |
| Lat: | 48 ° 58 21 N  |
| Lon: | 130 ° 39 99 W |

|                 |
|-----------------|
| Extra comments: |
| TM Deep Go-flos |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P12 Event #: 46 Ship: Tully UTC Date (dd|mmm|yyyy): 14 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |   |        |  |  |  |  |  |  | Comments         |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|---|--------|--|--|--|--|--|--|------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | Sam |   | Céline |  |  |  |  |  |  |                  |
| 1        |          | 394      | Bot-10            | ✓                    | 3273                               |     |   | x      |  |  |  |  |  |  |                  |
| 2        |          | 395      | 3000              | ✓                    | 3000                               |     |   | x      |  |  |  |  |  |  |                  |
| 3        |          | 396      | 2500              | ✓                    | 2501                               |     |   | x      |  |  |  |  |  |  |                  |
| 4        |          | 397      | 2000              | ✓                    |                                    |     |   | x      |  |  |  |  |  |  |                  |
| 5        |          | 398      | 1500              | ✓                    | 1502                               |     |   | x      |  |  |  |  |  |  |                  |
| 6        |          | 399      | 1250              | ✓                    | 1250                               |     |   | x      |  |  |  |  |  |  |                  |
| 7        |          | 400      | 1000              | ✓                    | 1000                               |     |   | x      |  |  |  |  |  |  | Bottom cap leaky |
| 8        |          | 401      | 800               | ✓                    | 800                                |     |   | x      |  |  |  |  |  |  |                  |
| 9        |          | 402      | 600               | ✓                    |                                    |     |   | x      |  |  |  |  |  |  |                  |
| 10       |          | 403      | 400               | ✓                    | 400                                |     |   | x      |  |  |  |  |  |  |                  |
| 11       |          | 404      | 300               | ✓                    | 300                                |     |   | x      |  |  |  |  |  |  |                  |
| 12       |          | 405      | 250               | ✓                    | 249                                |     |   | x      |  |  |  |  |  |  |                  |
| 13       |          | 406      | 2000              | ✓                    |                                    |     | x |        |  |  |  |  |  |  |                  |
| 14       |          | 407      | 2000              | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 15       |          | 408      | 2000              | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 16       |          | 409      | 1000              | ✓                    |                                    |     | x |        |  |  |  |  |  |  |                  |
| 17       |          | 410      | 1000              | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 18       |          | 411      | 1000              | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 19       |          | 412      | 500               | ✓                    |                                    |     | x |        |  |  |  |  |  |  |                  |
| 20       |          | 413      | 500               | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 21       |          | 414      | 500               | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 22       |          | 415      | 10                | ✓                    |                                    |     | x |        |  |  |  |  |  |  |                  |
| 23       |          | 416      | 10                | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |
| 24       |          | 417      | 10                | ✓                    |                                    |     |   |        |  |  |  |  |  |  |                  |

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

|                     |         |
|---------------------|---------|
| Bottom Depth:       | 3234 m  |
| Transmisso Cleaned: | (Y) / N |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0445 | 2045  |
| Bottom | 0541 |       |
| End    | 0650 |       |

|                        |             |   |
|------------------------|-------------|---|
| Positional Information |             |   |
| Lat:                   | 48 ° 58.21  | N |
| Lon:                   | 130 ° 39.98 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 58.21  | N |
| Lon: | 130 ° 39.98 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 58.21  | N |
| Lon: | 130 ° 39.99 | W |

|                                        |
|----------------------------------------|
| Extra comments:                        |
| Sam + Céline                           |
| OUT-OF-ORDER                           |
| 1 - 4; 13 - 15; 5 - 7; 16 - 18; 8 - 9; |
| 19 - 21; 10 - 12; 22 - 24              |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P13 Event #: 48 Ship: Tully UTC Date (dd|mmm|yyyy): 11 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |  |  |  | Comments |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|--|--|--|----------|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |     |  |  |  |          |  |  |  |  |
| 1        | 1        | 418      | 50                | ✓                  | 51                                 | x   |     | x x  | x x |  |  |  |          |  |  |  |  |
| 2        | 2        | 419      | 5                 | ✓                  | 5                                  | x   | x   | x x  | x x |  |  |  |          |  |  |  |  |
| 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: 3033 m  
Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 11 26 | 03:26 |
| Bottom | 11 59 |       |
| End    | 12 31 |       |

Positional Information  
Start  
Lat: 49 ° 2 60 N  
Lon: 131 ° 39 92 W

Bottom  
Lat: 49 ° 2 59 N  
Lon: 131 ° 39 93 W

End  
Lat: 49 ° 2 59 N  
Lon: 131 ° 39 98 W

Extra comments:



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P14 Event #: 49 Ship: Tully UTC Date (dd|mmm|yyyy): 14 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |    |   |  |  |  | Comments |  |  |                     |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|----|---|--|--|--|----------|--|--|---------------------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |     | Nd |   |  |  |  |          |  |  |                     |
|          |          |          |                   | ✓                  |                                    |     |     |      |     |    |   |  |  |  |          |  |  |                     |
| 1        | 1        | 420      | Bot-10            | ✓                  | 3359                               |     |     |      |     |    | x |  |  |  |          |  |  | p:3358 S:3316 all 8 |
| 2        | 2        | 421      | Bot-10            | ✓                  | 3359                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 3        | 3        | 422      | 3000              | ✓                  | 3000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 4        | 4        | 423      | 3000              | ✓                  | 3000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 5        | 5        | 424      | 2500              | ✓                  | 2500                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 6        | 6        | 425      | 2500              | ✓                  | 2500                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 7        | 7        | 426      | 2000              | ✓                  | 2000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 8        | 8        | 427      | 2000              | ✓                  | 2000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 9        | 9        | 428      | 1500              | ✓                  | 1500                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 10       | 10       | 429      | 1500              | ✓                  | 1500                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 11       | 11       | 430      | 1000              | ✓                  | 1000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 12       | 12       | 431      | 1000              | ✓                  | 1000                               |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 13       | 13       | 432      | 800               | ✓                  | 800                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 14       | 14       | 433      | 800               | ✓                  | 800                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 15       | 15       | 434      | 600               | ✓                  | 600                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 16       | 16       | 435      | 600               | ✓                  | 600                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 17       | 17       | 436      | 400               | ✓                  | 400                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 18       | 18       | 437      | 400               | ✓                  | 400                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 19       | 19       | 438      | 200               | ✓                  | 200                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 20       | 20       | 439      | 200               | ✓                  | 200                                |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 21       | 21       | 440      | 50                | ✓                  | 50                                 |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 22       | 22       | 441      | 50                | ✓                  | 50                                 |     |     |      |     |    | x |  |  |  |          |  |  |                     |
| 23       | 23       | 442      | 50                | ✓                  | 50                                 | x   |     | x x  | x x |    |   |  |  |  |          |  |  |                     |
| 24       | 24       | 443      | 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): MB                                                                                                                     |

|                     |                                                                    |   |
|---------------------|--------------------------------------------------------------------|---|
| Bottom Depth:       | 3317                                                               | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1713 |       |
| Bottom | 1809 |       |
| End    | 1912 |       |

|                        |          |    |   |
|------------------------|----------|----|---|
| Positional Information |          |    |   |
| Lat:                   | 49 ° 7   | 40 | N |
| Lon:                   | 132 ° 39 | 94 | W |

|      |          |    |   |
|------|----------|----|---|
| Lat: | 49 ° 7   | 40 | N |
| Lon: | 132 ° 39 | 94 | W |

|      |          |    |   |
|------|----------|----|---|
| Lat: | 49 ° 7   | 40 | N |
| Lon: | 132 ° 39 | 94 | W |

|                 |
|-----------------|
| Extra comments: |
| Cast + Maureen  |
| + IOS Sampling  |

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P15 Event #: 51 Ship: Tully UTC Date (dd|mmm|yyyy): 14 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |
| 1        | 1        | 444      | 50                | ✓ 50               | x                                  |     | x x | x x  |  |  |  |  |  |  |          |
| 2        | 2        | 445      | 5                 | ✓                  | x                                  | x   | x x | x x  |  |  |  |  |  |  |          |
| 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):

Bottom Depth: 3406 m  
 Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2327 | 1527  |
| Bottom | 2359 |       |
| End    | 0036 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 12.00  | N |
| Lon: | 133 ° 40.00 | W |

Start

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 12.01  | N |
| Lon: | 133 ° 40.07 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 12.02  | N |
| Lon: | 133 ° 40.01 | W |

End

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P16

Event #: 52

Ship: Tully

UTC Date (dd|mmm|yyyy): 15 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |    |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|----|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure |                                    | Cs |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 446      | 150               | ✓                  | 149                                |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 447      | 150               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 448      | 150               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 449      | 150               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 450      | 150               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 451      | 150               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 452      | 100               | ✓                  | 100                                |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 453      | 100               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 454      | 100               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 455      | 100               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 456      | 100               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 457      | 100               | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 458      | 50                | ✓                  | 50                                 |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 459      | 50                | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 460      | 50                | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 461      | 50                | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 462      | 50                | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 463      | 50                | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 464      | 0                 | ✓                  | 2                                  |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 465      | 0                 | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 466      | 0                 | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 467      | 0                 | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 468      | 0                 | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 469      | 0                 | ✓                  |                                    |    | x |  |  |  |  |  |  |  |  |  |  |          |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 3200    | m |
| Transmisso Cleaned: | (Y) / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0504 | 2104  |
| Bottom | 508  |       |
| End    | 0515 |       |

|                        |                   |  |
|------------------------|-------------------|--|
| Positional Information |                   |  |
| Start                  | Lat: 49° 17.00 N  |  |
|                        | Lon: 134° 40.02 W |  |

|        |                   |  |
|--------|-------------------|--|
| Bottom | Lat: 49° 17.00 N  |  |
|        | Lon: 134° 40.02 W |  |

|     |                   |  |
|-----|-------------------|--|
| End | Lat: 49° 17.00 N  |  |
|     | Lon: 134° 40.02 W |  |

|                     |
|---------------------|
| Extra comments:     |
| Shallow Cesium cast |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P16

