

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: SI03 Event #: 1 Ship: Tully UTC Date (dd mmm yyyy): 03 06 2019

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |        |       |     |     |      |     |     |  |  | Comments |  |  |  |                    |
|----------|----------|----------|-------------------|------------|------------------------------------|--------|-------|-----|-----|------|-----|-----|--|--|----------|--|--|--|--------------------|
|          |          |          | Target            | Confirmed  | Oxy                                | Nut-Fr | Gases | Sul | DNA | Prot |     |     |  |  |          |  |  |  |                    |
|          |          |          | Pressure          | ✓ Pressure |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
|          |          |          |                   |            |                                    | MG/HA  | NA MG | J J |     | MG   | J J | J J |  |  |          |  |  |  |                    |
| 1        |          | 1        | 200               | ✓          | 200                                |        | x     | x   | xx  | x    | x   | x   |  |  |          |  |  |  | FLOUR LOOKS SPIKEY |
| 2        |          | 2        | 185               | ✓          | 185                                |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  | ↑ ON WAY DOWN      |
| 3        |          | 3        | 165               | ✓          | 165                                |        | x     | xx  | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 4        |          | 4        | 150               | ✓          | 151                                |        | xx    | x   | xx  | x    | x   | x   |  |  |          |  |  |  |                    |
| 5        |          | 5        | 135               | ✓          | 135                                |        | x     | x   | xx  | x    | x   | x   |  |  |          |  |  |  |                    |
| 6        |          | 6        | 120               | ✓          | 120                                |        | x     | x   | xx  | x    | x   | x   |  |  |          |  |  |  | OXY @ 0 ON LTD     |
| 7        |          | 7        | 110               | ✓          | 110                                |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 8        |          | 8        | 100               | ✓          | 100                                |        | x     | x   | xx  | x    | x   | x   |  |  |          |  |  |  |                    |
| 9        |          | 9        | 97                | ✓          | 97                                 |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 10       |          | 10       | 90                | ✓          | 90                                 |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 11       |          | 11       | 85                | ✓          | 85                                 |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 12       |          | 12       | 75                | ✓          | 75                                 |        | xx    | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 13       |          | 13       | 60                | ✓          | 60                                 |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 14       |          | 14       | 40                | ✓          | 40                                 |        | x     | xx  | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 15       |          | 15       | 20                | ✓          | 20                                 |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 16       |          | 16       | 10                | ✓          | 10                                 |        | xx    | x   | xx  | x    | x   | x   |  |  |          |  |  |  |                    |
| 17       |          | 17       | 0                 | ✓          | 1.67                               |        | x     | x   | xx  | x    | x   |     |  |  |          |  |  |  |                    |
| 18       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 19       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 20       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 21       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 22       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 23       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |
| 24       |          |          |                   |            |                                    |        |       |     |     |      |     |     |  |  |          |  |  |  |                    |

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

Bottom Depth: 226 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0228 | 1928  |
| Bottom | 0232 |       |
| End    | 0254 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 35.52  | N |
| Lon: | 123 ° 30.23 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 35.51  | N |
| Lon: | 123 ° 30.22 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 35.50  | N |
| Lon: | 123 ° 30.21 | W |

Extra comments:  
WRONG CRUISE #  
2019-005  
TO START MR CORRECTED

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P1 Event #: 6 Ship: Tully UTC Date (dd mmm yyyy): 3 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |        |     |      |     |     |       |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--------|-----|------|-----|-----|-------|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut-Fr | chl | HPLC | DIC | Oxy | Gases |  |  |          |
|          |          |          |                   |                      | SR/RS                              | RS  | RS     | SR  | HS   | HS  |     | July  |  |  |          |
| 1        |          | 22       | Bot-10            | ✓ 125                | x                                  |     | x      |     |      | xx  | x   |       |  |  | chl ~ 10 |
| 2        |          | 23       | 30                | ✓ 30                 | xx                                 |     | x      | x   |      | x   | x   |       |  |  | 625ml    |
| 3        |          | 24       | 5                 | ✓ 5                  | x                                  | x   | x      |     |      | x   | xx  | xx    |  |  |          |
| 4        |          | 25       | 5                 | ✓ 5                  |                                    |     | x      | xx  | xx   |     |     |       |  |  |          |
| 5        |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 6        |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 7        |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 8        |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 9        |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 10       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 11       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 12       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 13       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 14       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 15       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 16       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 17       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 18       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 19       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 20       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 21       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 22       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 23       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |
| 24       |          |          |                   |                      |                                    |     |        |     |      |     |     |       |  |  |          |

|                           |
|---------------------------|
| Profile type:             |
| ROS TRM X-Niskin other?   |
| Watchkeeper(s): <u>SL</u> |

|                     |     |   |
|---------------------|-----|---|
| Bottom Depth:       | 135 | m |
| Transmisso Cleaned: | (Y) | N |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 1627 | 0927  |
| Bottom | 1630 |       |
| End    | 1636 |       |

|                        |                   |   |
|------------------------|-------------------|---|
| Positional Information |                   |   |
| Start                  | Lat: 48 ° 34.430  | N |
|                        | Lon: 125 ° 32.140 | W |

|        |                   |   |
|--------|-------------------|---|
| Bottom | Lat: 48 ° 34.450  | N |
|        | Lon: 125 ° 30.180 | W |

|     |                   |   |
|-----|-------------------|---|
| End | Lat: 48 ° 34.470  | N |
|     | Lon: 125 ° 30.240 | W |

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

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P2 Event #: 7 Ship: Tully UTC Date (dd mmm/yyyy): 03 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |      |        |     |       |       | Comments |     |    |  |  |  |            |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|------|--------|-----|-------|-------|----------|-----|----|--|--|--|------------|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP | DMSP | Nut-Fr | Chl | HPLC  |       |          | Jun |    |  |  |  |            |
|          |          |          |                   | ✓                  |                                    | ML   | t PA | d PA   | ML  | ML/ML | P2/P3 |          |     | LS |  |  |  |            |
| 1        | 1        | 41       | 100               | ✓                  | 100                                | x    | x    | x      | x   | x     |       |          |     |    |  |  |  |            |
| 2        | 2        | 42       | 75                | ✓                  | 75                                 | x    |      |        | x   | x     |       |          |     |    |  |  |  |            |
| 3        | 3        | 43       | 50                | ✓                  | 50                                 | x    |      |        | x   | x     |       |          |     |    |  |  |  |            |
| 4        | 4        | 44       | 40                | ✓                  | 40                                 | x    |      |        | x   | xx    |       |          |     |    |  |  |  |            |
| 5        | 5        | 45       | 30                | ✓                  | 30                                 | x    |      |        | x   | x     | xx    |          |     |    |  |  |  | Fluo 0.781 |
| 6        | 6        | 46       | 25                | ✓                  | 25                                 | x    |      |        | x   | x     | xx    |          |     |    |  |  |  | Fluo 8.23  |
| 7        | 7        | 47       | 20                | ✓                  | 20                                 | xx   | xx   | xx     | x   | x     | xx    |          |     |    |  |  |  | Fluo 9.12  |
| 8        | 8        | 48       | 15                | ✓                  | 15                                 | x    |      |        | xx  | x     | xx    |          |     | x  |  |  |  | Fluo 9.03  |
| 9        | 9        | 49       | 10                | ✓                  | 10                                 | x    |      |        | xx  | xx    | xx    |          |     |    |  |  |  | Fluo 9.01  |
| 10       | 10       | 50       | 5                 | ✓                  | 5                                  | x    | x    | x      | x   | xx    | xx    |          |     |    |  |  |  | Fluo 4.32  |
| 11       | 11       | 51       | 0                 |                    | 0                                  | x    | x    | x      | x   | x     |       |          |     |    |  |  |  |            |
| 12       | 12       | 52       | Chl Max           | ✓                  | 200                                |      |      |        |     |       |       |          |     | x  |  |  |  | 9.22       |
| 13       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 14       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 15       |          |          | see next sheet    |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 16       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 17       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 18       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 19       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 20       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 21       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 22       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 23       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |
| 24       |          |          |                   |                    |                                    |      |      |        |     |       |       |          |     |    |  |  |  |            |

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

Bottom Depth: 117 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1902 | 1202  |
| Bottom | 1904 |       |
| End    | 1924 |       |

Positional Information

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

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 36.06  | N |
| Lon: | 125 ° 59.98 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 36.04  | N |
| Lon: | 126 ° 00.02 | W |

Extra comments:  
DMS  
OUT OF ORDER

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P2 Event #: 7 Ship: Tully UTC Date (dd mmm yyyy): 03 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |      |      |        |     |      |       |       | Jun |  |  |  | Comments   |
|----------|----------|----------|-------------------|------------|------------------------------------|------|------|--------|-----|------|-------|-------|-----|--|--|--|------------|
|          |          |          | Target            | Confirmed  | DMS                                | DMSP | DMSP | Nut-Fr | Chl | HPLC |       |       |     |  |  |  |            |
|          |          |          | Pressure          | ✓ Pressure |                                    | t    | MR   | MP     | d   | MR   | MG/HL | MG/HL |     |  |  |  |            |
| 1        |          | 41       | 100               |            |                                    | x    | x    | x      | x   | x    |       |       |     |  |  |  |            |
| 2        |          | 42       | 75                |            |                                    | x    |      |        | x   | x    |       |       |     |  |  |  |            |
| 3        |          | 43       | 50                |            |                                    | x    |      |        | x   | x    |       |       |     |  |  |  |            |
| 4        |          | 44       | 40                |            |                                    | x    |      |        | x   | xx   |       |       |     |  |  |  |            |
| 5        |          | 45       | 30                |            |                                    | x    |      |        | x   | x    | xx    |       |     |  |  |  | Fluo 0.781 |
| 6        |          | 46       | 25                |            |                                    | x    |      |        | x   | x    | xx    |       |     |  |  |  | Fluo 8.23  |
| 7        |          | 47       | 20                |            |                                    | xx   | xx   | xx     | x   | x    | xx    |       |     |  |  |  | Fluo 9.12  |
| 8        |          | 48       | 20                |            |                                    |      |      |        |     |      |       |       | x   |  |  |  |            |
| 9        |          | 49       | 15                |            |                                    | x    |      |        | xx  | x    | xx    |       |     |  |  |  | Fluo 9.03  |
| 10       |          | 50       | 10                |            |                                    | x    |      |        | x   | xx   | xx    |       |     |  |  |  | Fluo 9.01  |
| 11       |          | 51       | 5                 |            |                                    | x    | x    | x      | x   | x    | xx    |       |     |  |  |  | Fluo 4.32  |
| 12       |          | 52       | 0                 |            |                                    | x    | x    | x      | x   | x    |       |       |     |  |  |  |            |
| 13       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 14       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 15       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 16       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 17       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 18       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 19       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 20       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 21       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 22       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 23       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |
| 24       |          |          |                   |            |                                    |      |      |        |     |      |       |       |     |  |  |  |            |

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

Bottom Depth: 117 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1902 | 1202  |
| Bottom | 1904 |       |
| End    | 1924 |       |

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

Bottom  
Lat: 48 ° 36.06 N  
Lon: 125 ° 59.98 W

End  
Lat: 48 ° 36.04 N  
Lon: 126 ° 00.02 W

Extra comments:  
DMS  
OUT OF ORDER  
Actual sampling

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P2 Event #: 10 Ship: Tully UTC Date (dd mmm/yyyy): 03 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |             |          | Samples Taken / Sampler's Initials |       |     |     |       |         |         |         |         |          |          |  |  |  | Comments |
|----------|----------|----------|-------------------|-------------|----------|------------------------------------|-------|-----|-----|-------|---------|---------|---------|---------|----------|----------|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure | Oxy                                | Nut-F | Sal | DIC | Gases | W H DOC | W H DOC | W H TOC | W H TOC | W H Gels | W H CDOM |  |  |  |          |
|          |          |          |                   |             |          | MR                                 | ML    | MR  | MR  | FL    | SJ      | DH      | SJ      | DH      |          | SJ       |  |  |  |          |
| 1        |          | 26       | Bot-10            | ✓           | 109      | x x                                | x     |     | x   |       |         |         |         |         |          |          |  |  |  |          |
| 2        |          | 27       | Bot-10            | ✓           | 109      |                                    |       |     |     |       | x       | x       | x       | x       | x x      | x x      |  |  |  |          |
| 3        |          | 28       | 100               | ✓           | 100      | x                                  | x     |     | x x |       |         |         |         |         |          |          |  |  |  |          |
| 4        |          | 29       | 100               | ✓           | 100      |                                    |       |     |     |       |         | x       |         | x       | x x      |          |  |  |  |          |
| 5        |          | 30       | 75                | ✓           | 75       | x                                  | x x   |     | x   |       |         |         |         |         |          |          |  |  |  |          |
| 6        |          | 31       | 75                | ✓           | 75       |                                    |       |     |     |       |         | x       |         | x       | x x      |          |  |  |  |          |
| 7        |          | 32       | 50                | ✓           | 50       | x                                  | x     |     | x   |       |         |         |         |         |          |          |  |  |  |          |
| 8        |          | 33       | 50                | ✓           | 50       |                                    |       |     |     |       | x       | x       | x       | x       | x x      | x        |  |  |  |          |
| 9        |          | 34       | 25                | ✓           | 25       | x                                  | x     |     | x   |       |         |         |         |         |          |          |  |  |  |          |
| 10       |          | 35       | 25                | ✓           | 25       |                                    |       |     |     |       |         | x       |         | x       | x x      |          |  |  |  |          |
| 11       |          | 36       | 10                | ✓           | 10       | x x                                | x     |     | x   |       |         |         |         |         |          |          |  |  |  |          |
| 12       |          | 37       | 10                | ✓           | 10       |                                    |       |     |     |       |         | x       |         | x       | x x      |          |  |  |  |          |
| 13       |          | 38       | 5                 | ✓           | 5        | x                                  | x     | x   | x   | x x   |         |         |         |         |          |          |  |  |  |          |
| 14       |          | 39       | 5                 | ✓           | 5        |                                    |       |     |     |       |         | x       |         | x       | x x      |          |  |  |  |          |
| 15       |          | 40       | 0                 | ✓           | 2.7      |                                    |       |     |     |       | x x     |         | x       |         |          | x        |  |  |  |          |
| 16       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 17       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 18       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 19       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 20       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 21       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 22       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 23       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |
| 24       |          |          |                   |             |          |                                    |       |     |     |       |         |         |         |         |          |          |  |  |  |          |

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

Bottom Depth: 119 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2038 | 1338  |
| Bottom | 2041 |       |
| End    | 2050 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 36 03  | N |
| Lon: | 126 ° 00 25 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 36 02  | N |
| Lon: | 126 ° 00 25 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 35 99  | N |
| Lon: | 126 ° 00 22 | W |

Extra comments:  
Deep cast

## Sampling Log

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

Cruise ID:

2019-006

**Station:**

P3

**Event #:**

10

**Ship:**

Tully

UTC Date (dd mmm yyyy):

03 06 19

[illegible]

Profile type: ROS TRM X-Niskin other?

Watchkeeper(s): MG

Bottom Depth: 820 m

Transmisso Cleaned: Y / N

| <i>Time</i>   | <i>UTC</i> | <i>Local</i> |
|---------------|------------|--------------|
| <b>Start</b>  | 2246       | 1546         |
| <b>Bottom</b> | 2307       |              |
| <b>End</b>    | 2322       |              |

| Positional Information |             |
|------------------------|-------------|
| Lat:                   | 48 ° 37.45  |
| Lon:                   | 126 ° 20.16 |

|        |                  |
|--------|------------------|
| Bottom | Lat: 48 ° 37.45  |
|        | Lon: 126 ° 20.10 |

|     |                  |
|-----|------------------|
| End | Lat: 48 ° 37.45  |
|     | Lon: 126 ° 20.02 |

**Extra comments:**

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 12 Ship: Tully UTC Date (dd mmm yyyy): 04 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |      |       |  | Chl | HPLC          | Phyto | Jun |  |  |  |  | Comments         |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|------|-------|--|-----|---------------|-------|-----|--|--|--|--|------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP | DMSP | Nut-F |  |     |               |       |     |  |  |  |  |                  |
|          |          |          |                   |                      | MR/MP                              |      | d    | NA    |  | JS  | MG            | MG    | JS  |  |  |  |  |                  |
| 1        |          | 54       | 300               | ✓ 300                | x                                  |      |      | x     |  |     |               |       |     |  |  |  |  |                  |
| 2        |          | 55       | 200               | ✓ 200                | x                                  | x    | x    | x     |  |     |               |       |     |  |  |  |  |                  |
| 3        |          | 56       | 150               | ✓ 150                | x                                  | x    | x    | x     |  |     |               |       |     |  |  |  |  |                  |
| 4        |          | 57       | 100               | ✓ 100                | x                                  |      |      | x     |  | x   |               |       |     |  |  |  |  |                  |
| 5        |          | 58       | 75                | ✓ 74                 | x                                  |      |      | xx    |  | x   |               |       |     |  |  |  |  |                  |
| 6        |          | 59       | 60                | ✓ 60                 |                                    |      |      | x     |  | x   | xx            |       |     |  |  |  |  | FLR 0.5          |
| 7        |          | 60       | 50                | ✓ 50                 | x                                  |      |      | x     |  | x   | xx            |       |     |  |  |  |  | FLR 1.6          |
| 8        |          | 61       | 40                | ✓ 40                 | x                                  |      |      | x     |  | x   | xx            |       |     |  |  |  |  | FLR 3.9          |
| 9        |          | 62       | 30                | ✓ 30                 | x                                  | x    | x    | x     |  | x   | xx            |       |     |  |  |  |  | FLR 5.3          |
| 10       |          | 63       | 25                | ✓ 25                 | x                                  |      |      | x     |  | x   |               |       |     |  |  |  |  |                  |
| 11       |          | 64       | 20                | ✓ 20                 | xx                                 | xx   | xx   | x     |  | x   |               |       |     |  |  |  |  |                  |
| 12       |          | 65       | 15                | ✓ 15                 | x                                  |      |      | x     |  | x   | xx            |       |     |  |  |  |  | FLR 5.5          |
| 13       |          | 66       | 10                | ✓ 10                 | x                                  |      |      | x     |  | xx  |               |       |     |  |  |  |  |                  |
| 14       |          | 67       | 5                 | ✓ 5                  | x                                  | x    | x    | x     |  |     |               |       |     |  |  |  |  |                  |
| 15       |          | 68       | 5                 | ✓ 5                  |                                    |      |      | x     |  | x   | <del>xx</del> | xxx   |     |  |  |  |  | PAR ~200 FLR 3.6 |
| 16       |          | 69       | 0                 | ✓ 0                  | x                                  | x    | x    | x     |  | xx  |               |       |     |  |  |  |  | PAR 470          |
| 17       |          | 70       | Chl Max           | ✓ 20                 |                                    |      |      |       |  |     |               |       | x   |  |  |  |  | PAR 3.5          |
| 18       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 19       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 20       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 21       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 22       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 23       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |
| 24       |          |          |                   |                      |                                    |      |      |       |  |     |               |       |     |  |  |  |  |                  |

65 A

HPLC

P4

15 m

19-006

Bot. 12

✓

65 B

HPLC

P4

15 m

19-006

Bot. 12

✓

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

|                     |      |   |
|---------------------|------|---|
| Bottom Depth:       | 1320 | m |
| Transmisso Cleaned: | (Y)  | N |

| Time   | UTC  | Local      |
|--------|------|------------|
| Start  | 0134 | 1835 03/19 |
| Bottom | 0140 |            |
| End    | 0201 |            |

|                        |             |   |
|------------------------|-------------|---|
| Positional Information |             |   |
| Lat:                   | 48 ° 38.97  | N |
| Lon:                   | 126 ° 39.94 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38.95  | N |
| Lon: | 126 ° 39.90 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38.91  | N |
| Lon: | 126 ° 39.83 | W |

Extra comments:

DMS cast

OUT-OF-ORDER!

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 13 Ship: Tully UTC Date (dd/mm/yyyy): 04 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |     |       |       |       |     |     |     |       |      |      | Comments |  |  |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|-----|-------|-------|-------|-----|-----|-----|-------|------|------|----------|--|--|
|          |          |          | Target            | Confirmed |          | Oxy                                | Sal | Nut-F | Nut-C | DIC   | TOC | DOC | DNA | gases | SAGs | Gels |          |  |  |
|          |          |          | Pressure          | ✓         | Pressure | MG/JS                              | MG  | JS NA | JS NA | HR/NA | DH  | DH  | NA  | JS    | JS   |      |          |  |  |
| 1        |          | 71       | Bot-10            | ✓         | 1321     | x                                  |     | x     | x     | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 2        |          | 72       | 1250              | ✓         | 1250     | x                                  | x   | x     | x     | xx    |     |     | x   |       | x    |      |          |  |  |
| 3        |          | 73       | 1250              | ✓         | 1250     | x                                  | x   | x     | x     | x     | x   | x   |     |       |      | x    |          |  |  |
| 4        |          | 74       | 1000              | ✓         | 1000     | x                                  | xx  | x     | x     | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 5        |          | 75       | 800               | ✓         | 800      | xx                                 | x   | x     | x     | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 6        |          | 76       | 600               | ✓         | 600      | x                                  |     | xx    | xx    | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 7        |          | 77       | 400               | ✓         | 400      | x                                  |     | x     | x     | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 8        |          | 78       | 300               | ✓         | 300      | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 9        |          | 79       | 250               | ✓         | 250      | xx                                 |     | x     |       | x     | x   | x   |     |       |      | x    |          |  |  |
| 10       |          | 80       | 200               | ✓         | 200      | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 11       |          | 81       | 175               | ✓         | 175      | x                                  |     | x     |       | x     | x   | x   |     |       |      | x    |          |  |  |
| 12       |          | 82       | 150               | ✓         | 150      | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 13       |          | 83       | 125               | ✓         | 125      | x                                  |     | xx    |       | x     | x   | x   |     |       |      | x    |          |  |  |
| 14       |          | 84       | 100               | ✓         | 100      | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 15       |          | 85       | 75                | ✓         | 75       | x                                  |     | x     |       | x     | x   | x   |     |       |      | x    |          |  |  |
| 16       |          | 86       | 50                | ✓         | 51       | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 17       |          | 87       | 25                | ✓         | 25       | xx                                 |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 18       |          | 88       | 10                | ✓         | 10       | x                                  |     | x     |       | x     | x   | x   | x   |       | x    | x    |          |  |  |
| 19       |          | 89       | 5                 | ✓         | 5        | x                                  | x   | x     |       | x     | x   | x   |     | xx    |      | x    |          |  |  |
| 20       |          |          |                   |           |          |                                    |     |       |       |       |     |     |     |       |      |      |          |  |  |
| 21       |          |          |                   |           |          |                                    |     |       |       |       |     |     |     |       |      |      |          |  |  |
| 22       |          |          |                   |           |          |                                    |     |       |       |       |     |     |     |       |      |      |          |  |  |
| 23       |          |          |                   |           |          |                                    |     |       |       |       |     |     |     |       |      |      |          |  |  |
| 24       |          |          |                   |           |          |                                    |     |       |       |       |     |     |     |       |      |      |          |  |  |

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

Bottom Depth: 1320 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0247 | 1947  |
| Bottom | 0310 | 2010  |
| End    | 0349 | 2049  |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38.93  | N |
| Lon: | 126 ° 39.83 | W |

Start

Bottom

Lat: 48 ° 38.91 N  
Lon: 126 ° 39.79 W

End

Lat: 48 ° 38.89 N  
Lon: 126 ° 39.72 W

Extra comments:  
Deep cast  
Loops: 2x OXY

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 17 Ship: Tully UTC Date (dd|mmm|yyyy): 4 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | UBC                                |  |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 90       | Bot-10            | ✓ 1310               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 91       | Bot-10            | ✓ 1310               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 92       | Bot-10            | ✓ 1310               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 93       | Bot-10            | ✓ 1310               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 94       | 1000              | ✓ 1001               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 95       | 1000              | ✓ 1001               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 96       | 1000              | ✓ 1001               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 97       | 1000              | ✓ 1001               |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 98       | 500               | ✓ 500                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 99       | 500               | ✓ 500                |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 100      | 500               | ✓ 500                |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 101      | 500               | ✓ 500                |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 102      | 10                | ✓ 10                 | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 103      | 10                | ✓ 10                 |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 104      | 10                | ✓ 10                 |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 105      | 10                | ✓ 10                 |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 1320 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0811 | 0111  |
| Bottom | 0835 |       |
| End    | 0903 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48° 38.970  | N |
| Lon: | 126° 39.850 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48° 29.960  | N |
| Lon: | 126° 39.870 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48° 38.970  | N |
| Lon: | 126° 39.830 | W |

Extra comments:  
UBC cast

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 18 Ship: Tully UTC Date (dd mmm yyyy): 4 June 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Var                                |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 106      | Chl Max           | / 25                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 107      | Chl Max           | / 25                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 108      | Chl Max           | / 25                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 109      | Chl Max           | / 25                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 110      | Chl Max           | / 25                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 111      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 112      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 113      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 114      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 115      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 1318 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0922 | 0222  |
| Bottom | 0926 |       |
| End    | 0931 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48° 39.010  | N |
| Lon: | 126° 39.960 | W |

Start

Bottom

End

Lat: 48° 39.000 N  
Lon: 126° 39.960 W

Lat: 48° 39.010 N  
Lon: 126° 39.950 W

Extra comments:

Productivity cast

CTD to 150 m!

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P5 Event #: 19 Ship: Tully UTC Date (dd mmm yyyy): 4 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |     |     |      |       |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|------------|------------------------------------|-----|-----|------|-------|--|--|--|--|--|----------|
|          |          |          | Target            | Confirmed  | Nut-F                              | Sal | Chl | HPLC | Gases |  |  |  |  |  |          |
|          |          |          | Pressure          | ✓ Pressure |                                    |     |     |      | UBC   |  |  |  |  |  |          |
| 1        |          | 116      | 5                 | ✓          | x                                  | x   | xx  | xx   | xx    |  |  |  |  |  |          |
| 2        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 3        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 4        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 5        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 6        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 7        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 8        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 9        |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 10       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 11       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 12       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 13       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 14       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 15       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 16       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 17       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 18       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 19       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 20       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 21       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 22       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 23       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |
| 24       |          |          |                   |            |                                    |     |     |      |       |  |  |  |  |  |          |

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

Bottom Depth: 2205 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1205 | 0505  |
| Bottom | 1240 |       |
| End    | 1314 |       |

Positional Information  
Start  
Lat: 48° 41.460 N  
Lon: 127° 9.990 W

Bottom  
Lat: 48° 41.490 N  
Lon: 127° 10.100 W

End  
Lat: 48° 41.510 N  
Lon: 127° 10.060 W

Extra comments:  
Loops: 1xNut, 1xSal, 2xChl

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006

Station: P6

Event #: 21

Ship: Tully

UTC Date (dd mmm yyyy): 4 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |       |     | Comments |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-------|-----|----------|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | Gases | UBC |          |  |  |  |  |  |  |  |  |
| 1        |          | 117      | 5                 | ✓                  | x                                  | x   | xx  | xx   | xx    |     |          |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |

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

Watchkeeper(s): SN

Bottom Depth: 2545 m

Transmisso Cleaned: ☒ Y / ☐ N

|        | UTC  | Local |
|--------|------|-------|
| Start  | 1534 | 0834  |
| Bottom | 1603 |       |
| End    | 1643 |       |

Positional Information

Start

Lat: 48 ° 44.580 N

Lon: 127 ° 39.990 W

Bottom

Lat: 48 ° 44.690 N

Lon: 127 ° 39.990 W

End

Lat: 48 ° 44.590 N

Lon: 127 ° 39.960 W

Extra comments:

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P7 Event #: 22 Ship: Tully UTC Date (dd mmm yyyy): 04 / 06 / 19

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |     |     |      |       |  |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|-----|-----|------|-------|--|--|--|--|--|----------|--|--|--|
|          |          |          | Target            | Confirmed |          | Nut-F                              | Sal | Chl | HPLC | Gases |  |  |  |  |  |          |  |  |  |
|          |          |          | Pressure          | ✓         | Pressure |                                    |     |     |      | UBC   |  |  |  |  |  |          |  |  |  |
| 1        |          | 118      | 5                 | ✓         | 5        | x                                  | x   | x x | x x  | x x   |  |  |  |  |  |          |  |  |  |
| 2        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 3        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 4        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 5        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 6        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 7        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 8        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 9        |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 10       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 11       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 12       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 13       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 14       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 15       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 16       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 17       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 18       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 19       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 20       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 21       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 22       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 23       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 24       |          |          |                   |           |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |

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

Bottom Depth: 2508 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1918 | 1218  |
| Bottom | 1954 |       |
| End    | 2028 |       |