Event #: 53

Ship: Tully

UTC Date (dd|mmm|yyyy): 15 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |        |  |       |      |  | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|--------|--|-------|------|--|----------|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-F  |  | Chl   | HPLC |  |          |  |  |  |  |  |
|          |          |          |                   |                      | MR                                 | t MA | d MA | Celine |  | Ludgy | Glen |  |          |  |  |  |  |  |
| 1        |          | 470      | 300               | ✓ 300                | x                                  |      |      | x      |  |       |      |  |          |  |  |  |  |  |
| 2        |          | 471      | 200               | ✓ 201                | x                                  | x    | x    | x      |  |       |      |  |          |  |  |  |  |  |
| 3        |          | 472      | 175               | ✓ 176                | x                                  | x    | x    | x      |  |       |      |  |          |  |  |  |  |  |
| 4        |          | 473      | 100               | ✓ 100                | x                                  | x    | x    | x      |  | x     |      |  |          |  |  |  |  |  |
| 5        |          | 474      | 75                | ✓ 75                 | x                                  |      |      | x      |  | x     |      |  |          |  |  |  |  |  |
| 6        |          | 475      | 50                | ✓ 50                 | x                                  |      |      | x      |  | xx    | xx   |  |          |  |  |  |  |  |
| 7        |          | 476      | 40                | ✓ 40                 | x                                  |      |      | x      |  | x     |      |  |          |  |  |  |  |  |
| 8        |          | 477      | 30                | ✓ 30                 | x                                  |      |      | x      |  | x     |      |  |          |  |  |  |  |  |
| 9        |          | 478      | 25                | ✓ 25                 | x                                  |      |      | x      |  | x     |      |  |          |  |  |  |  |  |
| 10       |          | 479      | 20                | ✓ 21                 | xx                                 | xx   | xx   | x      |  | xx    | xx   |  |          |  |  |  |  |  |
| 11       |          | 480      | 15                | ✓ 14                 | x                                  |      |      | x      |  | x     |      |  |          |  |  |  |  |  |
| 12       |          | 481      | 10                | ✓ 10                 | x                                  |      |      | xx     |  | x     |      |  |          |  |  |  |  |  |
| 13       |          | 482      | 5                 | ✓ 5                  | x                                  | x    | x    | x      |  | xx    | xx   |  |          |  |  |  |  |  |
| 14       |          | 483      | 0                 | ✓ 1                  | 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

Bottom Depth: 3200 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0538 | 2138  |
| Bottom | 0544 |       |
| End    | 0602 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.01 | W |

Start

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.01 | W |

Bottom

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.01 | W |

End

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.01 | W |

Extra comments:  
DMS cast

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P16 Event #: 54 Ship: Tully UTC Date (dd|mmm|yyyy): 15 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |     |    |     |  |       |     | Comments |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|-----|----|-----|--|-------|-----|----------|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC | pH |     |  | Gases | UBC | Céline   |  |  |  |  |
|          |          |          |                   |                      | MBK                                | K   | MB    | MB    | KJ  | CC |     |  |       |     |          |  |  |  |  |
| 1        |          | 484      | Bot-10            | ✓                    | 3683                               | x   |       | x     | x   | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 2        |          | 485      | 3500              | ✓                    | 3500                               | x   | x     | x     | x   | xx | x   |  |       |     |          |  |  |  |  |
| 3        |          | 486      | 3500              | ✓                    | 3500                               | x   | x     | x     | x   | x  | xxx |  |       |     |          |  |  |  |  |
| 4        |          | 487      | 3000              | ✓                    | 2999                               | x   | xx    | x     | x   | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 5        |          | 488      | 2500              | ✓                    | 2499                               | xx  | x     | x     | x   | x  | x   |  |       |     |          |  |  |  |  |
| 6        |          | 489      | 2000              | ✓                    | 2000                               | x   | xx    | x     | x   | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 7        |          | 490      | 1500              | ✓                    | 1500                               | x   | x     | x     | x   | x  | x   |  | xxxx  | x   | x        |  |  |  |  |
| 8        |          | 491      | 1250              | ✓                    | 1250                               | x   | xx    | xx    | xx  | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 9        |          | 492      | 1000              | ✓                    | 1000                               | x   | x     | x     | x   | x  | x   |  | xxxx  | x   | x        |  |  |  |  |
| 10       |          | 493      | 800               | ✓                    | 800                                | x   |       | x     | x   | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 11       |          | 494      | 600               | ✓                    | 600                                | x   |       | x     | x   | x  | x   |  | xxxx  | x   | x        |  |  |  |  |
| 12       |          | 495      | 400               | ✓                    | 400                                | x   |       | x     | x   | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 13       |          | 496      | 300               | ✓                    | 300                                | xx  |       | x     |     | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 14       |          | 497      | 250               | ✓                    | 250                                | x   |       | x     |     | x  | xxx |  |       |     |          |  |  |  |  |
| 15       |          | 498      | 200               | ✓                    | 200                                | x   |       | x     |     | x  | x   |  | xxxx  | x   | x        |  |  |  |  |
| 16       |          | 499      | 175               | ✓                    | 175                                | xx  |       | x     |     | x  | x   |  |       |     |          |  |  |  |  |
| 17       |          | 500      | 150               | ✓                    | 150                                | x   |       | x     |     | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 18       |          | 501      | 125               | ✓                    | 125                                | x   |       | x     |     | x  | x   |  |       |     |          |  |  |  |  |
| 19       |          | 502      | 100               | ✓                    | 100                                | x   |       | x     |     | x  | x   |  | xxxx  | x   | x        |  |  |  |  |
| 20       |          | 503      | 75                | ✓                    | 75                                 | xx  |       | x     |     | x  | x   |  |       |     |          |  |  |  |  |
| 21       |          | 504      | 50                | ✓                    | 50                                 | x   |       | xx    |     | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 22       |          | 505      | 25                | ✓                    | 25                                 | x   |       | x     |     | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 23       |          | 506      | 10                | ✓                    | 10                                 | x   |       | x     |     | x  | x   |  | xxxx  | x   |          |  |  |  |  |
| 24       |          | 507      | 5                 | ✓                    | 5                                  | x   | x     | x     |     | x  | x   |  |       |     |          |  |  |  |  |

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

Bottom Depth: 2320 3683 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0632 | 2232  |
| Bottom | 0733 |       |
| End    | 0853 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.01  | N |
| Lon: | 134 ° 40.00 | W |

Start

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.01  | N |
| Lon: | 134 ° 40.01 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.01  | N |
| Lon: | 134 ° 40.01 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 17.01  | N |
| Lon: | 134 ° 40.01 | W |

Extra comments:  
Deep cast

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P16 Event #: 56 Ship: Tully UTC Date (dd|mmm|yyyy): 15 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                               |          | Samples Taken / Sampler's Initials |    |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-----------------------------------------------|----------|------------------------------------|----|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> | Pressure | TM                                 | TM |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 508      | 40                |                                               |          | x                                  | x  |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 509      | 20                |                                               |          | xx                                 | xx |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 510      | 10                |                                               |          | 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: TM Pump  
ROS TRM X-Niskin (other?)  
Watchkeeper(s): KS

Bottom Depth: 3633 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1014 |       |
| Bottom | 1030 |       |
| End    | 1126 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.00 | W |

Start

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

Bottom

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

End

|      |            |   |
|------|------------|---|
| Lat: | 49° 17.01  | N |
| Lon: | 134° 40.01 | W |

Extra comments:  
TM pumping

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P16 Event #: 57 Ship: Tully UTC Date (dd mmm yyyy): 15 Oct 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |            |     |        |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|------------|-----|--------|--|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM filt                            | TM un-filt | Sal | Nut-Fr |  |  |  |  |          |  |  |  |
| 1        |          | 511      | 150               |                                                        | x                                  | x          | x   | x      |  |  |  |  |          |  |  |  |
| 2        |          | 512      | 125               |                                                        | xx                                 | xx         |     |        |  |  |  |  |          |  |  |  |
| 3        |          | 513      | 75                |                                                        | x                                  | x          |     |        |  |  |  |  |          |  |  |  |
| 4        |          | 514      | 50                |                                                        | x                                  | x          |     |        |  |  |  |  |          |  |  |  |
| 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): K.S.

Bottom Depth: 3632 m  
Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 11:34 |       |
| Bottom |       |       |
| End    | 12:05 |       |

Positional Information  
Start  
Lat: 49 ° 17 . 01 N  
Lon: 134 ° 40 . 01 W

Bottom  
Lat: ° N  
Lon: ° W

End  
Lat: 49 ° 17 . 01 N  
Lon: 134 ° 40 . 01 W

Extra comments:  
TM Shallow Go-flos



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P16

Event #: 59

Ship: Tully

UTC Date (dd mmm yyyy): 15 02 15

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |         |     |        | Comments |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|---------|-----|--------|----------|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | TM                                 | TM      | Sal | Nut-Fr |          |  |  |  |  |  |  |  |  |
|          |          |          |                   |                    | filt                               | un-filt |     |        |          |  |  |  |  |  |  |  |  |
| 1        |          | 515      | 800               |                    | x                                  | x       | x   | x      |          |  |  |  |  |  |  |  |  |
| 2        |          | 516      | 600               |                    | xx                                 | xx      |     |        |          |  |  |  |  |  |  |  |  |
| 3        |          | 517      | 400               |                    | x                                  | x       |     |        |          |  |  |  |  |  |  |  |  |
| 4        |          | 518      | 200               |                    | x                                  | x       |     |        |          |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |         |     |        |          |  |  |  |  |  |  |  |  |

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

|                     |      |   |
|---------------------|------|---|
| Bottom Depth:       | 3633 | m |
| Transmisso Cleaned: | Y    | N |

|        |       |       |
|--------|-------|-------|
| Time   | UTC   | Local |
| Start  | 13:19 | 0519  |
| Bottom | 13:50 |       |
| End    | 14:27 |       |

|                        |                    |
|------------------------|--------------------|
| Positional Information |                    |
| Start                  | Lat: 49 ° 17.01 N  |
|                        | Lon: 134 ° 40.01 W |

|        |                    |
|--------|--------------------|
| Bottom | Lat: 49 ° 17.01 N  |
|        | Lon: 134 ° 40.01 W |

|     |                    |
|-----|--------------------|
| End | Lat: 49 ° 17.01 N  |
|     | Lon: 134 ° 40.01 W |

Extra comments:  
TM Deep Go-flos



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P16

Event #: 60

Ship: Tully

UTC Date (dd|mmm|yyyy): 15 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cs                                 |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 519      | 500               | ✓                  | 500                                |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 520      | 500               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 521      | 500               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 522      | 500               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 523      | 500               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 524      | 500               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 525      | 400               | ✓                  | 400                                |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 526      | 400               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 527      | 400               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 528      | 400               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 529      | 400               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 530      | 400               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 531      | 300               | ✓                  | 300                                |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 532      | 300               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 533      | 300               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 534      | 300               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 535      | 300               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 536      | 300               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 537      | 200               | ✓                  | 200                                |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 538      | 200               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 539      | 200               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 540      | 200               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 541      | 200               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 542      | 200               | ✓                  |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |

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

|                     |                                                            |   |
|---------------------|------------------------------------------------------------|---|
| Bottom Depth:       | 3633                                                       | m |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y <input type="radio"/> N |   |

|        |       |       |
|--------|-------|-------|
| Time   | UTC   | Local |
| Start  | 14:35 | 06:35 |
| Bottom | 14:43 |       |
| End    | 14:55 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 17 01 N      |
| Lon: 134 ° 40 01 W     |

|                    |
|--------------------|
| Bottom             |
| Lat: 49 ° 17 01 N  |
| Lon: 134 ° 40 01 W |

|                    |
|--------------------|
| End                |
| Lat: 49 ° 17 01 N  |
| Lon: 134 ° 40 01 W |

|                  |
|------------------|
| Extra comments:  |
| Deep Cesium cast |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P17