Positional Information  
Start  
Lat: 48 ° 46.57 N  
Lon: 128 ° 10.08 W

Bottom  
Lat: 48 ° 46.56 N  
Lon: 128 ° 10.09 W

End  
Lat: 48 ° 46.54 N  
Lon: 126 ° 10.12 W

Extra comments:  
Loops: 1xNut, 1xSal, 2xChl

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P8 Event #: 23 Ship: Tully UTC Date (dd mmm/yyyy): 04 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |        |       |       |      |       |     |     |      | Comments |     |    |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--------|-------|-------|------|-------|-----|-----|------|----------|-----|----|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut Fr | Nut C | Chl   | HPLC | Gases | TOC | DOC | Gels |          |     |    |  |
|          |          |          |                   |                      | MG                                 | JS  | JS M   | JS    | JS/NA | MA   | JS    | DH  | DH  |      |          | JUN | MA |  |
| 1        |          | 119      | 2000              | ✓ 2000               | x                                  | xx  | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 2        |          | 120      | 1500              | ✓ 1500               | xx                                 | x   | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 3        |          | 121      | 1250              | ✓ 1251               | x                                  | xx  | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 4        |          | 122      | 1000              | ✓ 1001               | x                                  | x   | xx     | xx    |       |      |       | x   | x   | x    |          |     |    |  |
| 5        |          | 123      | 800               | ✓ 800                | x                                  | x   | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 6        |          | 124      | 600               | ✓ 600                | x                                  |     | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 7        |          | 125      | 400               | ✓ 400                | x                                  |     | x      | x     |       |      |       | x   | x   | x    |          |     |    |  |
| 8        |          | 126      | 300               | ✓ 300                | xx                                 |     | x      |       |       |      |       | x   | x   | x    |          |     |    |  |
| 9        |          | 127      | 250               | ✓ 250                | x                                  |     | x      |       |       |      |       | x   | x   | x    |          |     |    |  |
| 10       |          | 128      | 200               | ✓ 200                | x                                  |     | x      |       |       |      |       | x   | x   | x    |          |     |    |  |
| 11       |          | 129      | 175               | ✓ 175                | x                                  |     | x      |       |       |      |       | x   | x   | x    |          |     |    |  |
| 12       |          | 130      | 150               | ✓ 150                | x                                  |     | x      |       |       |      |       | x   | x   | x    |          |     |    |  |
| 13       |          | 131      | 100               | ✓ 100                | x                                  |     | x      |       | x     |      |       | x   | x   | x    |          |     |    |  |
| 14       |          | 132      | 75                | ✓ 75                 | x                                  |     | x      |       | xx    |      |       | x   | x   | x    |          |     |    |  |
| 15       |          | 133      | 60                | ✓ 60                 | xx                                 |     | x      |       | x     | xx   |       |     |     |      |          |     |    |  |
| 16       |          | 134      | 50                | ✓ 50                 | x                                  |     | x      |       | x     | xx   |       | x   | x   | x    |          |     |    |  |
| 17       |          | 135      | 40                | ✓ 40                 | x                                  |     | x      |       | x     | xx   |       |     |     |      |          |     |    |  |
| 18       |          | 136      | 30                | ✓ 30                 | x                                  |     | x      |       | x     | xx   |       |     |     |      |          |     |    |  |
| 19       |          | 137      | 25                | ✓ 25                 | x                                  |     | x      |       | x     |      |       | x   | x   | x    |          |     |    |  |
| 20       |          | 138      | 20                | ✓ 20                 | x                                  |     | xx     |       | xx    |      |       |     |     |      |          |     |    |  |
| 21       |          | 139      | 15                | ✓ 15                 | x                                  |     | x      |       | x     | xx   |       |     |     |      |          |     |    |  |
| 22       |          | 140      | 10                | ✓ 10                 | x                                  |     | x      |       | x     |      |       | x   | x   | x    |          |     |    |  |
| 23       |          | 141      | 5                 | ✓                    | xx                                 | x   | x      |       |       |      | xx    | x   | x   | x    |          |     |    |  |
| 24       |          | 142      | 5                 | ✓                    |                                    |     | x      |       | x     | xx   |       |     |     |      |          |     |    |  |

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

Bottom Depth: 2521 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2255 | 1558  |
| Bottom | 2327 |       |
| End    | 0019 |       |

Positional Information

|                  |   |
|------------------|---|
| Lat: 48 ° 49.03  | N |
| Lon: 128 ° 40.09 | W |

Start

|                  |   |
|------------------|---|
| Lat: 48 ° 49.06  | N |
| Lon: 128 ° 40.06 | W |

Bottom

|                  |   |
|------------------|---|
| Lat: 48 ° 49.02  | N |
| Lon: 128 ° 40.01 | W |

Extra comments:  
Plus loops 2x OXY

135  
Nut-F  
P8  
40 m  
19-006  
Bot. 17

NOT ENOUGH WATER

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P9 Event #: 26 Ship: Tully UTC Date (dd:mmm:yyyy): 05 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |     |      |       |     | Comments |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-----|------|-------|-----|----------|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Chl | HPLC | Gases | UBC |          |  |  |  |  |  |  |  |  |
| 1        |          | 143      | 5                 | <input checked="" type="checkbox"/>                    | x                                  | x   | xx  | xx   | xx    |     |          |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |

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

Bottom Depth: 2344 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0554 | 2254  |
| Bottom | 0625 |       |
| End    | 0657 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 51.41  | N |
| Lon: | 129 ° 09.92 | W |

Start

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 51.39  | N |
| Lon: | 129 ° 09.91 | W |

Bottom

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 51.340 | N |
| Lon: | 129 ° 9.940 | W |

End

Extra comments:

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P10 Event #: 27 Ship: Tully UTC Date (dd mmm yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |     |      |       |     | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|-----|------|-------|-----|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Chl | HPLC | Gases | UBC |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 144      | 5                 | <input checked="" type="checkbox"/>                    | x                                  | x   | xx  | xx   | xx    |     |          |  |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                                                        |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |

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

Watchkeeper(s): SL

Bottom Depth: 2646 m

Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0923 | 0223  |
| Bottom | 0956 |       |
| End    | 1027 |       |

Positional Information

Start

Lat: 48° 53.690 N

Lon: 129° 40.090 W

Bottom

Lat: 48° 53.710 N

Lon: 129° 39.950 W

End

Lat: 48° 53.610 N

Lon: 129° 39.980 W

Extra comments:

Loops: 1xNut, 1xSal, 2xChl

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P11 Event #: 28 Ship: Tully UTC Date (dd mmm yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |           |  | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|-----------|--|----------|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC | Gases UBC |  |          |  |  |  |  |  |
| 1        |          | 145      | 5                 | ✓                    | x                                  | x   | xx  | xx   | xx        |  |          |  |  |  |  |  |
| 2        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 3        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 4        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 5        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 6        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 7        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 8        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 9        |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 10       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 11       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 12       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 13       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 14       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 15       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 16       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 17       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 18       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 19       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 20       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 21       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 22       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 23       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |
| 24       |          |          |                   |                      |                                    |     |     |      |           |  |          |  |  |  |  |  |

chl samples not taken - not enough water

145 A  
CHL  
P11  
5 m  
19-006  
Bot 1

145 B  
CHL  
P11  
5 m  
19-006  
Bot 1

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

Bottom Depth: 2575 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1253 | 0553  |
| Bottom | 1327 |       |
| End    | 1401 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 56.030 | N |
| Lon: | 130 ° 9.940 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 55.92  | N |
| Lon: | 130 ° 09.93 | W |

▼

|      |              |   |
|------|--------------|---|
| Lat: | 48 ° 55.750  | N |
| Lon: | 130 ° 10.060 | W |

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P12 Event #: 29 Ship: Tully UTC Date (dd mmm yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Var                                |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 146      | Chl Max           | / 62                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 147      | Chl Max           | / 62                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 148      | Chl Max           | / 62                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 149      | Chl Max           | / 62                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 150      | Chl Max           | / 62                 | x                                  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 151      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 152      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 153      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 154      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 155      | 5                 | / 5                  | x                                  |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |  |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 3226 m  
Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1636 | 0936  |
| Bottom | 1640 |       |
| End    | 1645 |       |

Positional Information  
Start  
Lat: 49 ° 58.220 N  
Lon: 130 ° 40.020 W

Start

Bottom

Lat: 49 ° 58.220 N  
Lon: 130 ° 40.020 W

End

Lat: 49 ° 58.230 N  
Lon: 130 ° 40.020 W

Extra comments:  
Productivity cast  
CTD to 150 m!

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006

Station: P12

Event #: 3031

Ship: Tully

UTC Date (dd mmm yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |      |          | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|------|----------|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Filt | Non-Filt |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 156      | 50                | / 50               | x                                  | x   | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 2        |          | 157      | 40                | / 40               |                                    |     | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 3        |          | 158      | 25                | / 25               |                                    |     | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 4        |          | 159      | 10                | / 10               |                                    |     | 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): SP/MS

Bottom Depth: 3230 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1741 | 1041  |
| Bottom | 1751 |       |
| End    | 1804 |       |

Positional Information

Lat: 48.58197 N

Lon: 130.39973 W

Lat: 48.58196 N

Lon: 130.39975 W

Lat: 48.58197 N

Lon: 130.39973 W

Extra comments:

TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P12

Event #: 32

Ship: Tully

UTC Date (dd mmm yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |       |       |       |     |       |     |     |      |      |     |       |     | Comments |      |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-------|-------|-------|-----|-------|-----|-----|------|------|-----|-------|-----|----------|------|
|          |          |          | Target Pressure   | Confirmed Pressure | OXY                                | Sal   | Nut-F | Nut-C | DIC | TOC   | DOC | TOC | Gels | SAGs | DNA | Gases | DOC |          | CDOM |
|          |          |          |                   | ✓                  |                                    | mg/mL | JH    | JS    | JS  | MR/HA | DH  | DH  | SJ   |      | UBC | UBC   | UBC | SJ       |      |
| 1        | 2        | 160      | Bot-10            | ✓                  | 3274                               | x     |       | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 2        | 3        | 161      | 3000              | ✓                  | 3000                               | xx    | xx    | x     | x   | xx    |     |     |      |      |     |       |     |          |      |
| 3        | 4        | 162      | 3000              | ✓                  | 3000                               | x     | x     | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 4        | 5        | 163      | 2500              | ✓                  | 2501                               | x     | x     | x     | x   | x     | x   | x   |      | x    |     |       |     |          |      |
| 5        | 6        | 164      | 2000              | ✓                  | 2000                               | x     | xx    | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 6        | 7        | 165      | 1500              | ✓                  | 1500                               | x     | x     | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 7        | 8        | 166      | 1250              | ✓                  | 1250                               | x     | x     | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 8        | 9        | 167      | 1000              | ✓                  | 1000                               | x     | x     | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 9        | 10       | 168      | 800               | ✓                  | 800                                | xx    |       | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 10       | 11       | 169      | 600               | ✓                  | 601                                | x     |       | xx    | xx  | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 11       | 12       | 170      | 400               | ✓                  | 400                                | x     |       | x     | x   | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 12       | 13       | 171      | 300               | ✓                  | 300                                | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 13       | 14       | 172      | 250               | ✓                  | 250                                | xx    |       | x     |     | x     | x   | x   |      | x    |     |       |     |          |      |
| 14       | 15       | 173      | 200               | ✓                  | 200                                | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 15       | 16       | 174      | 175               | ✓                  | 175                                | x     |       | x     |     | x     | x   | x   |      | x    |     |       |     |          |      |
| 16       | 17       | 175      | 150               | ✓                  | 150                                | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 17       | 18       | 176      | 125               | ✓                  | 126                                | x     |       | x     |     | x     | x   | x   |      | x    |     |       |     |          |      |
| 18       | 19       | 177      | 100               | ✓                  | 100                                | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 19       | 20       | 178      | 75                | ✓                  | 75                                 | xx    |       | x     |     | x     | x   | x   |      | x    |     |       |     |          |      |
| 20       | 21       | 179      | 50                | ✓                  | 50                                 | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 21       | 22       | 180      | 25                | ✓                  | 25                                 | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 22       | 23       | 181      | 10                | ✓                  | 10                                 | x     |       | x     |     | x     | x   | x   |      | x    | x   | x     |     |          |      |
| 23       | 24       | 182      | 5                 | ✓                  | 5                                  | x     | x     | xx    |     | x     | x   | x   |      | x    |     |       | xx  |          |      |
| 24       | 1        | 183      | Bot-10            |                    | 3274                               |       |       |       |     |       |     |     | xx   |      |     |       |     | x        | x    |

Version: 25 Nov 2011

Transmissometer to be placed 11.5

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

Bottom Depth: 3227 m  
Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1810 | 1110  |
| Bottom | 1906 |       |
| End    | 2025 |       |

Positional Information  
Start  
Lat: 48 ° 58.20 N  
Lon: 130 ° 39.97 W

Bottom  
Lat: 48 ° 58.20 N  
Lon: 130 ° 39.97 W

End  
Lat: 48 ° 58.20 N  
Lon: 130 ° 39.97 W

Extra comments:  
Deep cast - OUT-OF-ORDER!  
Loops 2x OXY

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P12 Event #: 33 Ship: Tully UTC Date (dd mmm yyyy): 05 06 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                |          | Samples Taken / Sampler's Initials |     |      |          |  |       |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------|----------|------------------------------------|-----|------|----------|--|-------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed<br>✓ | Pressure | Nut-F                              | Sal | Filt | Non-Filt |  | Nut-C |  |  |  |  |  |  |          |
| 1        |          | 184      | 800               |                |          | x                                  | x   | x    | x        |  | x     |  |  |  |  |  |  |          |
| 2        |          | 185      | 600               |                |          |                                    |     | x    | x        |  |       |  |  |  |  |  |  |          |
| 3        |          | 186      | 400               |                |          |                                    |     | x x  | x x      |  |       |  |  |  |  |  |  |          |
| 4        |          | 187      | 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: 3232 m  
 Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 20:41 | 1341  |
| Bottom | 21:04 |       |
| End    | 21:38 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 58 20  | N |
| Lon: | 130 ° 39 97 | W |

Start

Bottom

End

Lat: 48 ° 58 20 N  
 Lon: 130 ° 39 98 W

Lat: 48 ° 58.20 N  
 Lon: 130 ° 39.97 W

Extra comments:  
 TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P12 Event #: 34 Ship: Tully UTC Date (dd|mmm|yyyy): 05|06|19

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |      |      |       |     |      |     |     | Comments |     |    |  |      |    |  |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|------|------|-------|-----|------|-----|-----|----------|-----|----|--|------|----|--|
|          |          |          | Target            | Confirmed | Pressure | DMS                                | DMSP | DMSP | Nut-F | Chl | HPLC | TOC | DOC | CDOM     | Jun |    |  |      |    |  |
|          |          |          | Pressure          | ✓         |          | Pressure                           | MR   | t MR | d MR  |     | WH   |     | MR  | MR/PR    | SJ  |    |  |      | MR |  |
| 1        |          | 188      | 300               | ✓         | 300      | x                                  |      |      | x     |     |      |     |     |          |     |    |  |      |    |  |
| 2        |          | 189      | 200               | ✓         | 200      | x                                  | x    | x    | x     |     |      |     |     |          |     |    |  |      |    |  |
| 3        |          | 190      | 150               | ✓         | 150      | x                                  | x    | x    | x     |     |      |     |     |          |     |    |  |      |    |  |
| 4        |          | 191      | 100               | ✓         | 100      | x                                  |      |      | x     | x   |      |     |     |          |     |    |  |      |    |  |
| 5        |          | 192      | 75                | ✓         | 75       | x                                  |      |      | x     | x   |      |     |     |          |     |    |  |      |    |  |
| 6        |          | 193      | 60                | ✓         | 60       |                                    |      |      | xx    | x   | xx   |     |     |          |     |    |  | 1.41 |    |  |
| 7        |          | 194      | 50                | ✓         | 50       | x                                  |      |      | x     | x   | xx   |     |     |          |     |    |  | 1.11 |    |  |
| 8        |          | 195      | 50                | ✓         | 50       |                                    |      |      |       |     |      | x   | x   | x        |     |    |  |      |    |  |
| 9        |          | 196      | 40                | ✓         | 40       | x                                  |      |      | x     | x   | xx   |     |     |          |     |    |  | 0.74 |    |  |
| 10       |          | 197      | 30                | ✓         | 30       | x                                  | x    | x    | x     | x   | xx   |     |     |          |     |    |  | 0.58 |    |  |
| 11       |          | 198      | 25                | ✓         | 25       | x                                  |      |      | x     | x   |      |     |     |          |     |    |  |      |    |  |
| 12       |          | 199      | 20                | ✓         | 21       | xx                                 | xx   | xx   | x     | x   |      |     |     |          |     |    |  |      |    |  |
| 13       |          | 200      | 15                | ✓         | 15       | x                                  |      |      | x     | x   | xx   |     |     |          |     |    |  |      |    |  |
| 14       |          | 201      | 10                | ✓         | 10       | x                                  |      |      | x     | xx  |      |     |     |          |     |    |  |      |    |  |
| 15       |          | 202      | 5                 | ✓         | 5        | x                                  | x    | x    | x     | x   | xx   |     |     |          |     |    |  |      |    |  |
| 16       |          | 203      | 0                 | ✓         | 3        | x                                  | x    | x    | x     | xx  |      |     |     |          |     |    |  |      |    |  |
| 17       |          | 204      | 0                 | ✓         | 3.2      |                                    |      |      |       |     |      | x   | xx  | xx       |     |    |  |      |    |  |
| 18       |          | 205      | Chl Max           | ✓         | 75       |                                    |      |      |       |     |      |     |     |          |     | xx |  | 1.39 |    |  |
| 19       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |
| 20       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |
| 21       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |
| 22       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |
| 23       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |
| 24       |          |          |                   |           |          |                                    |      |      |       |     |      |     |     |          |     |    |  |      |    |  |

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 3230    | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2151 | 1451  |
| Bottom | 2157 |       |
| End    | 2218 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 58.22 N      |
| Lon: 130 ° 39.90 W     |

|                    |
|--------------------|
| Bottom             |
| Lat: 48 ° 58.22 N  |
| Lon: 130 ° 39.89 W |

|                    |
|--------------------|
| End                |
| Lat: 48 ° 58.23 N  |
| Lon: 130 ° 39.90 W |

|                         |
|-------------------------|
| Extra comments:         |
| DMS cast + TOC/DOC/CDOM |
| OUT-OF-ORDER!!!         |

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P12 Event #: 35 Ship: Tully UTC Date (dd|mmm|yyyy): 05 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|------|----------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |  |  |          |
| 1        |          | 206      | 300               |                                                        | x                                  | x   | x    | x        |  |  |  |  |  |  |  |  |          |
| 2        |          | 207      | 150               |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 3        |          | 208      | 100               |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 4        |          | 209      | 75                |                                                        |                                    |     | 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): KS

Bottom Depth: 3233 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2305 | 1605  |
| Bottom | 2325 |       |
| End    | 2343 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.19  | N |
| Lon: | 130° 39.91 | W |

Start

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.19  | N |
| Lon: | 130° 39.91 | W |

Bottom

|      |            |   |
|------|------------|---|
| Lat: | 48° 58.19  | N |
| Lon: | 130° 39.91 | W |

End

Extra comments:

TM

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P12 Event #: 39 Ship: Tully UTC Date (dd mmm yyyy): 06 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure |                                    | UBC |  |  |  |  |  |  |  |  |  |  |          |
| 1        | 1        | 210      | 2000              | ✓ 2000             |                                    | x   |  |  |  |  |  |  |  |  |  |  |          |
| 2        | 2        | 211      | 2000              | ✓ 2000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 3        | 3        | 212      | 2000              | ✓ 2000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 4        | 4        | 213      | 2000              | ✓ 2000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 5        | 5        | 214      | 1000              | ✓ 1000             |                                    | x   |  |  |  |  |  |  |  |  |  |  |          |
| 6        | 6        | 215      | 1000              | ✓ 1000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 7        | 7        | 216      | 1000              | ✓ 1000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 8        | 8        | 217      | 1000              | ✓ 1000             |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 9        | 9        | 218      | 500               | ✓ 500              |                                    | x   |  |  |  |  |  |  |  |  |  |  |          |
| 10       | 10       | 219      | 500               | ✓ 499              |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 11       | 11       | 220      | 500               | ✓ 500              |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 12       | 12       | 221      | 500               | ✓ 500              |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 13       | 13       | 222      | 10                | ✓ 9.9              |                                    | x   |  |  |  |  |  |  |  |  |  |  |          |
| 14       | 14       | 223      | 10                | ✓ 10               |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 15       | 15       | 224      | 10                | ✓ 10               |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 16       | 16       | 225      | 10                | ✓ 10               |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |     |  |  |  |  |  |  |  |  |  |  |          |

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

Bottom Depth: 3230 m  
 Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local                    |
|--------|------|--------------------------|
| Start  | 0243 | 1944 <sup>05/06/19</sup> |
| Bottom | 0317 |                          |
| End    | 0355 |                          |

Positional Information

|                  |   |
|------------------|---|
| Lat: 48 ° 58.26  | N |
| Lon: 130 ° 39.86 | W |

▼

|                  |   |
|------------------|---|
| Lat: 48 ° 58.26  | N |
| Lon: 130 ° 39.86 | W |

▼

|                  |   |
|------------------|---|
| Lat: 48 ° 58.26  | N |
| Lon: 130 ° 39.86 | W |

Extra comments:  
 UBC cast

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P13 Event #: 40 Ship: Tully UTC Date (dd mmm/yyyy): 5 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |       |     | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-------|-----|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | Gases | UBC |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 226      | 5                 | ✓                  | x                                  | x   | xx  | xx   | xx    |     |          |  |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |       |     |          |  |  |  |  |  |  |  |  |  |

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

Bottom Depth: 2999 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0909 | 0209  |
| Bottom | 0943 |       |
| End    | 1013 |       |

Positional Information

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 02.630  | N |
| Lon: | 131 ° 39.860 | W |

▼

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 02.630  | N |
| Lon: | 131 ° 39.910 | W |

▼

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 2.540   | N |
| Lon: | 131 ° 40.050 | W |

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P14 Event #: 42 Ship: Tully UTC Date (dd mmm yyyy): 6 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |      |     |     |       |     |     |      |  |  | Comments |  |  |        |
|----------|----------|----------|-------------------|----------------------|------------------------------------|------|-----|-----|-------|-----|-----|------|--|--|----------|--|--|--------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | CHL                                | HPLC | Nut | Sal | Gases | TOC | DOC | Gels |  |  |          |  |  |        |
| 1        |          | 227      | Bot-10            | / 3359               |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 2        |          | 228      | 3000              | / 3000               |                                    |      |     | x x |       | x   | x   | x    |  |  |          |  |  |        |
| 3        |          | 229      | 2500              | / 2500               |                                    |      |     | x x |       | x   | x   | x    |  |  |          |  |  |        |
| 4        |          | 230      | 2250              | / 2250               |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 5        |          | 231      | 2000              | / 2000               |                                    |      |     | x x |       | x   | x   | x    |  |  |          |  |  |        |
| 6        |          | 232      | 1750              | / 1750               |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 7        |          | 233      | 1500              | / 1500               |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 8        |          | 234      | 1250              | / 1250               |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 9        |          | 235      | 1000              | / 999                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 10       |          | 236      | 800               | / 800                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 11       |          | 237      | 600               | / 600                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 12       |          | 238      | 400               | / 400                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 13       |          | 239      | 300               | / 300                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 14       |          | 240      | 250               | / 250                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 15       |          | 241      | 200               | / 200                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 16       |          | 242      | 175               | / 175                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 17       |          | 243      | 150               | / 150                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 18       |          | 244      | 125               | / 125                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 19       |          | 245      | 100               | / 100                |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 20       |          | 246      | 75                | / 75                 |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 21       |          | 247      | 50                | / 50                 |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  |        |
| 22       | N        | 248      | 25                | / 25                 |                                    |      | N   | x   |       | x   | x   | x    |  |  | N        |  |  |        |
| 23       |          | 249      | 10                | / 10                 |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |  | leaky. |
| 24       |          | 250      | 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): SR                                                                                                                     |

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 3311    | m |
| Transmisso Cleaned: | (Y) / N |   |

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1547 | 0847  |
| Bottom | 1644 |       |
| End    | 1802 |       |

|                        |
|------------------------|
| Positional Information |
| Lat: 49 ° 07.330 N     |
| Lon: 132 ° 39.980 W    |

Start

Bottom

End

|                     |
|---------------------|
| Lat: 49 ° 07.330 N  |
| Lon: 132 ° 39.910 W |

|                     |
|---------------------|
| Lat: 49 ° 07.470 N  |
| Lon: 132 ° 40.000 W |

|                 |
|-----------------|
| Extra comments: |
| TOC & Gels cast |

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P15 Event #: 44 Ship: Tully UTC Date (dd mmm yyyy): 06 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |             |          | Samples Taken / Sampler's Initials |     |     |      |       |  |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|-------------|----------|------------------------------------|-----|-----|------|-------|--|--|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure | Nut-F                              | Sal | Chl | HPLC | Gases |  |  |  |  |  |          |  |  |  |
|          |          |          |                   |             |          |                                    |     |     |      | UBC   |  |  |  |  |  |          |  |  |  |
| 1        |          | 251      | 5                 | ✓           | 5        | x                                  | x   | x x | x x  | x x   |  |  |  |  |  |          |  |  |  |
| 2        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 3        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 4        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 5        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 6        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 7        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 8        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 9        |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 10       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 11       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 12       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 13       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 14       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 15       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 16       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 17       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 18       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 19       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 20       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 21       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 22       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 23       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |
| 24       |          |          |                   |             |          |                                    |     |     |      |       |  |  |  |  |  |          |  |  |  |

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

Bottom Depth: 3403 m  
Transmisso Cleaned: ☒ Y ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2325 | 1625  |
| Bottom | 0001 |       |
| End    | 0033 |       |

Positional Information  
Start  
Lat: 49 ° 11.93 N  
Lon: 133 ° 39.95 W

Bottom  
Lat: 49 ° 11.92 N  
Lon: 133 ° 40.00 W

End  
Lat: 49 ° 11.91 N  
Lon: 133 ° 40.02 W

Extra comments:  
Loops: 1xNut, 1xSal, 2xChl

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P16 Event #: 45 Ship: Tully UTC Date (dd mmm yyyy): 07 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |    |     |     |      |       |      |     |   | Comments                 |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|----|-----|-----|------|-------|------|-----|---|--------------------------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY                                | Sal | Nut-F | Nut-C |    | TOC | DOC | Gels | Gases | SAGs | DNA |   |                          |
| 1        |          | 252      | Bot-10            | ✓                    | 3685                               | x   |       | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 2        |          | 253      | 3500              | ✓                    | 3499                               | xx  | xx    | x     | x  |     |     |      |       |      |     |   |                          |
| 3        |          | 254      | 3500              | ✓                    | 3500                               | x   | x     | x     | x  |     | x   | x    | x     |      |     |   |                          |
| 4        |          | 255      | 3000              | ✓                    | 2999                               | x   | xx    | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 5        |          | 256      | 2500              | ✓                    | 2500                               | x   | x     | x     | x  |     | x   | x    | x     |      |     |   |                          |
| 6        |          | 257      | 2000              | ✓                    | 2001                               | x   | x     | xx    | xx |     | x   | x    | x     |      | x   | x | 257C Not Found           |
| 7        |          | 258      | 1500              | ✓                    | 1500                               | x   | x     | x     | x  |     | x   | x    | x     |      | x   | x | INFROZEN TRANSFER → COOL |
| 8        |          | 259      | 1250              | ✓                    | 1250                               | xx  | x     | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 9        |          | 260      | 1000              | ✓                    | 1000                               | x   | x     | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 10       |          | 261      | 800               | ✓                    | 800                                | x   |       | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 11       |          | 262      | 600               | ✓                    | 600                                | x   |       | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 12       |          | 263      | 400               | ✓                    | 400                                | x   |       | x     | x  |     | x   | x    | x     |      | x   | x |                          |
| 13       |          | 264      | 300               | ✓                    | 300                                | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 14       |          | 265      | 250               | ✓                    | 250                                | xx  |       | xx    |    |     | x   | x    | x     |      |     |   |                          |
| 15       |          | 266      | 200               | ✓                    | 200                                | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 16       |          | 267      | 175               | ✓                    | 175                                | x   |       | x     |    |     | x   | x    | x     |      |     |   |                          |
| 17       |          | 268      | 150               | ✓                    | 150                                | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 18       |          | 269      | 125               | ✓                    | 125                                | x   |       | x     |    |     | x   | x    | x     |      |     |   |                          |
| 19       |          | 270      | 100               | ✓                    | 100                                | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 20       |          | 271      | 75                | ✓                    | 75                                 | xx  |       | x     |    |     | x   | x    | x     |      |     |   |                          |
| 21       |          | 272      | 50                | ✓                    | 50                                 | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 22       |          | 273      | 25                | ✓                    | 25                                 | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 23       |          | 274      | 10                | ✓                    | 10                                 | x   |       | x     |    |     | x   | x    | x     |      | x   | x |                          |
| 24       |          | 275      | 5                 | ✓                    | 5                                  | x   | x     | x     |    |     | x   | x    | x     | xx   |     |   |                          |

Profile type:  
ROS TRM X-Niskin other?  
Watchkeeper(s): MGBottom Depth: 3623 m  
Transmissio Cleaned: (Y) N

|            | UTC  | Local |
|------------|------|-------|
| Time Start | 0509 | 2209  |
| Bottom     | 0609 |       |
| End        | 0732 |       |

Positional Information  
Start  
Lat: 49 ° 16.97 N  
Lon: 134 ° 39.99 WBottom  
Lat: 49 ° 16.97 N  
Lon: 134 ° 39.99 WEnd  
Lat: 49 ° 16.97 N  
Lon: 134 ° 39.99 WExtra comments:  
Deep cast  
Loops: 2x Oxy

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P16 Event #: 47 Ship: Tully UTC Date (dd mmm yyyy): 7 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|------|----------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |  |  |          |
| 1        |          | 276      | 50                |                                                        | x                                  | x   | x    | x        |  |  |  |  |  |  |  |  |          |
| 2        |          | 277      | 40                |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 3        |          | 278      | 25                |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 4        |          | 279      | 10                |                                                        |                                    |     | 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): KS

Bottom Depth: 3625 m  
Transmisso Cleaned: Y / N

| Time   | UTC   | Local |
|--------|-------|-------|
| Start  | 08:40 | 01:40 |
| Bottom | 0902  |       |
| End    | 0912  | 0212  |

Positional Information  
Start Lat: 49 ° 16.99 N  
Lon: 134 ° 39.99 W

Bottom Lat: 49 ° 16.990 N  
Lon: 134 ° 40.000 W

End Lat: 49 ° 16.99 N  
Lon: 134 ° 40.00 W

Extra comments:  
TM

# Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P16

Event #: 49

Ship: Tully

UTC Date (dd mmm yyyy): 07 JUN 2019

| Niskin # |  | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |      |          |       |   |  |  |  |  | Ship: Tully |          | UTC Date (dd/mm/yyyy) |  |
|----------|--|----------|----------|-------------------|--------------------|------------------------------------|-----|------|----------|-------|---|--|--|--|--|-------------|----------|-----------------------|--|
|          |  |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Filt | Non-Filt | Nut-C |   |  |  |  |  |             | Comments |                       |  |
| 1        |  |          | 280      | 800               |                    | x                                  | x   | x    | x        |       | x |  |  |  |  |             |          |                       |  |
| 2        |  |          | 281      | 600               |                    |                                    |     | x    | x        |       |   |  |  |  |  |             |          |                       |  |
| 3        |  |          | 282      | 400               |                    |                                    |     | x    | x        |       |   |  |  |  |  |             |          |                       |  |
| 4        |  |          | 283      | 200               |                    |                                    |     | x    | x        |       |   |  |  |  |  |             |          |                       |  |
| 5        |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 6        |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 7        |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 8        |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 9        |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 10       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 11       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 12       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 13       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 14       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 15       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 16       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 17       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 18       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 19       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 20       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 21       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 22       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 23       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |
| 24       |  |          |          |                   |                    |                                    |     |      |          |       |   |  |  |  |  |             |          |                       |  |