Event #: 63

Ship: Tully

UTC Date (dd|mmm|yyyy): 15 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |    |    |   |  |  |  | Comments |  |                                       |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|----|----|---|--|--|--|----------|--|---------------------------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC |    | Nd |   |  |  |  |          |  |                                       |
| 1        | 1        | 543      | Bot-10            | ✓                    | 3763                               |     |     |      |    |    | x |  |  |  |          |  | P = 3763 D = 3698<br>S = 3701 A = 9.5 |
| 2        | 2        | 544      | Bot-10            | ✓                    | 3763                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 3        | 3        | 545      | 3000              | ✓                    | 3000                               |     |     |      |    |    | x |  |  |  |          |  | paused @ 3125<br>steering trouble     |
| 4        | 4        | 546      | 3000              | ✓                    | 3000                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 5        | 5        | 547      | 2500              | ✓                    | 2501                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 6        | 6        | 548      | 2500              | ✓                    | 2501                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 7        | 7        | 549      | 2000              | ✓                    | 2001                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 8        | 8        | 550      | 2000              | ✓                    | 2000                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 9        | 9        | 551      | 1500              | ✓                    | 1500                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 10       | 10       | 552      | 1500              | ✓                    | 1500                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 11       | 11       | 553      | 1000              | ✓                    | 1001                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 12       | 12       | 554      | 1000              | ✓                    | 1001                               |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 13       | 13       | 555      | 800               | ✓                    | 801                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 14       | 14       | 556      | 800               | ✓                    | 801                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 15       | 15       | 557      | 600               | ✓                    | 600                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 16       | 16       | 558      | 600               | ✓                    | 600                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 17       | 17       | 559      | 400               | ✓                    | 400                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 18       | 18       | 560      | 400               | ✓                    | 400                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 19       | 19       | 561      | 200               | ✓                    | 201                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 20       | 20       | 562      | 200               | ✓                    | 201                                |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 21       | 21       | 563      | 50                | ✓                    | 50                                 |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 22       | 22       | 564      | 50                | ✓                    | 50                                 |     |     |      |    |    | x |  |  |  |          |  |                                       |
| 23       | 23       | 565      | 50                | ✓                    | 50                                 | x   |     | xx   | xx |    |   |  |  |  |          |  |                                       |
| 24       | 24       | 566      | 5                 | ✓                    | 5                                  | 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): MR/DY                                                                                                                  |

|                     |                                                                  |   |
|---------------------|------------------------------------------------------------------|---|
| Bottom Depth:       | 3657                                                             | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 18:59 | 10:59 |
| Bottom | 2003  |       |
| End    | 2124  |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 21 01 N      |
| Lon: 135 ° 40 13 W     |

Start

|                    |
|--------------------|
| Bottom             |
| Lat: 49 ° 20 95 N  |
| Lon: 135 ° 40 17 W |

Bottom

|                    |
|--------------------|
| End                |
| Lat: 49 ° 20 95 N  |
| Lon: 135 ° 40 22 W |

End

Extra comments:  
Cast + Maureen

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P18 Event #: 64 Ship: Tully UTC Date (dd/mmm/yyyy): 16/2/2015

| 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        | 567      | 50                | ✓ 50                                                   | x                                  |     | x x | x x  |  |  |  |  |          |  |  |  |  |  |  |  |
| 2        | 2        | 568      | 5                 | ✓ 6                                                    | x                                  | x   | x x | x x  |  |  |  |  |          |  |  |  |  |  |  |  |
| 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

Bottom Depth: 3832 m

Transmisso Cleaned: Y / ☒ N

Time UTC Local

Start 0238 1838

Bottom 0313

End 0346

## Positional Information

Start Lat: 49 ° 26.03 N

Lon: 136 ° 40.04 W

Bottom Lat: 49 ° 25.95 N

Lon: 136 ° 39.87 W

End Lat: 49 ° 25.07 N

Lon: 136 ° 39.82 W

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P19

Event #: 65/66

Ship: Tully

UTC Date (dd|mmm|yyyy): 16 Feb 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments                                                                                          |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|---------------------------------------------------------------------------------------------------|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |                                                                                                   |  |  |  |
| 24       | 1        | 569      | 50                | ✓ 50               | x                                  |     | x x | x x  |  |  |  |  | Test line bottle 1 when computer crashed (~120m) not sure if it dated use bottles 2+3 for samples |  |  |  |
| 32       | 2        | 570      | 5                 | ✓ ~5               | x                                  | x   | x x | x x  |  |  |  |  |                                                                                                   |  |  |  |
| 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:       | 3928                                                         | m |
| Transmisso Cleaned: | <input checked="" type="radio"/> Y / <input type="radio"/> N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 10:11 | 02:11 |
| Bottom | 10:45 |       |
| End    | 11:39 |       |

|                        |      |             |   |
|------------------------|------|-------------|---|
| Positional Information |      |             |   |
| Start                  | Lat: | 49 ° 29 99  | N |
|                        | Lon: | 137 ° 40 11 | W |

|        |      |             |   |
|--------|------|-------------|---|
| Bottom | Lat: | 49 ° 29 95  | N |
|        | Lon: | 137 ° 40 16 | W |

|     |      |             |   |
|-----|------|-------------|---|
| End | Lat: | 49 ° 29 92  | N |
|     | Lon: | 137 ° 40 10 | W |

|                  |
|------------------|
| Extra comments:  |
| used bottles 2+3 |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P20

Event #: 67

Ship: Tully

UTC Date (dd|mmm|yyyy): 16 FEB 2015

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |     |       |       |       |    |     |  |        |     | Comments |        |   |  |  |                                 |
|----------|----------|----------|-------------------|------------|------------------------------------|-----|-------|-------|-------|----|-----|--|--------|-----|----------|--------|---|--|--|---------------------------------|
|          |          |          | Target            | Confirmed  | OXY                                | Sal | Nut-F | Nut-C | DIC   | pH |     |  | Gases  | UBC | Céline   | Cr iso |   |  |  |                                 |
|          |          |          | Pressure          | ✓ Pressure | 07/AS                              |     |       |       | MR/AN | 62 |     |  | 51/16P |     |          |        |   |  |  |                                 |
| 1        |          | 571      | Bot-10            | ✓          | 4025                               | x   |       | x     | x     | x  | x   |  |        | xx  | x        |        | x |  |  | p=4025 D=3930<br>S=39166 A=11.5 |
| 2        |          | 572      | 3500              | ✓          | 3500                               | x   | x     | x     | x     | xx | x   |  |        | xx  |          |        |   |  |  |                                 |
| 3        |          | 573      | 3500              | ✓          | 3500                               | x   | x     | x     | x     | x  | xxx |  |        |     |          |        | x |  |  |                                 |
| 4        |          | 574      | 3000              | ✓          | 3000                               | x   | xx    | x     | x     | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 5        |          | 575      | 2500              | ✓          | 2501                               | xx  | x     | x     | x     | x  | x   |  |        | xx  |          |        | x |  |  |                                 |
| 6        |          | 576      | 2000              | ✓          | 2001                               | x   | xx    | x     | x     | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 7        |          | 577      | 1500              | ✓          | 1500                               | x   | x     | x     | x     | x  | x   |  |        | xx  | x        | x      | x |  |  |                                 |
| 8        |          | 578      | 1250              | ✓          | 1250                               | x   | x     | xx    | xx    | x  | x   |  |        | xx  | x        |        | x |  |  |                                 |
| 9        |          | 579      | 1000              | ✓          | 1000                               | x   | xx    | x     | x     | x  | x   |  |        | xx  | x        | x      |   |  |  |                                 |
| 10       |          | 580      | 800               | ✓          | 800                                | x   | x     | x     | x     | x  | x   |  |        | xx  | x        |        | x |  |  |                                 |
| 11       |          | 581      | 600               | ✓          | 600                                | x   | x     | x     | x     | x  | x   |  |        | xx  | x        | x      |   |  |  |                                 |
| 12       |          | 582      | 400               | ✓          | 401                                | x   | x     | x     | x     | x  | x   |  |        | xx  | x        |        | x |  |  |                                 |
| 13       |          | 583      | 300               | ✓          | 300                                | xx  | x     | x     |       | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 14       |          | 584      | 250               | ✓          | 252                                | x   | x     | x     |       | x  | xxx |  |        |     |          |        | x |  |  |                                 |
| 15       |          | 585      | 200               | ✓          | 201                                | x   | x     | x     |       | x  | x   |  |        | xx  | x        | x      |   |  |  |                                 |
| 16       |          | 586      | 175               | ✓          | 175                                | x   | x     | x     |       | x  | x   |  |        |     |          |        | x |  |  |                                 |
| 17       |          | 587      | 150               | ✓          | 150                                | xx  | x     | x     |       | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 18       |          | 588      | 125               | ✓          | 125                                | x   | x     | x     |       | x  | x   |  |        |     |          |        | x |  |  |                                 |
| 19       |          | 589      | 100               | ✓          | 100                                | x   | x     | x     |       | x  | x   |  |        | xx  | x        | x      |   |  |  |                                 |
| 20       |          | 590      | 75                | ✓          | 75                                 | x   | x     | x     |       | x  | x   |  |        |     |          |        | x |  |  |                                 |
| 21       |          | 591      | 50                | ✓          | 51                                 | x   | x     | xx    |       | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 22       |          | 592      | 25                | ✓          | 25                                 | x   | x     | x     |       | x  | x   |  |        | xx  | x        |        | x |  |  |                                 |
| 23       |          | 593      | 10                | ✓          | 10                                 | xx  | x     | x     |       | x  | x   |  |        | xx  | x        |        |   |  |  |                                 |
| 24       |          | 594      | 5                 | ✓          | 5                                  | x   | x     | x     |       | x  | x   |  |        |     |          |        |   |  |  |                                 |

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

Bottom Depth: 39166 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 18 20 | 10 20 |
| Bottom | 1926  |       |
| End    | 2052  |       |

Positional Information  
Start  
Lat: 49 ° 34 06 N  
Lon: 138 ° 40 07 W

Bottom  
Lat: 49 ° 34 06 N  
Lon: 138 ° 40 07 W

End  
Lat: 49 ° 34.06 N  
Lon: 138 ° 40.07 W

Extra comments:  
Deep cast

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P20

Event #: 68

Ship: Tully

UTC Date (dd|mmm|yyyy): 16 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |            |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|------------|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM filt                            | TM un-filt |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 595      | 40                | <input checked="" type="checkbox"/>                    | x x                                | x x        |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 596      | 20                | <input checked="" type="checkbox"/>                    | x                                  | x          |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 597      | 10                | <input checked="" type="checkbox"/>                    | 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? ☒ Pump

Watchkeeper(s): K.S. D.V.

Bottom Depth: 3965 m

Transmisso Cleaned: Y I N

Time UTC Local

|        |      |  |
|--------|------|--|
| Start  | 2110 |  |
| Bottom | 2245 |  |
| End    | 2245 |  |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 49 ° 35.0  | N |
| Lon: | 138 ° 40.0 | W |

Start

Bottom

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

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 34.00  | N |
| Lon: | 138 ° 40.06 | W |

Extra comments:

TM pumping

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P20

Event #: 69

Ship: Tully

UTC Date (dd|mmm|yyyy): 16 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |            |     |        | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|------------|-----|--------|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM filt                            | TM un-filt | Sal | Nut-Fr |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 598      | <del>150</del>    | ✓ 175                                                  | x x                                | x x        | x   | x      |          |  |  |  |  |  |  |  |  |  |
| 2        |          | 599      | 125               |                                                        | x                                  | x          |     |        |          |  |  |  |  |  |  |  |  |  |
| 3        |          | 600      | 75                | ✓                                                      | x                                  | x          |     |        |          |  |  |  |  |  |  |  |  |  |
| 4        |          | 601      | 50                | ✓                                                      | x                                  | x          |     |        |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                                                        |                                    |            |     |        |          |  |  |  |  |  |  |  |  |  |

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

Bottom Depth: 3965 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2249 |       |
| Bottom | 2259 | 1405  |
| End    | 2310 |       |

## Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 33.99  | N |
| Lon: | 138 ° 40.06 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 33.98  | N |
| Lon: | 138 ° 40.06 | W |

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 33.99  | N |
| Lon: | 138 ° 40.07 | W |

Extra comments:

TM Shallow Go-flos



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P20

Event #: 70

Ship: Tully

UTC Date (dd|mmm|yyyy): 16 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |      |       |    |     |      |    |  |  | Comments |  |                                     |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|------|-------|----|-----|------|----|--|--|----------|--|-------------------------------------|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP | DMSP | Nut-F |    | Chl | HPLC |    |  |  |          |  |                                     |
|          |          |          |                   | ✓                  |                                    |      | t    | d     |    |     |      |    |  |  |          |  |                                     |
| 1        |          | 602      | 300               | ✓                  | 300                                | x    |      |       | x  |     |      |    |  |  |          |  | SPIGOT LEAKING - LEAKAGE NOT CLOSED |
| 2        |          | 603      | 200               | ✓                  | 200                                | x    | x    | x     | x  |     |      |    |  |  |          |  |                                     |
| 3        |          | 604      | 175               | ✓                  | 177                                | x    | x    | x     | x  |     |      |    |  |  |          |  |                                     |
| 4        |          | 605      | 100               | ✓                  | 100                                | x    | x    | x     | x  |     | x    |    |  |  |          |  |                                     |
| 5        |          | 606      | 75                | ✓                  | 75                                 | x    |      |       | x  |     | x    |    |  |  |          |  |                                     |
| 6        |          | 607      | 50                | ✓                  | 50                                 | x    |      |       | x  |     | xx   | xx |  |  |          |  |                                     |
| 7        |          | 608      | 40                | ✓                  | 38                                 | x    |      |       | x  |     | x    |    |  |  |          |  |                                     |
| 8        |          | 609      | 30                | ✓                  | 31                                 | x    |      |       | x  |     | x    |    |  |  |          |  |                                     |
| 9        |          | 610      | 25                | ✓                  | 24                                 | x    |      |       | x  |     | x    |    |  |  |          |  |                                     |
| 10       |          | 611      | 20                | ✓                  | 19                                 | xx   | xx   | xx    | x  |     | xx   | xx |  |  |          |  |                                     |
| 11       |          | 612      | 15                | ✓                  | 15                                 | x    |      |       | x  |     | x    |    |  |  |          |  |                                     |
| 12       |          | 613      | 10                | ✓                  | 10                                 | x    |      |       | xx |     | x    |    |  |  |          |  |                                     |
| 13       |          | 614      | 5                 | ✓                  | 5                                  | x    | x    | x     | x  |     | xx   | xx |  |  |          |  |                                     |
| 14       |          | 615      | 0                 | ✓                  | 1                                  | x    | x    | x     | x  |     | x    |    |  |  |          |  | NISKIN NOT CLOSED                   |
| 15       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 16       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 17       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 18       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 19       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 20       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 21       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 22       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 23       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |
| 24       |          |          |                   |                    |                                    |      |      |       |    |     |      |    |  |  |          |  |                                     |

Profile type:

ROS TRM X-Niskin other?

Watchkeeper(s): DY

Bottom Depth: 3695 m

Transmisso Cleaned: Y / N

Time UTC Local

Start 2323 1523

Bottom 2328

End 2346

Positional Information

Lat: 48° 33.99 N

Lon: 138° 40.14 W

Lat: 48° 33.92 N

Lon: 138° 40.16 W

Lat: 48° 33.93 N

Lon: 138° 40.16 W

Extra comments:

DMS cast

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P20

Event #: 73

Ship: Tully

UTC Date (dd/mmm/yyyy): 17 / 2 / 15

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |            |     |        | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|------------|-----|--------|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM filt                            | TM un-filt | Sal | Nut-Fr |          |
| 1        |          | 616      | 800               |                                                        | x x                                | x x        | x   | x      |          |
| 2        |          | 617      | 600               |                                                        | x                                  | x          |     |        |          |
| 3        |          | 618      | 400               |                                                        | x                                  | x          |     |        |          |
| 4        |          | 619      | 200               |                                                        | x                                  | x          |     |        |          |
| 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): | KS  | DY  |          |        |

|                     |      |   |
|---------------------|------|---|
| Bottom Depth:       | 3964 | m |
| Transmisso Cleaned: | Y    | N |

| Time   | UTC  | Local   |
|--------|------|---------|
| Start  | 0130 | 5:54 PM |
| Bottom | 0158 |         |
| End    | 0230 |         |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49° 33.86 N       |
| Lon: 138° 40.17 W      |

|                   |
|-------------------|
| Bottom            |
| Lat: 49° 33.88 N  |
| Lon: 138° 40.18 W |

|                   |
|-------------------|
| End               |
| Lat: 49° 33.88 N  |
| Lon: 138° 40.18 W |

|                 |
|-----------------|
| Extra comments: |
| TM Deep Go-flos |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P21

Event #: 76

Ship: Tully

UTC Date (dd|mmm|yyyy): 17 | 2 | 15

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |    |   |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|----|---|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |     | Cs |   |  |  |  |          |  |  |  |
| 1        | 1        | 620      | 300               | ✓                  | 300                                |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 2        | 2        | 621      | 300               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 3        | 3        | 622      | 300               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 4        | 4        | 623      | 300               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 5        | 5        | 624      | 300               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 6        | 6        | 625      | 300               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 7        | 7        | 626      | 150               | ✓                  | 150                                |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 8        | 8        | 627      | 150               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 9        | 9        | 628      | 150               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 10       | 10       | 629      | 150               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 11       | 11       | 630      | 150               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 12       | 12       | 631      | 150               | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 13       | 13       | 632      | 50                | ✓                  | 50                                 |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 14       | 14       | 633      | 50                | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 15       | 15       | 634      | 50                | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 16       | 16       | 635      | 50                | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 17       | 17       | 636      | 50                | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 18       | 18       | 637      | 50                | ✓                  |                                    | x   |     | x x  | x x |    | x |  |  |  |          |  |  |  |
| 19       | 19       | 638      | 5                 | ✓                  | 5                                  |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 20       | 20       | 639      | 5                 | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 21       | 21       | 640      | 5                 | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 22       | 22       | 641      | 5                 | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 23       | 23       | 642      | 5                 | ✓                  |                                    |     |     |      |     |    | x |  |  |  |          |  |  |  |
| 24       | 24       | 643      | 5                 | ✓                  |                                    | x   | x   | x x  | x x |    | x |  |  |  |          |  |  |  |

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

Bottom Depth: 3959 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0612 | 2212  |
| Bottom | 0646 |       |
| End    | 0723 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 37.98  | N |
| Lon: | 139 ° 40.05 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 39.00  | N |
| Lon: | 139 ° 39.96 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 39.02  | N |
| Lon: | 139 ° 40.05 | W |

Extra comments:  
Cast + Cesium

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P22

Event #: 78

Ship: Tully

UTC Date (dd|mmm|yyyy): 17 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |       |  |  |  |  |  | Comments        |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-------|--|--|--|--|--|-----------------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | Nut-C |  |  |  |  |  |                 |
| 1        | 1        | 644      | 600               | ✓ 601              | x                                  |     |     |      | x     |  |  |  |  |  | Nutrients water |
| 2        | 2        | 645      | 50                | ✓ 49               | x                                  |     | x x | x x  |       |  |  |  |  |  |                 |
| 3        | 3        | 646      | 5                 | ✓ 4                | x                                  | x   | x x | x x  |       |  |  |  |  |  |                 |
| 4        | 4        | 647      | 5                 | ✓ 4                | x                                  |     |     |      | x     |  |  |  |  |  | Nutrients water |
| 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): MR                                                                                                                     |

Bottom Depth: 3893 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1058 | 0258  |
| Bottom | 1131 |       |
| End    | 1207 |       |

## Positional Information

|       |                    |
|-------|--------------------|
| Start | Lat: 49 ° 42 05 N  |
|       | Lon: 140 ° 39 95 W |

|        |                    |
|--------|--------------------|
| Bottom | Lat: 49 ° 42 05 N  |
|        | Lon: 140 ° 39 94 W |

|     |                    |
|-----|--------------------|
| End | Lat: 49 ° 42 05 N  |
|     | Lon: 140 ° 39 90 W |

## Extra comments:

Not Daily Cal  
water for 2015

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P23

Event #: 80

Ship: Tully

UTC Date (dd|mmm|yyyy): 17 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |       |       |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|-------|-------|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | DIC | pH    |       |  |  |  |          |  |  |  |
| 1        | 1        | 648      | 2005              | ✓                  | 2005                               |     | x   |      |     | x x x | x x x |  |  |  |          |  |  |  |
| 2        | 2        | 649      | 2005              | ✓                  |                                    |     | x   |      |     | x x x | x x x |  |  |  |          |  |  |  |
| 3        | 3        | 650      | 2005              | ✓                  |                                    |     | x   |      |     | x x x | x x x |  |  |  |          |  |  |  |
| 4        | 4        | 651      | 2005              | ✓                  |                                    |     | x   |      |     | x x x | x x x |  |  |  |          |  |  |  |
| 5        | 5        | 652      | 2005              | ✓                  |                                    |     | x   |      |     | x x x | x x x |  |  |  |          |  |  |  |
| 6        | 6        | 653      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 7        | 7        | 654      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 8        | 8        | 655      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 9        | 9        | 656      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 10       | 10       | 657      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 11       | 11       | 658      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 12       | 12       | 659      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 13       | 13       | 660      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 14       | 14       | 661      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 15       | 15       | 662      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 16       | 16       | 663      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 17       | 17       | 664      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 18       | 18       | 665      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 19       | 19       | 666      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 20       | 20       | 667      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 21       | 21       | 668      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 22       | 22       | 669      | 2005              | ✓                  |                                    |     | x   |      |     |       |       |  |  |  |          |  |  |  |
| 23       | 23       | 670      | 50                | ✓                  | 50                                 | x   | x   | x x  | x x |       |       |  |  |  |          |  |  |  |
| 24       | 24       | 671      | 5                 | ✓                  | 5                                  | x   | x   | x x  | x x |       |       |  |  |  |          |  |  |  |