Version: 25 Nov 2011

Transmissometer to be cleaned before each cast, do not use Ammonia products

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

Bottom Depth: 3625 m  
 Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1037 | 0337  |
| Bottom | 1106 |       |
| End    | 1135 |       |

Positional Information

|        |                  |                   |
|--------|------------------|-------------------|
| Start  | Lat: 49° 17.38 N | Lon: 134° 40.32 W |
| Bottom | Lat: 49° 17.34 N | Lon: 134° 40.25 W |
| End    | Lat: 49° 17.34 N | Lon: 134° 40.23 W |

Extra comments:  
 TM

# Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P16

Event #: 50

Ship: Tully

UTC Date (dd mmm yyyy): 7 June 2015

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Var                                |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 284      | Chl Max           | ✓ 46                 |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 285      | Chl Max           | ✓ 46                 |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 286      | Chl Max           | ✓ 46                 |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 287      | Chl Max           | ✓ 46                 |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 288      | Chl Max           | ✓ 46                 |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 289      | 5                 | ✓ 5                  |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 290      | 5                 | ✓ 5                  |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 291      | 5                 | ✓ 5                  |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 292      | 5                 | ✓ 5                  |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 293      | 5                 | ✓ 5                  |                                    | x |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |  |  |  |  |          |

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

Watchkeeper(s): SN

Bottom Depth: 3621 m

Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1145 | 0445  |
| Bottom | 1149 |       |
| End    | 1154 |       |

Positional Information

Start Lat: 49 ° 17.340 N

Start Lon: 134 ° 40.240 W

Bottom Lat: 49 ° 17.340 N

Bottom Lon: 134 ° 40.230 W

End Lat: 49 ° 17.340 N

End Lon: 134 ° 40.240 W

Extra comments:

Productivity cast

CTD to 150 m!

Cruise ID: 2019-006 Station: P16 Event #: 52 Ship: Tully UTC Date (dd mmm/yyyy): 07 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|-----|------|----------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed | Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |  |  |          |
|          |          |          |                   | ✓         |          |                                    |     |      |          |  |  |  |  |  |  |  |  |          |
| 1        |          | 294      | 300               |           |          | x                                  | x   | x    | x        |  |  |  |  |  |  |  |  |          |
| 2        |          | 295      | 150               |           |          |                                    |     | x x  | x x      |  |  |  |  |  |  |  |  |          |
| 3        |          | 296      | 100               |           |          |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 4        |          | 297      | 75                |           |          |                                    |     | 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: 3624 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1301 | 0601  |
| Bottom | 1315 |       |
| End    | 1330 |       |

Positional Information  
Start  
Lat: 48°17'08 N  
Lon: 134°39.97 W

Bottom  
Lat: 48°17.08 N  
Lon: 134°39.97 W

End  
Lat: 48°17'08 N  
Lon: 134°39.97 W

Extra comments:  
  
TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P16

Event #: 53

Ship: Tully

UTC Date (dd mmm yyyy): 07 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |      |       |  |     |      |  |     |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|------|-------|--|-----|------|--|-----|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | DMS                                | DMSP | DMSP | Nut-F |  | Chl | HPLC |  | Jun |  |          |
| 1        | 1        | 298      | 300               | ✓ 300              | x                                  |      |      | x     |  |     |      |  |     |  |          |
| 2        | 2        | 299      | 200               | ✓ 200              | x                                  | x    | x    | x     |  |     |      |  |     |  |          |
| 3        | 3        | 300      | 150               | ✓ 150              | x                                  | x    | x    | x     |  |     |      |  |     |  |          |
| 4        | 4        | 301      | 100               | ✓ 100              | x                                  |      |      | x     |  | x   |      |  |     |  |          |
| 5        | 5        | 302      | 75                | ✓ 75               | x                                  |      |      | x     |  | x   |      |  |     |  |          |
| 6        | 6        | 303      | 60                | ✓ 60               |                                    |      |      | x     |  | x   |      |  |     |  |          |
| 7        | 7        | 304      | 50 <sup>x</sup>   | ✓ 50               | x                                  |      |      | x     |  | x   | xx   |  |     |  |          |
| 8        | 9        | 305      | 40                | ✓ 40               | x                                  |      |      | x     |  | x   | xx   |  |     |  |          |
| 9        | 10       | 306      | 30                | ✓ 30               | x                                  |      |      | x     |  | x   | xx   |  |     |  |          |
| 10       | 11       | 307      | 25                | ✓ 25               | x                                  | x    | x    | x     |  | x   | xx   |  |     |  |          |
| 11       | 12       | 308      | 20                | ✓ 20               | xx                                 | xx   | xx   | x     |  | x   |      |  |     |  |          |
| 12       | 13       | 309      | 15                | ✓ 15               | x                                  |      |      | xx    |  | x   | xx   |  |     |  |          |
| 13       | 14       | 310      | 10                | ✓ 10               | x                                  |      |      | x     |  | xx  |      |  |     |  |          |
| 14       | 15       | 311      | 5                 | ✓ 5                | x                                  | x    | x    | x     |  | x   | xx   |  |     |  |          |
| 15       | 16       | 312      | 0                 | ✓ 0                | x                                  | x    | x    | x     |  | x   |      |  |     |  |          |
| 16       | 8        | 313      | Chl Max           | ✓ 45               |                                    |      |      |       |  |     |      |  | xx  |  |          |
| 17       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 18       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 19       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 20       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 21       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 22       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 23       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |
| 24       |          |          |                   |                    |                                    |      |      |       |  |     |      |  |     |  |          |

Profile type:

☒ ROS ☐ TRM ☐ X-Niskin other?

Watchkeeper(s): ML

Bottom Depth: 3624 m

Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1336 | 0636  |
| Bottom | 1342 |       |
| End    | 1400 |       |

Positional Information

|        |                 |   |
|--------|-----------------|---|
| Start  | Lat: 49° 17.08  | N |
|        | Lon: 134° 39.97 | W |
| Bottom | Lat: 49° 17.08  | N |
|        | Lon: 134° 39.97 | W |
| End    | Lat: 49° 17.08  | N |
|        | Lon: 134° 39.97 | W |

Extra comments:

DMS cast

OUT-OF-ORDER!!!

Cruise ID: 2019-006 Station: P17 Event #: 55 Ship: Tully UTC Date (dd|mmm|yyyy): 7 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |     |     |      |          |  |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|-----|-----|------|----------|--|--|--|--|--|----------|--|--|--|
|          |          |          | Target            | Confirmed | Pressure | Nut-F                              | Sal | Chl | HPLC | Gases    |  |  |  |  |  |          |  |  |  |
|          |          |          | Pressure          | ✓         |          |                                    |     |     |      | Pressure |  |  |  |  |  |          |  |  |  |
| 1        |          | 314      | 5                 | ✓         | 5        | x                                  | x   | x x | x x  | x x      |  |  |  |  |  |          |  |  |  |
| 2        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 3        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 4        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 5        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 6        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 7        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 8        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 9        |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 10       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 11       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 12       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 13       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 14       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 15       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 16       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 17       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 18       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 19       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 20       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 21       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 22       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 23       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |
| 24       |          |          |                   |           |          |                                    |     |     |      |          |  |  |  |  |  |          |  |  |  |

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

Bottom Depth: 3559 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1831 | 1131  |
| Bottom | 1904 |       |
| End    | 1935 |       |

Positional Information

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 20.900  | N |
| Lon: | 135 ° 39.890 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 20.85  | N |
| Lon: | 135 ° 39.90 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 20.85  | N |
| Lon: | 135 ° 39.87 | W |

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P18

Event #: 57

Ship: Tully

UTC Date (dd mmm yyyy): 07 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |      |     |     |       |     |     |      |  |  | Comments |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|------|-----|-----|-------|-----|-----|------|--|--|----------|--|
|          |          |          | Target Pressure   | Confirmed Pressure | CHL                                | HPLC | Nut | Sal | Gases | TOC | DOC | Gels |  |  |          |  |
| 1        |          | 315      | Bot-10            | ✓ 3892             |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 2        |          | 316      | 3500              | ✓ 3500             |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |
| 3        |          | 317      | 3000              | ✓ 3001             |                                    |      |     | x x |       | x   | x   | x    |  |  |          |  |
| 4        |          | 318      | 2500              | ✓ 2500             |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |
| 5        |          | 319      | 2000              | ✓ 2000             |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |
| 6        |          | 320      | 1750              | ✓ 1750             |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |
| 7        |          | 321      | 1500              | ✓ 1500             |                                    |      |     | x   |       | x   | x   | x    |  |  |          |  |
| 8        |          | 322      | 1250              | ✓ 1251             |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 9        |          | 323      | 1000              | ✓ 1001             |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 10       |          | 324      | 800               | ✓ 800              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 11       |          | 325      | 600               | ✓ 600              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 12       |          | 326      | 400               | ✓ 401              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 13       |          | 327      | 300               | ✓ 301              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 14       |          | 328      | 250               | ✓ 250              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 15       |          | 329      | 200               | ✓ 200              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 16       |          | 330      | 175               | ✓ 175              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 17       |          | 331      | 150               | ✓ 150              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 18       |          | 332      | 125               | ✓ 125              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 19       |          | 333      | 100               | ✓ 100              |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 20       |          | 334      | 75                | ✓ 75               |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 21       |          | 335      | 50                | ✓ 50               |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 22       |          | 336      | 25                | ✓ 25               |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 23       |          | 337      | 10                | ✓ 10               |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |
| 24       |          | 338      | 5                 | ✓ 5                |                                    |      |     |     |       | x   | x   | x    |  |  |          |  |

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

Bottom Depth: 3822 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2357 | 1657  |
| Bottom | 0059 |       |
| End    | 0227 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 25.99  | N |
| Lon: | 136 ° 39.98 | W |

Start

Bottom

Lat: 49 ° 25.99 N  
Lon: 136 ° 39.97 W

End

Lat: 49 ° 25.93 N  
Lon: 136 ° 39.91 W

Extra comments:  
TOC & Gels cast

## Water Properties Group

## Sampling Log

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

Cruise ID:

2019-006

Station:

P19

Event #:

59

Ship:

Tully

UTC Date (dd:mmm:yyyy): 08 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |           | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----------|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Chl | HPLC | Gases UBC |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 339      | 5                 | / S                | x                                  | x   | xx  | xx   | xx        |          |  |  |  |  |  |  |  |  |  |
| 2        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 3        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 4        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                    |                                    |     |     |      |           |          |  |  |  |  |  |  |  |  |  |

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

|                      |       |   |
|----------------------|-------|---|
| Bottom Depth:        | 3911  | m |
| Transmissio Cleaned: | Y / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 0644 | 2344  |
| Bottom | 0717 |       |
| End    | 0747 |       |

|                        |                    |
|------------------------|--------------------|
| Positional Information |                    |
| Start                  | Lat: 49 ° 30.02 N  |
|                        | Lon: 137 ° 39.98 W |

|        |                     |
|--------|---------------------|
| Bottom | Lat: 49 ° 29.980 N  |
|        | Lon: 137 ° 39.970 W |

|     |                     |
|-----|---------------------|
| End | Lat: 49 ° 29.930 N  |
|     | Lon: 137 ° 40.120 W |

|                            |
|----------------------------|
| Extra comments:            |
| Loops: 1xNut, 1xSal, 2xChl |

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P20 Event #: 60 Ship: Tully UTC Date (dd mmm/yyyy): 8 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |             | Samples Taken / Sampler's Initials |       |     |      |          |       |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-------------|------------------------------------|-------|-----|------|----------|-------|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure                           | Nut-F | Sal | Filt | Non-Filt | Nut-C |  |  |  |  |          |
| 1        |          | 340      | 800               |             |                                    | x     | x   | x    | x        | x     |  |  |  |  |          |
| 2        |          | 341      | 600               |             |                                    |       |     | x    | x        |       |  |  |  |  |          |
| 3        |          | 342      | 400               |             |                                    |       |     | x    | x        |       |  |  |  |  |          |
| 4        |          | 343      | 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): KL8

Bottom Depth: 3949 m  
 Transmisso Cleaned: Y / N

| Time   | UTC         | Local       |
|--------|-------------|-------------|
| Start  | <u>1207</u> | <u>0507</u> |
| Bottom | <u>1232</u> |             |
| End    | <u>1300</u> |             |

Positional Information

|      |                            |   |
|------|----------------------------|---|
| Lat: | <u>49</u> ° <u>34.247</u>  | N |
| Lon: | <u>138</u> ° <u>40.053</u> | W |

▼

|      |                            |   |
|------|----------------------------|---|
| Lat: | <u>49</u> ° <u>34.247</u>  | N |
| Lon: | <u>138</u> ° <u>40.051</u> | W |

▼

|      |                            |   |
|------|----------------------------|---|
| Lat: | <u>49</u> ° <u>34.243</u>  | N |
| Lon: | <u>138</u> ° <u>40.055</u> | W |

Extra comments:  
 TM

## Water Properties Group

## Sampling Log

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

Cruise ID:

2019-006

Station:

P20

Event #:

61

Ship:

Tully

UTC Date (dd mmm yyyy): 8 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Var                                |  |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 344      | Chl Max           | / 26               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 345      | Chl Max           | / 26               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 346      | Chl Max           | / 26               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 347      | Chl Max           | / 26               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 348      | Chl Max           | / 26               | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 349      | 5                 | / 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 350      | 5                 | / 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 351      | 5                 | / 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 352      | 5                 | / 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 353      | 5                 | / 5                | x                                  |  |  |  |  |  |  |  |  |  |  |  |          |
| 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): <u>SN</u>                                                                                                              |

|                     |               |
|---------------------|---------------|
| Bottom Depth:       | <u>3945</u> m |
| Transmisso Cleaned: | <u>0</u> / N  |

|        |             |             |
|--------|-------------|-------------|
| Time   | UTC         | Local       |
| Start  | <u>1309</u> | <u>0609</u> |
| Bottom | <u>1312</u> |             |
| End    | <u>1317</u> |             |

|                        |                            |
|------------------------|----------------------------|
| Positional Information |                            |
| Start                  | Lat: <u>49 ° 34.250</u> N  |
|                        | Lon: <u>138 ° 40.050</u> W |

|        |                            |
|--------|----------------------------|
| Bottom | Lat: <u>49 ° 34.250</u> N  |
|        | Lon: <u>138 ° 40.050</u> W |

|     |                            |
|-----|----------------------------|
| End | Lat: <u>49 ° 34.240</u> N  |
|     | Lon: <u>138 ° 40.050</u> W |

|                   |
|-------------------|
| Extra comments:   |
| Productivity cast |
| CTD to 150 m!     |