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

Bottom Depth: 4050 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1546 | 0746  |
| Bottom | 1619 |       |
| End    | 1652 |       |

Positional Information  
Start  
Lat: 49 ° 46 02 N  
Lon: 141 ° 40 03 W

Bottom  
Lat: 49 ° 45 98 N  
Lon: 141 ° 39 59 W

End  
Lat: 49 ° 46 01 N  
Lon: 141 ° 39 83 W

Extra comments:  
Calibration cast  
plus water for Sarah Z

## Sampling Log

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

**Cruise ID:** 2015-01      **Station:** P24

Event #: 81

Ship: Tully

UTC Date (dd|mmm|yyyy): 17 2 2015

[illegible]

**Profile type:**

|     |     |          |        |
|-----|-----|----------|--------|
| ROS | TRM | X-Niskin | other? |
|-----|-----|----------|--------|

**Watchkeeper(s):**

Bottom Depth: 3987 m

Transmisso Cleaned: ☒ Y / ☐ N

| <i>Time</i> | <i>UTC</i> | <i>Local</i> |
|-------------|------------|--------------|
|-------------|------------|--------------|

|       |      |      |
|-------|------|------|
| Start | 2038 | 1238 |
|-------|------|------|

|        |     |  |
|--------|-----|--|
| Bottom | 211 |  |
|--------|-----|--|

|     |      |
|-----|------|
| End | 2146 |
|-----|------|

### Positional Information

Lat: 49° 50' 27" N

Lon: 147 ° 40.09 W.

Lat: 49° 50.39 N

Lon: 142. 40.09 W

Lat: 49 ° 50.36 N

Long: 147 • 40.74 W

**Extra comments:**

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P25 Event #: 84 Ship: Tully UTC Date (dd|mmm|yyyy): 18|2|15

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 674      | 50                | ✓ 50               | x                                  |     | x x | x x  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 675      | 5                 | ✓ 5                | x                                  | x   | x x | x x  |  |  |  |  |  |  |  |  |          |
| 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

Bottom Depth: 4148 m  
 Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0155 | 1755  |
| Bottom | 0228 |       |
| End    | 0301 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.97  | N |
| Lon: | 143 ° 36.30 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.01   | N |
| Lon: | 143 ° 36.39 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.03   | N |
| Lon: | 143 ° 36.57 | W |

Extra comments:



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P35

Event #:

85

Ship: Tully

UTC Date (dd/mmm/yyyy): 18 / 2 / 15

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |  |  |  |  |  |
| 1        | 1        | 676      | 50                | ✓ 50               | x                                  |     | xx  | xx   |  |  |  |  |          |  |  |  |  |  |  |  |
| 2        | 2        | 677      | 5                 | ✓ 5                | x                                  | x   | xx  | xx   |  |  |  |  |          |  |  |  |  |  |  |  |
| 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): | 24  |     |          |        |

|                     |       |   |
|---------------------|-------|---|
| Bottom Depth:       | 4.50  | m |
| Transmisso Cleaned: | Q / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0612 | 2212  |
| Bottom | 0645 |       |
| End    | 0719 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49° 59.88' N      |
| Lon: 144° 18.26' W     |

|                    |
|--------------------|
| Bottom             |
| Lat: 49° 59.84' N  |
| Lon: 144° 18.27' W |

|                    |
|--------------------|
| End                |
| Lat: 49° 59.86' N  |
| Lon: 144° 18.30' W |

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

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 86 Ship: Tully UTC Date (dd|mmm|yyyy): 18 FEB 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |  |  |          |   |  |  |  |  |  |  |  | Comments |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|--|--|----------|---|--|--|--|--|--|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    |  |  | Plastics |   |  |  |  |  |  |  |  |          |  |
| 1        | 1        | 678      | Bot-10            | ✓                    | 4315                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 2        | 2        | 679      | 4000              | ✓                    | 4100                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 3        | 3        | 680      | 3500              | ✓                    | 3500                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 4        | 4        | 681      | 3000              | ✓                    | 3000                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 5        | 5        | 682      | 2500              | ✓                    | 2500                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 6        | 6        | 683      | 2000              | ✓                    | 2000                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 7        | 7        | 684      | 1500              | ✓                    | 1500                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 8        | 8        | 685      | 1250              | ✓                    | 1250                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 9        | 9        | 686      | 1000              | ✓                    | 1000                               |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 10       | 10       | 687      | 800               | ✓                    | 800                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 11       | 11       | 688      | 600               | ✓                    | 599                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 12       | 12       | 689      | 400               | ✓                    | 400                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 13       | 13       | 690      | 300               | ✓                    | 300                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 14       | 14       | 691      | 250               | ✓                    | 251                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 15       | 15       | 692      | 200               | ✓                    | 200                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 16       | 16       | 693      | 175               | ✓                    | 176                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 17       | 17       | 694      | 150               | ✓                    | 150                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 18       | 18       | 695      | 125               | ✓                    | 125                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 19       | 19       | 696      | 100               | ✓                    | 100                                |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 20       | 20       | 697      | 75                | ✓                    | 75                                 |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 21       | 21       | 698      | 50                | ✓                    | 50                                 |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 22       | 22       | 699      | 25                | ✓                    | 25                                 |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 23       | 23       | 700      | 10                | ✓                    | 10                                 |  |  |          | x |  |  |  |  |  |  |  |          |  |
| 24       | 24       | 701      | 5                 | ✓                    | 4                                  |  |  |          | x |  |  |  |  |  |  |  |          |  |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 420     | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1019 | 0219  |
| Bottom | 1130 |       |
| End    | 1257 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 59 99 N      |
| Lon: 144 ° 59 96 W     |

|                    |
|--------------------|
| Bottom             |
| Lat: 49 ° 59 99 N  |
| Lon: 144 ° 59 98 W |

|                    |
|--------------------|
| End                |
| Lat: 49 ° 59 99 N  |
| Lon: 144 ° 59 98 W |

|                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------|
| Extra comments: - no one doing laundry.                                                                                    |
| Plastics cast                                                                                                              |
| Note: Took a control sample; left a chemical sieve out while sampling, then washed into a scint. vial after using sprayer. |

- Took another control with the spray water only.

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 87 Ship: Tully UTC Date (dd|mmm|yyyy): 18 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cs                                 |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 702      | 500               | ✓ 500              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 703      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 704      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 705      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 706      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 707      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 708      | 400               | ✓ 400              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 709      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 710      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 711      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 712      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 713      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 714      | 300               | ✓ 299              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 715      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 716      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 717      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 718      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 719      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 720      | 200               | ✓ 200              | x                                  |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 721      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 722      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 723      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 724      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 725      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |          |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 4251    | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1326 | 0526  |
| Bottom | 1334 |       |
| End    | 1347 |       |

|                        |      |             |   |
|------------------------|------|-------------|---|
| Positional Information |      |             |   |
| Start                  | Lat: | 49 ° 59 99  | N |
|                        | Lon: | 144 ° 59 99 | W |

|        |      |             |   |
|--------|------|-------------|---|
| Bottom | Lat: | 49 ° 59 99  | N |
|        | Lon: | 144 ° 59 99 | W |

|     |      |             |   |
|-----|------|-------------|---|
| End | Lat: | 49 ° 59 99  | N |
|     | Lon: | 144 ° 59 99 | W |

|                  |
|------------------|
| Extra comments:  |
| Deep Cesium cast |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 88 Ship: Tully UTC Date (dd|mmm|yyyy): 18 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                    |          | Samples Taken / Sampler's Initials |  |    |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|------------------------------------|----------|------------------------------------|--|----|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input type="checkbox"/> | Pressure |                                    |  | Cr |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 726      | 1000              |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 727      | 750               |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 728      | 500               |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 729      | 150               |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 730      | 100               |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 731      | 50                |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 732      | 5                 |                                    |          |                                    |  | x  |  |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                                    |          |                                    |  |    |  |  |  |  |  |  |  |  |  |          |

Profile type: In-situ Pump  
ROS TRM X-Niskin other?  
Watchkeeper(s): MR / M

Bottom Depth: 4250 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1403 | 0603  |
| Bottom | 1444 | 0644  |
| End    | 1730 | 0930  |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 45 ° 59 99  | N |
| Lon: | 144 ° 59 99 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59 99  | N |
| Lon: | 144 ° 59 99 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59 99  | N |
| Lon: | 144 ° 59 99 | W |

Extra comments:  
UBC in-situ pumps to 1000 m

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 89 Ship: Tully UTC Date (dd|mmm|yyyy): 18 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |   |     |  |  |  |  |  |  |  |  |  | Comments                        |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---|-----|--|--|--|--|--|--|--|--|--|---------------------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nd                                 |   | REE |  |  |  |  |  |  |  |  |  |                                 |
| 1        |          | 740      | 1000              | ✓ 1000               |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.2                             |
| 2        |          | 741      | 1000              | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.0 <i>rusty looking on 4.0</i> |
| 3        |          | 742      | 800               | ✓ 800                |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.2                             |
| 4        |          | 743      | 800               | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.1                             |
| 5        |          | 744      | 600               | ✓ 600                |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.5                             |
| 6        |          | 745      | 600               | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.5                             |
| 7        |          | 746      | 400               | ✓ 400                |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.7                             |
| 8        |          | 747      | 400               | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.7                             |
| 9        |          | 748      | 200               | ✓ 200                |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.9                             |
| 10       |          | 749      | 200               | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 4.9                             |
| 11       |          | 750      | 50                | ✓ 51                 |                                    | x | x   |  |  |  |  |  |  |  |  |  | 7.7                             |
| 12       |          | 751      | 50                | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 7.8                             |
| 13       |          | 752      | 5                 | ✓ 5                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 7.9                             |
| 14       |          | 753      | 5                 | ✓ ↓                  |                                    | x | x   |  |  |  |  |  |  |  |  |  | 7.9                             |
| 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): MB                                                                                                                     |

|                     |                                                                  |   |
|---------------------|------------------------------------------------------------------|---|
| Bottom Depth:       | 4251                                                             | m |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |   |

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 18:15 | 10:15 |
| Bottom | 18:37 |       |
| End    | 18:54 |       |

|                        |       |       |   |
|------------------------|-------|-------|---|
| Positional Information |       |       |   |
| Lat:                   | 49 °  | 59 99 | N |
| Lon:                   | 145 ° | 0 02  | W |

|      |       |       |   |
|------|-------|-------|---|
| ▼    |       |       |   |
| Lat: | 49 °  | 59 98 | N |
| Lon: | 145 ° | 0 01  | W |

|      |       |       |   |
|------|-------|-------|---|
| ▼    |       |       |   |
| Lat: | 49 °  | 59 99 | N |
| Lon: | 144 ° | 59 99 | W |

Extra comments:  
Maureen's cast for Nd and REE

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 98 Ship: Tully UTC Date (dd|mmm|yyyy): 18 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM                                 | TM  |  |  |  |  |  |  |  |  |          |
| 1        |          | 733      | 40                | <input checked="" type="checkbox"/>                    | x x                                | x x |  |  |  |  |  |  |  |  |          |
| 2        |          | 734      | 20                | <input checked="" type="checkbox"/>                    | x                                  | x   |  |  |  |  |  |  |  |  |          |
| 3        |          | 735      | 10                | <input checked="" type="checkbox"/>                    | 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): K.S.

Bottom Depth: 4250 m  
 Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 19:05 | 11:08 |
| Bottom |       | 11:25 |
| End    | 19:56 | 11:56 |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.99  | N |
| Lon: | 145 ° 00.00 | W |

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.99  | N |
| Lon: | 145 ° 00.00 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.99  | N |
| Lon: | 145 ° 00.00 | W |

Extra comments:  
 TM pumping

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P26

Event #: 91

Ship: Tully

UTC Date (dd|mmm|yyyy): 18 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |       |  |     |      |       | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|-------|--|-----|------|-------|----------|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-F |  | Chl | HPLC | Phyto |          |  |  |  |  |  |
| 1        |          | 754      | 300               | ✓ 300                | x                                  |      |      | x     |  |     |      |       |          |  |  |  |  |  |
| 2        |          | 755      | 200               | ✓ 200                | x                                  | x    | x    | x x   |  |     |      |       |          |  |  |  |  |  |
| 3        |          | 756      | 175               | ✓ 175                | x                                  | x    | x    | x     |  |     |      |       |          |  |  |  |  |  |
| 4        |          | 757      | 100               | ✓ 102                | x                                  | x    | x    | x     |  | x   |      |       |          |  |  |  |  |  |
| 5        |          | 758      | 75                | ✓ 75                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 6        |          | 759      | 50                | ✓ 50                 | x                                  |      |      | x     |  | x x | x x  |       |          |  |  |  |  |  |
| 7        |          | 760      | 40                | ✓ 40                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 8        |          | 761      | 30                | ✓ 31                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 9        |          | 762      | 25                | ✓ 25                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 10       |          | 763      | 20                | ✓ 20                 | x x                                | x x  | x x  | x     |  | x x | x x  |       |          |  |  |  |  |  |
| 11       |          | 764      | 15                | ✓ 14                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 12       |          | 765      | 10                | ✓ 10                 | x                                  |      |      | x     |  | x   |      |       |          |  |  |  |  |  |
| 13       |          | 766      | 5                 | ✓ 5                  | x                                  | x    | x    | x     |  | x x | x x  | x x x |          |  |  |  |  |  |
| 14       |          | 767      | 0                 | ✓ 2                  | 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

Bottom Depth: 425.2 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2150 | 1350  |
| Bottom | 2155 |       |
| End    | 2213 |       |

Positional Information

|       |                  |   |
|-------|------------------|---|
| Start | Lat: 50 ° 0.01   | N |
|       | Lon: 144 ° 59.98 | W |

Bottom

|                  |   |
|------------------|---|
| Lat: 50 ° 0.00   | N |
| Lon: 144 ° 59.98 | W |

End

|                  |   |
|------------------|---|
| Lat: 49 ° 59.99  | N |
| Lon: 144 ° 59.99 | W |

Extra comments:  
DMS cast



Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 92 Ship: Tully UTC Date (dd|mmm|yyyy): 18|02|2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |         |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|---------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | TM                                 | TM      |  |  |  |  |  |  |  |  |          |
|          |          |          |                   |                                                        | filt                               | un-filt |  |  |  |  |  |  |  |  |          |
| 1        |          | 839      | 40                | 40                                                     |                                    |         |  |  |  |  |  |  |  |  |          |
| 2        |          | 839      | UBC               | 25L                                                    | XXX                                |         |  |  |  |  |  |  |  |  |          |
| 3        |          | 839      | UBC               | 10L                                                    | XXX                                |         |  |  |  |  |  |  |  |  |          |
| 4        |          | 839      | UBC               | 250ml                                                  | 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): KS

Bottom Depth: 4250 m  
Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 19:56 | 11:56 |
| Bottom |       |       |
| End    | 21:08 | 13:08 |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.99  | N |
| Lon: | 145 ° 00.00 | W |

Start

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

Bottom

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

End

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.99  | N |
| Lon: | 145 ° 00.01 | W |

Extra comments:  
TM pumping for UBC

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P26

Event #: 93

Ship: Tully

UTC Date (dd|mmm|yyyy): 18|2|2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |       |     |       |       |     |     |     | D.Y.  |       |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-------|-----|-------|-------|-----|-----|-----|-------|-------|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC | Alk   | pH    |     | Nut | Sam | Gases |       |  |  |          |
|          |          |          |                   |                    |                                    |     |       |       |     |       |       |     |     |     |       |       |  |  |          |
|          |          |          |                   | ✓                  |                                    | DY  | LH    | Cam   | CM  | MR/IN | KS/BJ | GC  |     | 250 | Sam   | LF/SK |  |  |          |
| 1        | 1        | 768      | Bot-10            | ✓                  | 4316                               | x   |       | xx    | x   | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 2        | 2        | 769      | 4000              | ✓                  | 3999                               | xx  | xx    | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 3        | 3        | 770      | 3500              | ✓                  | 3500                               | x   | x     | xx    | x   | xx    | x     | x   |     | x   |       | xx    |  |  |          |
| 4        | 4        | 771      | 3000              | ✓                  | 3001                               | x   | x     | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 5        | 5        | 772      | 2500              | ✓                  | 2501                               | x   | x     | xx    | x   | x     | x     | xxx |     | x   |       | xx    |  |  |          |
| 6        | 6        | 773      | 2000              | ✓                  | 2001                               | x   | xx    | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 7        | 7        | 774      | 1500              | ✓                  | 1500                               | x   | x     | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 8        | 8        | 775      | 1250              | ✓                  | 1250                               | xx  | x     | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 9        | 9        | 776      | 1000              | ✓                  | 1000                               | x   | x     | xx    | x   | x     | x     | x   |     | x   | x     | xx    |  |  |          |
| 10       | 10       | 777      | 800               | ✓                  | 801                                | x   |       | xxxx  | xx  | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 11       | 11       | 778      | 600               | ✓                  | 601                                | x   |       | xx    | x   | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 12       | 12       | 779      | 400               | ✓                  | 400                                | x   |       | xx    | x   | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 13       | 13       | 780      | 300               | ✓                  | 300                                | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 14       | 14       | 781      | 250               | ✓                  | 251                                | xx  |       | xx    |     | x     | x     | x   |     |     |       |       |  |  |          |
| 15       | 15       | 782      | 200               | ✓                  | 200                                | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 16       | 16       | 783      | 175               | ✓                  | 175                                | x   |       | xxxx  |     | x     | x     | x   |     |     |       |       |  |  |          |
| 17       | 17       | 784      | 150               | ✓                  | 150                                | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 18       | 18       | 785      | 125               | ✓                  | 125                                | xx  |       | xx    |     | x     | x     | x   |     |     |       |       |  |  |          |
| 19       | 19       | 786      | 100               | ✓                  | 100                                | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 20       | 20       | 787      | 75                | ✓                  | 76                                 | x   |       | xx    |     | x     | x     | xxx |     |     |       |       |  |  |          |
| 21       | 21       | 788      | 50                | ✓                  | 57                                 | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 22       | 22       | 789      | 25                | ✓                  | 25                                 | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 23       | 23       | 790      | 10                | ✓                  | 10                                 | x   |       | xx    |     | x     | x     | x   |     |     | x     | xx    |  |  |          |
| 24       | 24       | 791      | 5                 | ✓                  | 5                                  | x   | x     | xx    |     | 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                                                                                                                     |

|                     |                                                                  |
|---------------------|------------------------------------------------------------------|
| Bottom Depth:       | 4252 m                                                           |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 2248 | 1448  |
| Bottom | 0004 |       |
| End    | 0136 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 49 ° 59.99 N      |
| Lon: 144 ° 59.99 W     |

|                   |
|-------------------|
| Bottom            |
| Lat: 49 ° 59.99 N |
| Lon: 145 ° 0.00 W |

|                   |
|-------------------|
| End               |
| Lat: 49 ° 59.99 N |
| Lon: 145 ° 0.00 W |

|                 |
|-----------------|
| Extra comments: |
| Deep cast       |

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 94 Ship: Tully UTC Date (dd|mmm|yyyy): 19 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                 |  | Samples Taken / Sampler's Initials |    |   |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|---------------------------------|--|------------------------------------|----|---|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <div>√</div> Pressure |  |                                    | Cr |   |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 792      | 3500              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 793      | 3000              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 794      | 2750              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 795      | 2500              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 796      | 2000              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 797      | 1750              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 798      | 1500              |                                 |  |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                                 |  |                                    |    |   |  |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 4252 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0145 |       |
| Bottom | 0307 |       |
| End    | 0644 |       |

Positional Information  
Start  
Lat: 49 ° 59.99 N  
Lon: 145 ° 00.00 W

Bottom  
Lat: ° N  
Lon: ° W

End  
Lat: ° N  
Lon: ° W

Extra comments:  
UBC in-situ pumps to 3500 m

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 95 Ship: Tully UTC Date (dd|mmm|yyyy): 19 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                         | Samples Taken / Sampler's Initials |  |     |   |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-------------------------|------------------------------------|--|-----|---|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed<br>✓ Pressure |                                    |  | Sam |   |  |  |  |  |  |  |  |  |          |
| 1        |          | 799      | 2000              | ✓                       | 2000                               |  |     | x |  |  |  |  |  |  |  |  |          |
| 2        |          | 800      | 2000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 3        |          | 801      | 2000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 4        |          | 802      | 2000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 5        |          | 803      | 1000              | ✓                       | 1000                               |  |     | x |  |  |  |  |  |  |  |  |          |
| 6        |          | 804      | 1000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 7        |          | 805      | 1000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 8        |          | 806      | 1000              | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 9        |          | 807      | 500               | ✓                       | 500                                |  |     | x |  |  |  |  |  |  |  |  |          |
| 10       |          | 808      | 500               | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 11       |          | 809      | 500               | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 12       |          | 810      | 500               | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 13       |          | 811      | 10                | ✓                       | 10                                 |  |     | x |  |  |  |  |  |  |  |  |          |
| 14       |          | 812      | 10                | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 15       |          | 813      | 10                | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 16       |          | 814      | 10                | ✓                       |                                    |  |     | x |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                         |                                    |  |     |   |  |  |  |  |  |  |  |  |          |

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

Watchkeeper(s): DY

Bottom Depth: 4252 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0654 | 2254  |
| Bottom | 0727 |       |
| End    | 0803 |       |