Cruise ID: 2019-006 Station: P20 Event #: 62 Ship: Tully UTC Date (dd mmm yyyy): 08 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|------|----------|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |  |  |          |
| 1        |          | 378      | 50                |                                                        | x                                  | x   | x    | x        |  |  |  |  |  |  |  |  |          |
| 2        |          | 379      | 40                |                                                        |                                    |     | xx   | xx       |  |  |  |  |  |  |  |  |          |
| 3        |          | 380      | 25                |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |          |
| 4        |          | 381      | 10                |                                                        |                                    |     | 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: 3948 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1437 | 0737  |
| Bottom | 1448 |       |
| End    | 1459 |       |

Positional Information  
Start  
Lat: 49 ° 34.06 N  
Lon: 138 ° 40.29 W

Bottom  
Lat: 49 ° 34.34 N  
Lon: 138 ° 40.29 W

End  
Lat: 49 ° 34.06 N  
Lon: 138 ° 40.29 W

Extra comments:  
TM

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P20 Event #: 63 Ship: Tully UTC Date (dd mmm yyyy): 08 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |       |      |       |  |       |       |  |     |  | Comments |  |         |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-------|------|-------|--|-------|-------|--|-----|--|----------|--|---------|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP  | DMSP | Nut-F |  | Chl   | HPLC  |  | Jun |  |          |  |         |  |
|          |          |          |                   |                      |                                    | MA/MA | d MA | HR    |  | MG/MG | MG/HR |  | MG  |  |          |  |         |  |
| 1        |          | 386      | 300               | ✓ 301                | x                                  |       |      | x     |  |       |       |  |     |  |          |  |         |  |
| 2        |          | 387      | 200               | ✓ 200                | x                                  | x     | x    | x     |  |       |       |  |     |  |          |  |         |  |
| 3        |          | 388      | 150               | ✓ 149                | x                                  | x     | x    | x     |  |       |       |  |     |  |          |  |         |  |
| 4        |          | 389      | 100               | ✓ 101                | x                                  |       |      | x     |  | x     |       |  |     |  |          |  |         |  |
| 5        |          | 390      | 75                | ✓ 75                 | x                                  |       |      | x     |  | x x   |       |  |     |  |          |  |         |  |
| 6        |          | 391      | 60                | ✓ 60                 |                                    |       |      | x     |  | x     | x x   |  |     |  |          |  |         |  |
| 7        |          | 392      | 50                | ✓ 51                 | x                                  |       |      | x     |  | x     | x x   |  |     |  |          |  | 3.358   |  |
| 8        |          | 393      | 40                | ✓ 41                 | x                                  |       |      | x     |  | x     | x x   |  |     |  |          |  | 3.6-3.9 |  |
| 9        |          | 394      | 30                | ✓ 31                 | x                                  | x     | x    | x     |  | x     | x x   |  |     |  |          |  | 3.2     |  |
| 10       |          | 395      | 25                | ✓ 25                 | x                                  |       |      | x     |  | x     |       |  |     |  |          |  |         |  |
| 11       |          | 396      | 20                | ✓ 21                 | x x                                | x x   | x x  | x     |  | x     |       |  |     |  |          |  |         |  |
| 12       |          | 397      | 15                | ✓ 15                 | x                                  |       |      | x     |  | x     | x x   |  |     |  |          |  |         |  |
| 13       |          | 398      | 10                | ✓ 11                 | x                                  |       |      | x     |  | x     |       |  |     |  |          |  |         |  |
| 14       |          | 399      | 5                 | ✓ 5                  | x                                  | x     | x    | x     |  | x     | x x   |  |     |  |          |  |         |  |
| 15       |          | 400      | 0                 | ✓ 3.6                | x                                  | x     | x    | x x   |  | x x   |       |  |     |  |          |  |         |  |
| 16       |          | 401      | Chl Max           | ✓ 40                 |                                    |       |      |       |  |       |       |  | x   |  |          |  |         |  |
| 17       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 18       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 19       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 20       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 21       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 22       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 23       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |
| 24       |          |          |                   |                      |                                    |       |      |       |  |       |       |  |     |  |          |  |         |  |

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

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

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1958 | 1258  |
| Bottom | 2002 |       |
| End    | 2025 |       |

Positional Information  
Start  
Lat: 49 ° 34.05 N  
Lon: 138 ° 39.81 W

Bottom  
Lat: 49 ° 34.05 N  
Lon: 138 ° 39.80 W

End  
Lat: 49 ° 34.03 N  
Lon: 138 ° 39.78 W

Extra comments:  
DMS cast  
OUT-OF-ORDER!!!

Cruise ID: 2019-006 Station: P20 Event #: 64 Ship: Tully UTC Date (dd mmm/yyyy): 08 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                |          | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|----------------|----------|------------------------------------|-----|------|----------|--|--|--|--|--|--|----------|--|--|
|          |          |          | Target Pressure   | Confirmed<br>√ | Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |          |  |  |
| 1        |          | 382      | 300               |                |          | x                                  | x   | x    | x        |  |  |  |  |  |  |          |  |  |
| 2        |          | 383      | 150               |                |          |                                    |     | x    | x        |  |  |  |  |  |  |          |  |  |
| 3        |          | 384      | 100               |                |          |                                    |     | x    | x        |  |  |  |  |  |  |          |  |  |
| 4        |          | 385      | 75                |                |          |                                    |     | 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):  
\_\_\_\_\_

Bottom Depth: 3948 m

Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2036 | 1336  |
| Bottom | 2054 |       |
| End    | 2111 |       |

Positional Information

Start

Lat: 49° 34.02 N

Lon: 138° 39.78 W

Bottom

Lat: 49° 34.02 N

Lon: 138° 39.77 W

End

Lat: 49° 34.02 N

Lon: 138° 39.77 W

Extra comments:

TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P20 Event #: 65 Ship: Tully UTC Date (dd/mmm/yyyy): 08 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |           |          |          |           |     |     |      |       |      |     |   |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----------|----------|----------|-----------|-----|-----|------|-------|------|-----|---|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | OXY MG/JS                          | Sal MG/ML | Nut-F JS | Nut-C JS | DIC MR/ML | TOC | DOC | Gels | Gases | SAGs | DNA |   |  |  |          |
|          |          |          |                   |                      |                                    |           |          |          |           |     |     |      |       |      |     |   |  |  |          |
| 1        |          | 354      | Bot-10            | ✓                    | 4024                               | x         |          | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 2        |          | 355      | 3500              | ✓                    | 3499                               | x         | xx       | x        | x         | xx  |     |      |       |      |     |   |  |  |          |
| 3        |          | 356      | 3500              | ✓                    | 3499                               | x         | x        | x        | x         | x   | x   | x    |       |      |     |   |  |  |          |
| 4        |          | 357      | 3000              | ✓                    | 3000                               | x         | x        | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 5        |          | 358      | 2500              | ✓                    | 2502                               | xx        | x        | x        | x         | x   | x   | x    |       |      |     |   |  |  |          |
| 6        |          | 359      | 2000              | ✓                    | 2000                               | x         | x        | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 7        |          | 360      | 1500              | ✓                    | 1502                               | x         | x        | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 8        |          | 361      | 1250              | ✓                    | 1250                               | x         | x        | xx       | xx        | x   | x   | x    |       |      | x   | x |  |  |          |
| 9        |          | 362      | 1000              | ✓                    | 999                                | x         | xx       | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 10       |          | 363      | 800               | ✓                    | 799                                | x         |          | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 11       |          | 364      | 600               | ✓                    | 600                                | xx        |          | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 12       |          | 365      | 400               | ✓                    | 400                                | x         |          | x        | x         | x   | x   | x    |       |      | x   | x |  |  |          |
| 13       |          | 366      | 300               | ✓                    | 300                                | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 14       |          | 367      | 250               | ✓                    | 251                                | x         |          | x        |           | x   | x   | x    |       |      |     |   |  |  |          |
| 15       |          | 368      | 200               | ✓                    | 201                                | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 16       |          | 369      | 175               | ✓                    | 175                                | xx        |          | x        |           | x   | x   | x    |       |      |     |   |  |  |          |
| 17       |          | 370      | 150               | ✓                    | 150                                | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 18       |          | 371      | 125               | ✓                    | 125                                | x         |          | x        |           | x   | x   | x    |       |      |     |   |  |  |          |
| 19       |          | 372      | 100               | ✓                    | 101                                | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 20       |          | 373      | 75                | ✓                    | 75                                 | x         |          | xx       |           | x   | x   | x    |       |      |     |   |  |  |          |
| 21       |          | 374      | 50                | ✓                    | 51                                 | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 22       |          | 375      | 25                | ✓                    | 25                                 | x         |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 23       |          | 376      | 10                | ✓                    | 10                                 | xx        |          | x        |           | x   | x   | x    |       |      | x   | x |  |  |          |
| 24       |          | 377      | 5                 | ✓                    | 6                                  | x         | x        | x        |           | x   | x   | x    | xx    |      |     |   |  |  |          |

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

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

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2121 | 1421  |
| Bottom | 2226 |       |
| End    | 2353 |       |

Positional Information  
 Lat: 49° 34.02 N  
 Lon: 138° 39.77 W

Start

Bottom

End

Lat: 49° 34.02 N  
 Lon: 138° 39.77 W

Lat: 49° 34.02 N  
 Lon: 138° 39.77 W

Extra comments:  
 Deep cast  
 Loops: 2x Oxy

## Water Properties Group

## Sampling Log

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

Cruise ID:

2019-006

Station:

P21

Event #:

660

Ship:

Tully

UTC Date (dd:mmm:yyyy):

09 06 19

|          |          |          | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |     |      |     |     |  |     |      |       |     | Comments |  |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-----|------|-----|-----|--|-----|------|-------|-----|----------|--|
| Niskin # | Firing # | Sample # | Target Pressure   | Confirmed Pressure | DIC+                               | TOC | DOC | CDOM | POC | PIC |  | CHL | HPLC | Nut-F | Sal | Gases    |  |
| 1        |          | 402      | 2000              | ✓ 2000             | x                                  |     |     |      |     |     |  |     |      |       | xx  |          |  |
| 2        |          | 403      | 1500              | ✓ 1502             | xx                                 |     |     |      |     |     |  |     |      |       | x   |          |  |
| 3        |          | 404      | 1000              | ✓ 1001             | x                                  |     |     |      |     |     |  |     |      |       | x   |          |  |
| 4        |          | 405      | 750               | ✓ 750              | x                                  |     |     |      |     |     |  |     |      |       | x   |          |  |
| 5        |          | 406      | 500               | ✓ 502              | x                                  |     |     |      |     |     |  |     |      |       |     |          |  |
| 6        |          | 407      | 400               | ✓ 401              |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 7        |          | 408      | 300               | ✓ 302              |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 8        |          | 409      | 250               | ✓ 249              | x                                  | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 9        |          | 410      | 200               | ✓ 200              |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 10       |          | 411      | 175               | ✓ 176              |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 11       |          | 412      | 150               | ✓ 150              |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 12       |          | 413      | 125               | ✓ 125              | x                                  | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 13       |          | 414      | 100               | ✓ 100              | x                                  | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 14       |          | 415      | 75                | ✓ 76               | xx                                 | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 15       |          | 416      | 50                | ✓ 50               | x                                  | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 16       |          | 417      | 25                | ✓ 25               | x                                  | x   | x   | x    | xx  | xx  |  |     |      |       |     |          |  |
| 17       |          | 418      | 10                | ✓ 10               | x                                  | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 18       |          | 419      | 5                 | ✓ 5                |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 19       |          | 420      | 5                 | ✓ 5                |                                    |     |     |      |     |     |  | xx  | xx   | x     | x   | xx       |  |
| 20       |          | 421      | 0                 | ✓ 12               |                                    | x   | x   | x    | x   | x   |  |     |      |       |     |          |  |
| 21       |          |          |                   |                    |                                    |     |     |      |     |     |  |     |      |       |     |          |  |
| 22       |          |          |                   |                    |                                    |     |     |      |     |     |  |     |      |       |     |          |  |
| 23       |          |          |                   |                    |                                    |     |     |      |     |     |  |     |      |       |     |          |  |
| 24       |          |          |                   |                    |                                    |     |     |      |     |     |  |     |      |       |     |          |  |

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

Bottom Depth: 3942 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0530 | 2231  |
| Bottom | 0605 |       |
| End    | 0700 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 38.14  | N |
| Lon: | 139 ° 39.97 | W |

Start

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 38.14  | N |
| Lon: | 139 ° 39.96 | W |

End

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 38.140  | N |
| Lon: | 139 ° 39.960 | W |

Extra comments:  
DIC+ : 2 squirts of HgCl.  
Use Willie's bottles in red totes  
BTL'S 14-8 Sampled before  
gas samples taken. K.S.

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P22 Event #: 69 Ship: Tully UTC Date (dd mmm yyyy): 09 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |      |     |     |       |      |     |     |      |     |     |      |       | Comments |     |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|------|-----|-----|-------|------|-----|-----|------|-----|-----|------|-------|----------|-----|
|          |          |          | Target Pressure   | Confirmed |          | CHL                                | HPLC | Nut | Sal | Gases | Gels | TOC | DOC | DIC+ | TOC | DOC | CDOM | PIC   |          | POC |
|          |          |          |                   | ✓         | Pressure |                                    |      |     |     |       |      |     |     |      |     |     |      |       |          |     |
| 1        | 1        | 422      | Bot-10            | ✓         | 3993     |                                    |      |     |     |       | x    | x   | x   |      |     |     |      |       |          |     |
| 2        | 2        | 423      | 3500              | ✓         | 3500     |                                    |      |     | x   |       | x    | x   | x   |      |     |     |      |       |          |     |
| 3        | 3        | 424      | 3000              | ✓         | 2999     |                                    |      |     | x x |       | x    | x   | x   |      |     |     |      |       |          |     |
| 4        | 4        | 425      | 2500              | ✓         | 2499     |                                    |      |     | x   |       | x    | x   | x   |      |     |     |      |       |          |     |
| 5        | 5        | 426      | 2000              | ✓         | 2000     |                                    |      |     | x   |       | x    | x   | x   | x    |     |     |      |       |          |     |
| 6        | 6        | 427      | 1500              | ✓         | 1500     |                                    |      |     | x   |       | x    | x   | x   | x x  |     |     |      |       |          |     |
| 7        | 7        | 428      | 1000              | ✓         | 999      |                                    |      |     |     |       | x    | x   | x   | x    |     |     |      |       |          |     |
| 8        | 8        | 429      | 750               | ✓         | 750      |                                    |      |     |     |       | x    | x   | x   | x    |     |     |      |       |          |     |
| 9        | 9        | 430      | 500               | ✓         | 501      |                                    |      |     |     |       | x    | x   | x   | x    |     |     |      |       |          |     |
| 10       | 10       | 431      | 400               | ✓         | 400      |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 11       | 11       | 432      | 300               | ✓         | 300      |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 12       | 12       | 433      | 250               | ✓         | 250      |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x   | x x      |     |
| 13       | 13       | 434      | 200               | ✓         | 200      |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 14       | 14       | 435      | 175               | ✓         | 175      |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 15       | 15       | 436      | 150               | ✓         | 151      |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 16       | 16       | 437      | 125               | ✓         | 125      |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x   | x x      |     |
| 17       | 17       | 438      | 100               | ✓         | 100      |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x   | x x      |     |
| 18       | 18       | 439      | 75                | ✓         | 75       |                                    |      |     |     |       | x    | x   | x   | x x  | x   | x   | x    | x x   | x x      |     |
| 19       | 19       | 440      | 50                | ✓         | 50       |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x   | x x x    |     |
| 20       | 20       | 441      | 25                | ✓         | 25       |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x x | x x      |     |
| 21       | 21       | 442      | 10                | ✓         | 10       |                                    |      |     |     |       | x    | x   | x   | x    | x   | x   | x    | x x   | x x      |     |
| 22       | 22       | 443      | 5                 | ✓         | 5        |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |
| 23       | 23       | 444      | 5                 | ✓         | 5        | x x                                | x x  | x   | x   | x x   |      |     |     |      |     |     |      |       |          |     |
| 24       | 24       | 445      | 0                 | ✓         | 0        |                                    |      |     |     |       | x    | x   | x   |      | x   | x   | x    | x x   | x x      |     |

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

Watchkeeper(s): SK

Bottom Depth: 3917 4298? m

Transmisso Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1128 | 0428  |
| Bottom | 1235 |       |
| End    | 1400 |       |

Positional Information

Start Lat: 49° 42.010 N

Start Lon: 140° 39.960 W

Bottom Lat: 49° 42.000 N

Bottom Lon: 140° 40.060 W

End Lat: 49° 42.01 N

End Lon: 140° 40.12 W

Extra comments:

DIC+ : 2 squirts of HgCl.

Use Willie's bottles in red totes

# Water Properties Group

# Sampling Log

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

Cruise ID:

2019-006

Station:

P23

Event #: 70

Ship: Tully

UTC Date (dd:mmm:yyyy): 9 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |     |      |       |     | Comments |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-----|------|-------|-----|----------|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Chl | HPLC | Gases | UBC |          |  |  |  |  |  |
| 1        |          | 446      | 5                 | ✓ 6                  | x                                  | x   | xx  | xx   | xx    |     |          |  |  |  |  |  |
| 2        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 3        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 4        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 5        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 6        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 7        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 8        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 9        |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 10       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 11       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 12       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 13       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 14       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 15       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 16       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 17       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 18       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 19       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 20       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 21       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 22       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 23       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |
| 24       |          |          |                   |                      |                                    |     |     |      |       |     |          |  |  |  |  |  |

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

Bottom Depth: 4032 m  
 Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1806 | 1106  |
| Bottom | 1840 |       |
| End    | 1911 |       |

Positional Information  
 Lat: 49 ° 46.030 N  
 Lon: 141 ° 39.970 W

Start

Lat: 49 ° 46.02 N  
 Lon: 141 ° 39.95 W

Bottom

Lat: 49 ° 46.01 N  
 Lon: 141 ° 39.97 W

End

Extra comments:  
 Loops: 1xNut, 1xSal, 2xChl

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P24 Event #: 72 Ship: Tully UTC Date (dd mmm/yyyy): 09 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |           |          | Samples Taken / Sampler's Initials |      |       |     |       |      |     |     |      |     |     |      |     | Comments |               |
|----------|----------|----------|-------------------|-----------|----------|------------------------------------|------|-------|-----|-------|------|-----|-----|------|-----|-----|------|-----|----------|---------------|
|          |          |          | Target Pressure   | Confirmed |          | CHL                                | HPLC | Nut-F | Sal | Gases | Gels | TOC | DOC | DIC+ | TOC | DOC | CDOM | PIC |          | POC           |
|          |          |          |                   | ✓         | Pressure |                                    |      |       |     |       | MO   | DH  | DH  | AF   | AF  | AF  | AF   | AF  |          | AF            |
| 1        |          | 447      | Bot-10            | ✓         | 4046     |                                    |      |       |     |       | X    | X   | X   |      |     |     |      |     |          | SPIGOT 1 OPEN |
| 2        |          | 448      | 3500              | ✓         | 3500     |                                    |      |       | X   |       | X    | X   | X   |      |     |     |      |     |          |               |
| 3        |          | 449      | 3000              | ✓         | 3000     |                                    |      |       | X X |       | X    | X   | X   |      |     |     |      |     |          |               |
| 4        |          | 450      | 2500              | ✓         | 2499     |                                    |      |       | X   |       | X    | X   | X   |      |     |     |      |     |          |               |
| 5        |          | 451      | 2000              | ✓         | 2001     |                                    |      |       | X   |       | X    | X   | X   | X    |     |     |      |     |          |               |
| 6        |          | 452      | 1500              | ✓         | 1501     |                                    |      |       | X   |       | X    | X   | X   | X X  |     |     |      |     |          |               |
| 7        |          | 453      | 1000              | ✓         | 1000     |                                    |      |       |     |       | X    | X   | X   | X    |     |     |      |     |          |               |
| 8        |          | 454      | 750               | ✓         | 751      |                                    |      |       |     |       | X    | X   | X   | X    |     |     |      |     |          |               |
| 9        |          | 455      | 500               | ✓         | 500      |                                    |      |       |     |       | X    | X   | X   | X    |     |     |      |     |          |               |
| 10       |          | 456      | 400               | ✓         | 401      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 11       |          | 457      | 300               | ✓         | 299      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 12       |          | 458      | 250               | ✓         | 250      |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X   | X        |               |
| 13       |          | 459      | 200               | ✓         | 200      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 14       |          | 460      | 175               | ✓         | 176      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 15       |          | 461      | 150               | ✓         | 150      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 16       |          | 462      | 125               | ✓         | 125      |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X   | X        |               |
| 17       |          | 463      | 100               | ✓         | 100      |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X   | X        |               |
| 18       |          | 464      | 75                | ✓         | 75       |                                    |      |       |     |       | X    | X   | X   | X X  | X   | X   | X    | X   | X        |               |
| 19       |          | 465      | 50                | ✓         | 51       |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X   | X        |               |
| 20       |          | 466      | 25                | ✓         | 25       |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X X | X X      |               |
| 21       |          | 467      | 10                | ✓         | 10       |                                    |      |       |     |       | X    | X   | X   | X    | X   | X   | X    | X   | X        |               |
| 22       |          | 468      | 5                 | ✓         | 5        |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |
| 23       |          | 469      | 5                 | ✓         | 5        | X X                                | X X  | X     | X   | X X   |      |     |     |      |     |     |      |     |          |               |
| 24       |          | 470      | 0                 | ✓         | 0.8      |                                    |      |       |     |       | X    | X   | X   |      | X   | X   | X    | X   | X        |               |

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

Bottom Depth: 3969 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2329 | 1629  |
| Bottom | 0038 |       |
| End    | 0206 |       |

Positional Information

|                  |   |
|------------------|---|
| Lat: 49 ° 50.22  | N |
| Lon: 142 ° 39.95 | W |

Start

|                  |   |
|------------------|---|
| Lat: 49 ° 50.15  | N |
| Lon: 142 ° 39.81 | W |

Bottom

|                  |   |
|------------------|---|
| Lat: 49 ° 50.24  | N |
| Lon: 142 ° 40.00 | W |

End

Extra comments:  
DIC+ : 2 squirts of HgCl.  
Use Willie's bottles in red totes

# Water Properties Group

# Sampling Log

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

Cruise ID: 2019-006 Station: P25 Event #: 74 Ship: Tully UTC Date (dd:mmm/yyyy): 10 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      |      | Samples Taken / Sampler's Initials |     |      |     |     |     |     |      |       |     | Comments |     |     |       |
|----------|----------|----------|-------------------|----------------------|------|------------------------------------|-----|------|-----|-----|-----|-----|------|-------|-----|----------|-----|-----|-------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | DIC+ | TOC                                | DOC | CDOM | POC | PIC | Oxy | CHL | HPLC | Gases | Sal |          |     |     | Nut-F |
|          |          |          |                   |                      |      |                                    |     |      |     |     |     |     |      |       |     |          |     |     |       |
| 1        |          | 471      | 2000              | ✓ 2000               | x    |                                    |     |      |     |     | x   |     |      |       |     | x x      | x   | x   |       |
| 2        |          | 472      | 1500              | ✓ 1500               | x x  |                                    |     |      |     |     | x   |     |      |       |     | x        | x   | x   |       |
| 3        |          | 473      | 1000              | ✓ 1000               | x    |                                    |     |      |     |     | x x |     |      |       |     | x        | x   | x   |       |
| 4        |          | 474      | 750               | ✓ 750                | x    |                                    |     |      |     |     | x   |     |      |       |     | x        | x x | x x |       |
| 5        |          | 475      | 500               | ✓ 500                | x    |                                    |     |      |     |     | x   |     |      |       |     |          | x   | x   |       |
| 6        |          | 476      | 400               | ✓ 400                |      |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   | x   |       |
| 7        |          | 477      | 300               | ✓ 300                |      |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 8        |          | 478      | 250               | ✓ 249                | x    |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 9        |          | 479      | 200               | ✓ 200                |      |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 10       |          | 480      | 175               | ✓ 176                |      |                                    | x   | x    | x   | x   | x x |     |      |       |     |          | x   |     |       |
| 11       |          | 481      | 150               | ✓ 150                |      |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x x |     |       |
| 12       |          | 482      | 125               | ✓ 126                | x    |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 13       |          | 483      | 100               | ✓ 100                | x    |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 14       |          | 484      | 75                | ✓ 74                 | x x  |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 15       |          | 485      | 50                | ✓ 50                 | x    |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 16       |          | 486      | 25                | ✓ 25                 | x    |                                    | x   | x    | x   | x x | x x | x   |      |       |     |          | x   |     |       |
| 17       |          | 487      | 10                | ✓ 10                 | x    |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 18       |          | 488      | 5                 | ✓ 5                  |      |                                    | x   | x    | x   | x   | x   |     |      |       |     |          | x   |     |       |
| 19       |          | 489      | 5                 | ✓ 5                  |      |                                    |     |      |     |     |     | x x | x x  | x x   | x   |          | x   |     |       |
| 20       |          | 490      | 0                 | ✓ 2                  |      |                                    | x   | x    | x   | x   | x x |     |      |       |     |          | x   |     |       |
| 21       |          |          |                   |                      |      |                                    |     |      |     |     |     |     |      |       |     |          |     |     |       |
| 22       |          |          |                   |                      |      |                                    |     |      |     |     |     |     |      |       |     |          |     |     |       |
| 23       |          |          |                   |                      |      |                                    |     |      |     |     |     |     |      |       |     |          |     |     |       |
| 24       |          |          |                   |                      |      |                                    |     |      |     |     |     |     |      |       |     |          |     |     |       |

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

Watchkeeper(s): MG/SR

Bottom Depth: 4118 m

Transmissio Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0557 | 2257  |
| Bottom | 0632 |       |
| End    | 0722 |       |

Positional Information

Lat: 50 ° 0.04 N

Lon: 143 ° 36.42 W

Lat: 50 ° 0.02 N

Lon: 143 ° 36.31 W

Lat: 50 ° 0.050 N

Lon: 143 ° 36.290 W

Extra comments:

DIC: 2 squirts of HgCl.

Use Willie's bottles in red totes

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P35 Event #: 75 Ship: Tully UTC Date (dd mmm yyyy): 10 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |            | Samples Taken / Sampler's Initials |     |     |      |  |  |  |  |  |  | Comments |  |  |
|----------|----------|----------|-------------------|------------|------------------------------------|-----|-----|------|--|--|--|--|--|--|----------|--|--|
|          |          |          | Target            | Confirmed  | Nut-F                              | Sal | Chl | HPLC |  |  |  |  |  |  |          |  |  |
|          |          |          | Pressure          | ✓ Pressure |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 1        |          | 496      | 5                 | ✓          | x                                  | x   | xx  | xx   |  |  |  |  |  |  |          |  |  |
| 2        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 3        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 4        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 5        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 6        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 7        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 8        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 9        |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 10       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 11       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 12       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 13       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 14       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 15       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 16       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 17       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 18       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 19       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 20       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 21       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 22       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 23       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |
| 24       |          |          |                   |            |                                    |     |     |      |  |  |  |  |  |  |          |  |  |

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

Bottom Depth: 4123 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1027 | 0327  |
| Bottom | 1102 |       |
| End    | 1134 |       |

Positional Information

|       |                   |   |
|-------|-------------------|---|
| Start | Lat: 50 ° 00.200  | N |
|       | Lon: 144 ° 18.260 | W |

Bottom

|                   |   |
|-------------------|---|
| Lat: 50 ° 00.260  | N |
| Lon: 144 ° 18.260 | W |

End

|                   |   |
|-------------------|---|
| Lat: 49 ° 59.960  | N |
| Lon: 144 ° 18.120 | W |

Extra comments:

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P26 Event #: 76 Ship: Tully UTC Date (dd mmm yyyy): 10 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |             | Samples Taken / Sampler's Initials |    |     |     |      |     |     |      |     |     |      |     | Comments |     |     |  |
|----------|----------|----------|-------------------|-------------|------------------------------------|----|-----|-----|------|-----|-----|------|-----|-----|------|-----|----------|-----|-----|--|
|          |          |          | Target Pressure   | Confirmed ✓ | PIC                                |    | POC |     | Gels | TOC | DOC | DIC+ | TOC | DOC | CDOM | PIC |          | POC |     |  |
|          |          |          |                   |             | SJ                                 | SJ |     | MO  | DH   | DH  | AF  | AF   | AF  | AF  | AF   | AF  |          |     |     |  |
| 1        |          | 492      | 2000              | /           | 2000                               |    |     |     |      |     | X   | X    | X   | X   |      |     |          |     |     |  |
| 2        |          | 493      | 1500              | /           | 1500                               |    |     |     |      |     | X   | X    | X   | X X |      |     |          |     |     |  |
| 3        |          | 494      | 1000              | /           | 1000                               |    |     |     |      |     | X   | X    | X   | X   |      |     |          |     |     |  |
| 4        |          | 495      | 750               | /           | 748                                |    |     |     |      |     | X   | X    | X   | X   |      |     |          |     |     |  |
| 5        |          | 496      | 500               | /           | 500                                |    |     |     |      |     | X   | X    | X   | X   |      |     |          |     |     |  |
| 6        |          | 497      | 400               | /           | 400                                |    |     | X   | X    |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 7        |          | 498      | 300               | /           | 300                                |    |     | X   | X    |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 8        |          | 499      | 250               | /           | 250                                |    |     |     |      |     | X   | X    | X   | X   | X    | X   | X        | X   | X   |  |
| 9        |          | 500      | 200               | /           | 200                                |    |     |     |      |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 10       |          | 501      | 175               | /           | 175                                |    |     |     |      |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 11       |          | 502      | 150               | /           | 150                                |    |     | X X | X X  |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 12       |          | 503      | 125               | /           | 125                                |    |     | X   | X    |     | X   | X    | X   | X   | X    | X   | X        | X   | X   |  |
| 13       |          | 504      | 100               | /           | 100                                |    |     |     |      |     | X   | X    | X   | X   | X    | X   | X        | X   | X   |  |
| 14       |          | 505      | 75                | /           | 75                                 |    |     |     |      |     | X   | X    | X   | X X | X    | X   | X        | X   | X   |  |
| 15       |          | 506      | 50                | /           | 50                                 |    |     | X   | X    |     | X   | X    | X   | X   | X    | X   | X        | X   | X   |  |
| 16       |          | 507      | 25                | /           | 25                                 |    |     | X   | X    |     | X   | X    | X   | X   | X    | X   | X        | X X | X X |  |
| 17       |          | 508      | 10                | /           | 10                                 |    |     | X   | X    |     | X   | X    | X   | X   | X    | X   | X        | X   | X   |  |
| 18       |          | 509      | 5                 | /           | 5                                  |    |     | X   | X    |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 19       |          | 510      | 0                 | /           | 3                                  |    |     | X   | X    |     | X   | X    | X   |     | X    | X   | X        | X   | X   |  |
| 20       |          |          |                   |             |                                    |    |     |     |      |     |     |      |     |     |      |     |          |     |     |  |
| 21       |          |          |                   |             |                                    |    |     |     |      |     |     |      |     |     |      |     |          |     |     |  |
| 22       |          |          |                   |             |                                    |    |     |     |      |     |     |      |     |     |      |     |          |     |     |  |
| 23       |          |          |                   |             |                                    |    |     |     |      |     |     |      |     |     |      |     |          |     |     |  |
| 24       |          |          |                   |             |                                    |    |     |     |      |     |     |      |     |     |      |     |          |     |     |  |