Positional Information

Start Lat: 49 ° 59.99 N

Start Lon: 145 ° 0.00 W

Bottom Lat: 49 ° 59.99 N

Bottom Lon: 145 ° 0.00 W

End Lat: 49 ° 59.99 N

End Lon: 144 ° 59.99 W

Extra comments:

Sam's cast

# Water Properties Group

# Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 98 Ship: Tully UTC Date (dd|mmm|yyyy): 19 Feb 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |        |       |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--------|-------|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Céline                             | Cr Iso | Cr Sp |  |  |  |  |  |  |  |          |
| 1        | 1        | 815      | Bot-10            | ✓ 415              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 2        | 2        | 816      | 4000              | ✓ 4000             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 3        | 3        | 817      | 3500              | ✓ 3500             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 4        | 4        | 818      | 3000              | ✓ 3000             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 5        | 5        | 819      | 2500              | ✓ 2500             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 6        | 6        | 820      | 2000              | ✓ 2000             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 7        | 7        | 821      | 1500              | ✓ 1500             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 8        | 8        | 822      | 1250              | ✓ 1250             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 9        | 9        | 823      | 1000              | ✓ 1000             | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 10       | 10       | 824      | 800               | ✓ 800              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 11       | 11       | 825      | 600               | ✓ 600              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 12       | 12       | 826      | 400               | ✓ 400              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 13       | 13       | 827      | 300               | ✓ 300              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 14       | 14       | 828      | 250               | ✓ 250              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 15       | 15       | 829      | 200               | ✓ 200              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 16       | 16       | 830      | 175               | ✓ 175              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 17       | 17       | 831      | 150               | ✓ 150              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 18       | 18       | 832      | 125               | ✓ 125              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 19       | 19       | 833      | 100               | ✓ 100              | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 20       | 20       | 834      | 75                | ✓ 75               | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 21       | 21       | 835      | 50                | ✓ 50               | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 22       | 22       | 836      | 25                | ✓ 25               | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 23       | 23       | 837      | 10                | ✓ 10               | x                                  | x      | x     |  |  |  |  |  |  |  |          |
| 24       | 24       | 838      | 5                 | ✓ 5                | x                                  | x      | x     |  |  |  |  |  |  |  |          |

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

Watchkeeper(s): MB

Bottom Depth: 4252 m

Transmissio Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1025 | 0225  |
| Bottom | 1136 |       |
| End    | 1306 |       |

Positional Information

Start Lat: 49 ° 59 99 N

Start Lon: 144 ° 59 99 W

Bottom Lat: 49 ° 59 99 N

Bottom Lon: 144 ° 59 99 W

End Lat: 49 ° 59 99 N

End Lon: 144 ° 59 99 W

Extra comments:

Céline & Kohen's cast with cups

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 99 Ship: Tully UTC Date (dd|mmm|yyyy): 19 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        |     | Samples Taken / Sampler's Initials |         |     |        |  |  |  |  | Comments |  |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|-----|------------------------------------|---------|-----|--------|--|--|--|--|----------|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure |     | TM                                 | TM      | Sal | Nut-Fr |  |  |  |  |          |  |  |  |  |
|          |          |          |                   |                                                        |     | filt                               | un-filt |     |        |  |  |  |  |          |  |  |  |  |
| 1        |          | 736      | 150               |                                                        | 175 | x x                                | x x     | x   | x      |  |  |  |  |          |  |  |  |  |
| 2        |          | 737      | 125               |                                                        |     | x                                  | x       |     |        |  |  |  |  |          |  |  |  |  |
| 3        |          | 738      | 75                |                                                        |     | x                                  | x       |     |        |  |  |  |  |          |  |  |  |  |
| 4        |          | 739      | 50                |                                                        |     | x                                  | x       |     |        |  |  |  |  |          |  |  |  |  |
| 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): RS, MB

Bottom Depth: 4250 m  
Transmisso Cleaned: Y-+N-

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 13:18 | 05:52 |
| Bottom | 13:48 | 06:22 |
| End    | 13:57 | 06:57 |

49 59 .98  
Positional Information

|        |                    |
|--------|--------------------|
| Start  | Lat: 49 ° 59.99 N  |
|        | Lon: 125 ° 00.00 W |
|        | 144 ▼ 59.98        |
| Bottom | Lat: 49 ° 59.99 N  |
|        | Lon: 125 ° 00.00 W |
|        | ▼                  |
| End    | Lat: 49 ° 59.58 N  |
|        | Lon: 124 ° 59.99 W |

Extra comments:  
TM Shallow Go-flos

Cruise ID: 2015-01 Station: P20 P26 Event #: 100 Ship: Tully UTC Date (dd|mmm|yyyy): 19 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |         |     |        | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---------|-----|--------|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | TM                                 | TM      | Sal | Nut-Fr |          |  |  |  |  |  |  |  |  |  |
|          |          |          |                   |                      | filt                               | un-filt |     |        |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 840      | 800               | ✓                    | x                                  | x       | x   | x      |          |  |  |  |  |  |  |  |  |  |
| 2        |          | 841      | 600               | ✓                    | x                                  | x       |     |        |          |  |  |  |  |  |  |  |  |  |
| 3        |          | 842      | 400               | ✓                    | x                                  | x       |     |        |          |  |  |  |  |  |  |  |  |  |
| 4        |          | 843      | 200               | ✓                    | x x                                | x x     |     |        |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                      |                                    |         |     |        |          |  |  |  |  |  |  |  |  |  |

Profile type:  
ROS TRM ☒ Niskin other?  
Watchkeeper(s): K.S MB

Bottom Depth: 4250 m  
Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 14:30 | 6:30  |
| Bottom | 14:50 | 6:50  |
| End    | 15:20 | 7:20  |

Positional Information

|        |                    |
|--------|--------------------|
| Start  | Lat: 49 ° 59 98 N  |
|        | Lon: 144 ° 59 25 W |
| Bottom | Lat: 49 ° 59 98 N  |
|        | Lon: 144 ° 59 98 W |
| End    | Lat: 49 ° 59 98 N  |
|        | Lon: 144 ° 59 58 W |

Extra comments:  
TM Deep Go-flos



## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P26 Event #: 101 Ship: Tully UTC Date (dd|mmm|yyyy): 19 | FEB | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |    |   |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|----|---|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure |                                    | Cs |   |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 844      | 150               | ✓                    | 150                                |    | x |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 845      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 846      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 847      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 848      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 849      | 150               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 850      | 100               | ✓                    | 100                                |    | x |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 851      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 852      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 853      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 854      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 855      | 100               | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 856      | 50                | ✓                    | 50                                 |    | x |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 857      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 858      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 859      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 860      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 861      | 50                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 862      | 05                | ✓                    | 5                                  |    | x |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 863      | 05                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 864      | 05                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 865      | 05                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 866      | 05                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 867      | 05                | ✓                    |                                    |    | x |  |  |  |  |  |  |  |  |  |          |

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

|                     |                                                                    |
|---------------------|--------------------------------------------------------------------|
| Bottom Depth:       | 4252 m                                                             |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1533 | 0733  |
| Bottom | 1536 |       |
| End    | 1544 |       |

|                        |                 |   |
|------------------------|-----------------|---|
| Positional Information |                 |   |
| Start                  | Lat: 49° 59.99  | N |
|                        | Lon: 145° 00.00 | W |

|        |                 |   |
|--------|-----------------|---|
| Bottom | Lat: 49° 59.99  | N |
|        | Lon: 145° 00.00 | W |

|     |                 |   |
|-----|-----------------|---|
| End | Lat: 49° 59.99  | N |
|     | Lon: 145° 00.00 | W |

|                     |
|---------------------|
| Extra comments:     |
| Shallow Cesium cast |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P5 Event #: 115 Ship: Tully UTC Date (dd|mmm|yyyy): 22 | Feb | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|--|--|--|--|----------|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |          |  |  |  |  |  |
| 1        | 1        | 868      | 30                | ✓ 30               | x                                  |     | x x | x x  |  |  |  |  |          |  |  |  |  |  |
| 2        | 2        | 869      | 5                 | ✓ 5                | x                                  | x   | x x | x x  |  |  |  |  |          |  |  |  |  |  |
| 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: 2079 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1538 | 0738  |
| Bottom | 1611 |       |
| End    | 1645 |       |

Positional Information

|      |              |
|------|--------------|
| Lat: | 48 ° 41 51 N |
| Lon: | 127 ° 9 77 W |

Bottom

|      |              |
|------|--------------|
| Lat: | 48 ° 41 51 N |
| Lon: | 127 ° 9 58 W |

End

|      |              |
|------|--------------|
| Lat: | 48 ° 41 44 N |
| Lon: | 127 ° 9 61 W |

Extra comments:

# Water Properties Group

# Sampling Log

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

Cruise ID: 2014-19 Station: P4 Event #: 118 Ship: Tully UTC Date (dd|mmm|yyyy): 22 Feb 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Cs                                 |  |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 219      | 500               | ✓ 500              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 220      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 221      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 222      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 223      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 224      | 500               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 225      | 400               | ✓ 400              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 226      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 227      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 228      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          | 229      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          | 230      | 400               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          | 231      | 300               | ✓ 300              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          | 232      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          | 233      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          | 234      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          | 235      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          | 236      | 300               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          | 237      | 200               | ✓ 200              | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          | 238      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          | 239      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          | 240      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          | 241      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          | 242      | 200               | ✓                  | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |

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

Watchkeeper(s): MB

Bottom Depth: 1308 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 19:17 | 11:17 |
| Bottom | 19:25 |       |
| End    | 19:37 |       |

Positional Information

Lat: 48 ° 39 02 N

Lon: 126 ° 40 02 W

Lat: 48 ° 39 02 N

Lon: 126 ° 40 01 W

Lat: 48 ° 38 59 N

Lon: 126 ° 39 59 W

Extra comments:

Deep Cesium cast

PAR on

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 119 Ship: Tully UTC Date (dd|mmm|yyyy): 22 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |       |  |     |      |       |  |  | Comments |  |  |  |                      |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|-------|--|-----|------|-------|--|--|----------|--|--|--|----------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-F |  | Chl | HPLC | Phyto |  |  |          |  |  |  |                      |
|          |          |          |                   |                      |                                    | t    |      | d     |  |     |      |       |  |  |          |  |  |  |                      |
| 1        |          | 263      | 300               | ✓ 300                | x                                  |      |      | x     |  |     |      |       |  |  |          |  |  |  | Vent loose slightly, |
| 2        |          | 264      | 200               | ✓ 200                | x                                  | x    | x    | x     |  |     |      |       |  |  |          |  |  |  |                      |
| 3        |          | 265      | 175               | ✓ 175                | x                                  | x    | x    | x     |  |     |      |       |  |  |          |  |  |  |                      |
| 4        |          | 266      | 100               | ✓ 100                | x                                  | x    | x    | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 5        |          | 267      | 75                | ✓ 74                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 6        |          | 268      | 50                | ✓ 50                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 7        |          | 269      | 40                | ✓ 40                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 8        |          | 270      | 30                | ✓ 29                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 9        |          | 271      | 25                | ✓ 25                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 10       |          | 272      | 20                | ✓ 19                 | xx                                 | xx   | xx   | x     |  | xx  |      |       |  |  |          |  |  |  |                      |
| 11       |          | 273      | 15                | ✓ 15                 | x                                  |      |      | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 12       |          | 274      | 10                | ✓ 10                 | x                                  |      |      | xx    |  | x   |      |       |  |  |          |  |  |  |                      |
| 13       |          | 275      | 5                 | ✓ 5                  | x                                  | x    | x    | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 14       |          | 276      | 0                 | ✓ 1                  | x                                  | x    | x    | x     |  | x   |      |       |  |  |          |  |  |  |                      |
| 15       |          | 277      | 30                | ✓ 29                 |                                    |      |      |       |  | xx  | xx   |       |  |  |          |  |  |  |                      |
| 16       |          | 278      | 15                | ✓ 15                 |                                    |      |      |       |  | xx  | xx   |       |  |  |          |  |  |  |                      |
| 17       |          | 279      | 5                 | ✓ 5                  |                                    |      |      |       |  | xx  | xx   | xxx   |  |  |          |  |  |  |                      |
| 18       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 19       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 20       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 21       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 22       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 23       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |
| 24       |          |          |                   |                      |                                    |      |      |       |  |     |      |       |  |  |          |  |  |  |                      |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 1315    | m |
| Transmisso Cleaned: | (Y) / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 2009 | 1209  |
| Bottom | 2015 |       |
| End    | 2033 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48° 38.99 N       |
| Lon: 126° 39.99 W      |

|                   |
|-------------------|
| Bottom            |
| Lat: 48° 38.99 N  |
| Lon: 126° 39.99 W |

|                   |
|-------------------|
| End               |
| Lat: 48° 38.99 N  |
| Lon: 126° 39.99 W |

|                                  |
|----------------------------------|
| Extra comments:                  |
| DMS cast - OUT-OF-ORDER          |
| 1-8; 15; 9-11; 16; 12-13; 17; 14 |

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 120 Ship: Tully UTC Date (dd|mmm|yyyy): 22 | 02 | 15

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |         |     |        |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---------|-----|--------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | TM                                 | TM      | Sal | Nut-Fr |  |  |  |  |  |  |  |  |          |
|          |          |          |                   |                      | filt                               | un-filt |     |        |  |  |  |  |  |  |  |  |          |
| 1        |          | 871      | 175               | ✓                    | x                                  | x       | x   | x      |  |  |  |  |  |  |  |  |          |
| 2        |          | 872      | 125               | ✓                    | x                                  | x       |     |        |  |  |  |  |  |  |  |  |          |
| 3        |          | 873      | 75                | ✓                    | xx                                 | xx      |     |        |  |  |  |  |  |  |  |  |          |
| 4        |          | 874      | 50                |                      | x                                  | x       |     |        |  |  |  |  |  |  |  |  |          |
| 5        |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 6        |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 7        |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |         |     |        |  |  |  |  |  |  |  |  |          |

Profile type:  
ROS TRM ☒ Niskin other?  
Watchkeeper(s): K.S

Bottom Depth: 1315 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2115 | 1:15  |
| Bottom | 2129 | 1:29  |
| End    | 2140 | 1:40  |

Positional Information

|        |      |             |   |
|--------|------|-------------|---|
| Start  | Lat: | °           | N |
|        | Lon: | °           | W |
| Bottom | Lat: | 48 ° 38.99  | N |
|        | Lon: | 126 ° 39.96 | W |
| End    | Lat: | 48 ° 38.99  | N |
|        | Lon: | 126 ° 40.50 | W |

Extra comments:  
TM Shallow Go-flos

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P4 Event #: 121 Ship: Tully UTC Date (dd|mmm|yyyy): 22 | 2 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |       |       |     |     |     |     |       |  |        | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-------|-------|-----|-----|-----|-----|-------|--|--------|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Nut-F | Nut-C | Sal | DIC | pH  | Sam | gases |  | Celine |          |  |  |  |
| 1        |          | 243      | Bot-10            | ✓ 1321               | x                                  | x     | x     |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 2        |          | 244      | 1250              | ✓ 1250               | x                                  | x     | x     | x   | xx  | x   | x   | x     |  |        |          |  |  |  |
| 3        |          | 245      | 1250              | ✓ 1250               | xx                                 | x     | x     | xx  | x   | x   |     |       |  |        |          |  |  |  |
| 4        |          | 246      | 1000              | ✓ 1000               | x                                  | x     | x     | xx  | x   | x   | x   | x     |  | x      |          |  |  |  |
| 5        |          | 247      | 800               | ✓ 800                | x                                  | x     | x     | x   | x   | x   | x   | x     |  |        |          |  |  |  |
| 6        |          | 248      | 600               | ✓ 600                | x                                  | xx    | xx    |     | x   | xxx | x   | x     |  | x      |          |  |  |  |
| 7        |          | 249      | 400               | ✓ 400                | x                                  | x     | x     |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 8        |          | 250      | 300               | ✓ 300                | x                                  | x     |       |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 9        |          | 251      | 250               | ✓ 250                | x                                  | x     |       |     | x   | x   |     |       |  |        |          |  |  |  |
| 10       |          | 252      | 200               | ✓ 200                | x                                  | x     |       |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 11       |          | 253      | 175               | ✓ 175                | x                                  | x     |       |     | x   | x   |     |       |  |        |          |  |  |  |
| 12       |          | 254      | 150               | ✓ 150                | x                                  | x     |       |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 13       |          | 255      | 125               | ✓ 125                | x                                  | xx    |       |     | x   | x   |     |       |  |        |          |  |  |  |
| 14       |          | 256      | 100               | ✓ 100                | x                                  | x     |       |     | x   | x   | x   | x     |  | x      |          |  |  |  |
| 15       |          | 257      | 75                | ✓ 75                 | xx                                 | x     |       |     | x   | x   |     |       |  |        |          |  |  |  |
| 16       |          | 258      | 50                | ✓ 49                 | x                                  | x     |       |     | x   | x   | x   | x     |  |        |          |  |  |  |
| 17       |          | 259      | 25                | ✓ 24                 | x                                  | x     |       |     | x   | xxx | x   | x     |  |        |          |  |  |  |
| 18       |          | 260      | 10                | ✓ 10                 | x                                  | x     |       |     | x   | x   | x   | x     |  | x      |          |  |  |  |
| 19       |          | 261      | 5                 | ✓ 5                  | x                                  | x     |       | x   | x   | x   |     |       |  |        |          |  |  |  |
| 20       |          | 262      | 1250              | ✓ 1250               |                                    |       |       |     |     |     |     |       |  | x      |          |  |  |  |
| 21       |          | 870      | 1000              | ✓ 1000               |                                    |       |       |     |     |     |     | x     |  |        |          |  |  |  |
| 22       |          |          |                   |                      |                                    |       |       |     |     |     |     |       |  |        |          |  |  |  |
| 23       |          |          |                   |                      |                                    |       |       |     |     |     |     |       |  |        |          |  |  |  |
| 24       |          |          |                   |                      |                                    |       |       |     |     |     |     |       |  |        |          |  |  |  |

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

Bottom Depth: 1315 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2149 | 1349  |
| Bottom | 2212 |       |
| End    | 2249 |       |

Positional Information  
Start  
Lat: 48 ° 38.99 N  
Lon: 126 ° 39.99 W

Bottom  
Lat: 48 ° 38.99 N  
Lon: 126 ° 39.99 W

End  
Lat: 48 ° 39.01 N  
Lon: 126 ° 40.02 W

Extra comments:  
Deep cast - OUT-OF-ORDER  
1 - 3; 20 - 21; 4 - 19

## Water Properties Group

## Sampling Log

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

Cruise ID: 2015-01

Station: P4

Event #: 122

Ship: Tully

UTC Date (dd|mmm|yyyy): 22 | 02 | 15

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |            |     |        |  |  |  |  | Comments          |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------------|-----|--------|--|--|--|--|-------------------|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | TM filt                            | TM un-filt | Sal | Nut-Fr |  |  |  |  |                   |  |  |  |  |
| 1        |          | 875      | 800               |                      | x                                  | x          | x   | x      |  |  |  |  | 800m Did not fire |  |  |  |  |
| 2        |          | 876      | 600               |                      | x                                  | x          |     |        |  |  |  |  |                   |  |  |  |  |
| 3        |          | 877      | 400               |                      | xx                                 | xx         |     |        |  |  |  |  |                   |  |  |  |  |
| 4        |          | 878      | 200               |                      | x                                  | x          |     |        |  |  |  |  |                   |  |  |  |  |
| 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): | KS  |     |          |        |

|                     |      |   |   |
|---------------------|------|---|---|
| Bottom Depth:       | 1315 | m |   |
| Transmisso Cleaned: | Y    | / | N |

|        |                  |                  |
|--------|------------------|------------------|
| Time   | 23:00 UTC        | 15:00 Local      |
| Start  | <del>22:50</del> | <del>14:50</del> |
| Bottom |                  | 0                |
| End    | 13:54            | 15:54            |

|                        |                    |
|------------------------|--------------------|
| Positional Information |                    |
| Start                  | Lat: 48 ° 38.95 N  |
|                        | Lon: 126 ° 38.85 W |
|                        | ▼ ?                |

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

|     |                    |
|-----|--------------------|
| End | Lat: 48 ° 38.95 N  |
|     | Lon: 126 ° 38.49 W |

|                    |
|--------------------|
| Extra comments:    |
| TM Deep Go-flos    |
| 800m did not close |

Water Properties Group

Sampling Log

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

Cruise ID: 2015-01 Station: P3 Event #: 123 Ship: Tully UTC Date (dd|mmm|yyyy): 23 | 02 | 2015

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |  |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|--|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target            | Confirmed |          | Nd                                 |  |   |  |  |  |  |  |  |  |  |  |  |          |
|          |          |          | Pressure          | ✓         | Pressure |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 879      | 750               |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 880      | 625               |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 881      | 425               |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 882      | 300               |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 883      | 100               |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 884      | 50                |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 885      | 5                 |           |          |                                    |  | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |           |          |                                    |  |   |  |  |  |  |  |  |  |  |  |  |          |

Profile type: *In-situ pumps*  
ROS TRM X-Niskin other?  
Watchkeeper(s):

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

| Time   | UTC          | Local        |
|--------|--------------|--------------|
| Start  | <i>01:30</i> | <i>17:30</i> |
| Bottom | <i>02:00</i> |              |
| End    | <i>05:00</i> |              |

Positional Information  
Start  
Lat: *48* ° *37.51* N  
Lon: *126* ° *20.01* W

Bottom  
Lat: *48* ° *37.51* N  
Lon: *126* ° *20.01* W

End  
Lat: ° N  
Lon: ° W

Extra comments:  
*UBC in-situ pumps to 750 m*