|                           |
|---------------------------|
| Profile type:             |
| ROS TRM X-Niskin other?   |
| Watchkeeper(s): <u>SM</u> |

|                     |                |
|---------------------|----------------|
| Bottom Depth:       | <u>4227</u> m  |
| Transmisso Cleaned: | <u>(Y)</u> / N |

|        |             |             |
|--------|-------------|-------------|
| Time   | UTC         | Local       |
| Start  | <u>1510</u> | <u>0810</u> |
| Bottom | <u>1544</u> |             |
| End    | <u>1634</u> |             |

|                                  |
|----------------------------------|
| Positional Information           |
| Lat: <u>50</u> ° <u>0.030</u> N  |
| Lon: <u>145</u> ° <u>0.050</u> W |

|                                   |
|-----------------------------------|
| Bottom                            |
| Lat: <u>50</u> ° <u>0.030</u> N   |
| Lon: <u>144</u> ° <u>59.990</u> W |

|                                  |
|----------------------------------|
| End                              |
| Lat: <u>50</u> ° <u>0.050</u> N  |
| Lon: <u>145</u> ° <u>0.010</u> W |

|                                   |
|-----------------------------------|
| Extra comments:                   |
| DIC+ : 2 squirts of HgCl.         |
| Use Willie's bottles in red totes |

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P26

Event #: 77

Ship: Tully

UTC Date (dd mmm yyyy): 10 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |       |       |       |     |     |      |       |      |     |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|-------|-------|-------|-----|-----|------|-------|------|-----|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | OXY                                | Sal | Nut-F | Nut-C | DIC   | TOC | DOC | Gels | Gases | SAGs | DNA |  |          |
|          |          |          |                   |                    | MG/JS                              | MG  | WH    | WH    | MR/HL | D   | D   | WH   | JS    | DA   | RL  |  |          |
| 1        |          | 511      | Bot-10            | ✓                  | 4318                               | x   |       | x     | x     | x   | x   | x    |       | x    | x   |  |          |
| 2        |          | 512      | 4000              | ✓                  | 4001                               | x   | x     | x     | xx    | x   | x   | x    |       | x    | x   |  |          |
| 3        |          | 513      | 3500              | ✓                  | 3499                               | x   | xx    | x     | x     | x   | x   | x    |       |      |     |  |          |
| 4        |          | 514      | 3000              | ✓                  | 3001                               | xx  | x     | x     | x     | x   | x   | x    |       | x    | x   |  |          |
| 5        |          | 515      | 2500              | ✓                  | 2500                               | x   | x     | x     | x     | x   | x   | x    |       |      |     |  |          |
| 6        |          | 516      | 2000              | ✓                  | 2000                               | x   | x     | x     | x     |     |     |      |       | x    | x   |  |          |
| 7        |          | 517      | 1500              | ✓                  | 1498                               | x   | x     | x     | x     |     |     |      |       | x    | x   |  |          |
| 8        |          | 518      | 1250              | ✓                  | 1249                               | x   | x     | x     | x     |     |     |      |       | x    | x   |  |          |
| 9        |          | 519      | 1000              | ✓                  | 999                                | x   | x     | x     | x     |     |     |      |       | x    | x   |  |          |
| 10       |          | 520      | 800               | ✓                  | 800                                | x   |       | xx    | xx    | x   |     |      |       | x    | x   |  |          |
| 11       |          | 521      | 600               | ✓                  | 601                                | xx  |       | x     | x     | x   |     |      |       | x    | x   |  |          |
| 12       |          | 522      | 400               | ✓                  | 400                                | x   |       | x     | x     | x   |     |      |       | x    | x   |  |          |
| 13       |          | 523      | 300               | ✓                  | 300                                | x   |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 14       |          | 524      | 250               | ✓                  | 250                                | x   |       | x     |       | x   |     |      |       |      |     |  |          |
| 15       |          | 525      | 200               | ✓                  | 200                                | x   |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 16       |          | 526      | 175               | ✓                  | 175                                | xx  |       | x     |       | x   |     |      |       |      |     |  |          |
| 17       |          | 527      | 150               | ✓                  | 151                                | x   |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 18       |          | 528      | 125               | ✓                  | 125                                | x   |       | x     |       | x   |     |      |       |      |     |  |          |
| 19       |          | 529      | 100               | ✓                  | 101                                | x   |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 20       |          | 530      | 75                | ✓                  | 75                                 | x   |       | x     |       | x   |     |      |       |      |     |  |          |
| 21       |          | 531      | 50                | ✓                  | 51                                 | x   |       | xx    |       | x   |     |      |       | x    | x   |  |          |
| 22       |          | 532      | 25                | ✓                  | 25                                 | x   |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 23       |          | 533      | 10                | ✓                  | 10                                 | xx  |       | x     |       | x   |     |      |       | x    | x   |  |          |
| 24       |          | 534      | 5                 | ✓                  | 5                                  | x   | x     | x     |       | x   |     |      | xx    |      |     |  |          |

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

Bottom Depth: 4226 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1753 | 1053  |
| Bottom | 1906 |       |
| End    | 2045 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 0.01   | N |
| Lon: | 144 ° 59.90 | W |

Start

Bottom

End

Lat: 50 ° 0.02 N  
Lon: 144 ° 59.99 W

Lat: 50 ° 0.01 N  
Lon: 145 ° 6.01 W

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

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P26 Event #: 78 Ship: Tully UTC Date (dd mmm/yyyy): 10 06 19

| Niskin #         | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |       |      |       |  |     |      |  |     |       | Comments |  |  |  |
|------------------|----------|----------|-------------------|----------------------|------------------------------------|-------|------|-------|--|-----|------|--|-----|-------|----------|--|--|--|
|                  |          |          | Target Pressure   | Confirmed ✓ Pressure | DMS                                | DMSP  | DMSP | Nut-F |  | Chl | HPLC |  | Jun | Phyto |          |  |  |  |
|                  |          |          |                   |                      |                                    | MA/MA |      | MA    |  | ML  | MG   |  | MG  | MR    |          |  |  |  |
| 1                |          | 535      | 300               | ✓ 300                | x                                  |       |      | x     |  |     |      |  |     |       |          |  |  |  |
| 2                |          | 536      | 200               | ✓ 200                | x                                  | x     | x    | x     |  |     |      |  |     |       |          |  |  |  |
| 3                |          | 537      | 150               | ✓ 150                | x                                  | x     | x    | x     |  |     |      |  |     |       |          |  |  |  |
| 4                |          | 538      | 100               | ✓ 100                | x                                  |       |      | x     |  | x   |      |  |     |       |          |  |  |  |
| 5                |          | 539      | 75                | ✓ 75                 | x                                  |       |      | x     |  | x   |      |  |     |       |          |  |  |  |
| 6                |          | 540      | 60                | ✓ 60                 |                                    |       |      | x x   |  | x   | x x  |  |     |       |          |  |  |  |
| 7                |          | 541      | 50                | ✓ 50                 | x                                  |       |      | x     |  | x   | x x  |  |     |       |          |  |  |  |
| 8                |          | 542      | 40                | ✓ 39                 | x                                  |       |      | x     |  | x   | x x  |  |     |       |          |  |  |  |
| 9                |          | 543      | 30                | ✓ 30                 | x                                  | x     | x    | x     |  | x   | x x  |  |     |       |          |  |  |  |
| <del>11</del>    |          | 544      | 25                | ✓ 25                 | x                                  |       |      | x     |  | x   |      |  |     |       |          |  |  |  |
| <del>11</del> 12 |          | 545      | 20                | ✓ 20                 | x x                                | x x   | x x  | x     |  | x x |      |  |     |       |          |  |  |  |
| <del>12</del> 13 |          | 546      | 15                | ✓ 15                 | x                                  |       |      | x     |  | x   | x x  |  |     |       |          |  |  |  |
| <del>13</del> 14 |          | 547      | 10                | ✓ 10                 | x                                  |       |      | x     |  | x x |      |  |     |       |          |  |  |  |
| <del>14</del> 15 |          | 548      | 5                 | ✓ 5                  | x                                  | x     | x    | x     |  | x   | x x  |  |     | x x x |          |  |  |  |
| <del>15</del> 17 |          | 549      | 0                 | ✓ 3.1                | x                                  | x     | x    | x     |  | x   |      |  |     |       |          |  |  |  |
| 16               |          | 550      | Chl Max           | ✓ 20                 |                                    |       |      |       |  |     |      |  | x   |       |          |  |  |  |
| 17               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 18               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 19               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 20               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 21               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 22               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 23               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |
| 24               |          |          |                   |                      |                                    |       |      |       |  |     |      |  |     |       |          |  |  |  |

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

Bottom Depth: 4226 m  
Transmissio Cleaned: (Y) N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 2159 | 1459  |
| Bottom | 2204 |       |
| End    | 2226 |       |

Positional Information

|      |            |   |
|------|------------|---|
| Lat: | 50 ° 0.02  | N |
| Lon: | 145 ° 0.05 | W |

Start

Bottom

|      |            |   |
|------|------------|---|
| Lat: | 50 ° 0.02  | N |
| Lon: | 145 ° 0.04 | W |

End

|      |            |   |
|------|------------|---|
| Lat: | 50 ° 59.98 | N |
| Lon: | 145 ° 0.00 | W |

Extra comments:  
DMS cast  
OUT-OF-ORDER!!!

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P26 Event #: 79 Ship: Tully UTC Date (dd mmm yyyy): 11 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  | Comments  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|---|--|--|--|--|--|--|--|--|-----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | UBC                                |   |  |  |  |  |  |  |  |  |           |
| 1        | 1        | 551      | 2000              | ✓ 2002               |                                    |   |  |  |  |  |  |  |  |  | Sarah-Ann |
| 2        | 2        | 552      | 2000              | ✓ 2001               |                                    |   |  |  |  |  |  |  |  |  | Sarah-Ann |
| 3        | 3        | 553      | 2000              | ✓ 2001               |                                    |   |  |  |  |  |  |  |  |  | Salinity  |
| 4        | 4        | 554      | 2000              | ✓ 2000               |                                    |   |  |  |  |  |  |  |  |  | Salinity  |
| 5        | 5        | 555      | 2000              | ✓ 2000               |                                    | x |  |  |  |  |  |  |  |  |           |
| 6        | 6        | 556      | 2000              | ✓ 2000               |                                    |   |  |  |  |  |  |  |  |  |           |
| 7        | 7        | 557      | 2000              | ✓ 2000               |                                    |   |  |  |  |  |  |  |  |  |           |
| 8        | 8        | 558      | 2000              | ✓ 2001               |                                    |   |  |  |  |  |  |  |  |  |           |
| 9        | 9        | 559      | 1000              | ✓ 1000               |                                    | x |  |  |  |  |  |  |  |  |           |
| 10       | 10       | 560      | 1000              | ✓ 1000               |                                    |   |  |  |  |  |  |  |  |  |           |
| 11       | 11       | 561      | 1000              | ✓ 1000               |                                    |   |  |  |  |  |  |  |  |  |           |
| 12       | 12       | 562      | 1000              | ✓ 1000               |                                    |   |  |  |  |  |  |  |  |  |           |
| 13       | 13       | 563      | 500               | ✓ 500                |                                    | x |  |  |  |  |  |  |  |  |           |
| 14       | 14       | 564      | 500               | ✓ 500                |                                    |   |  |  |  |  |  |  |  |  |           |
| 15       | 15       | 565      | 500               | ✓ 500                |                                    |   |  |  |  |  |  |  |  |  |           |
| 16       | 16       | 566      | 500               | ✓ 500                |                                    |   |  |  |  |  |  |  |  |  |           |
| 17       | 17       | 567      | 10                | ✓ 11                 |                                    | x |  |  |  |  |  |  |  |  |           |
| 18       | 18       | 568      | 10                | ✓ 11                 |                                    |   |  |  |  |  |  |  |  |  |           |
| 19       | 19       | 569      | 10                | ✓ 10                 |                                    |   |  |  |  |  |  |  |  |  |           |
| 20       | 20       | 570      | 10                | ✓ 11                 |                                    |   |  |  |  |  |  |  |  |  |           |
| 21       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |           |
| 22       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |           |
| 23       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |           |
| 24       |          |          |                   |                      |                                    |   |  |  |  |  |  |  |  |  |           |

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

Bottom Depth: 4227 m  
Transmisso Cleaned: (Y) / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0104 | 1804  |
| Bottom | 0132 |       |
| End    | 0207 |       |

Positional Information

|       |                 |   |
|-------|-----------------|---|
| Start | Lat: 50 ° 0.07  | N |
|       | Lon: 145 ° 0.02 | W |

Bottom

|                  |   |
|------------------|---|
| Lat: 50 ° 0.07   | N |
| Lon: 144 ° 59.98 | W |

End

|                  |   |
|------------------|---|
| Lat: 50 ° 0.05   | N |
| Lon: 144 ° 59.97 | W |

Extra comments:  
UBC cast  
Plus water for Sarah-Ann and salinity storage experiment

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P26 Event #: 81 Ship: Tully UTC Date (dd mmm yyyy): 11 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |      |          |       |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|------|----------|-------|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Filt | Non-Filt | Nut-C |  |  |  |  |  |          |
| 1        |          | 571      | 800               |                      | x                                  | x   | x    | x        | x     |  |  |  |  |  |          |
| 2        |          | 572      | 600               |                      |                                    |     | x    | x        |       |  |  |  |  |  |          |
| 3        |          | 573      | 400               |                      |                                    |     | x    | x        |       |  |  |  |  |  |          |
| 4        |          | 574      | 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): RS

Bottom Depth: 4229 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0712 | 0012  |
| Bottom | 0726 |       |
| End    | 0802 |       |

Positional Information  
Start  
Lat: 50° 00.02 N  
Lon: 144° 59.91 W

Bottom  
Lat: 50° 00.02 N  
Lon: 144° 59.91 W

End  
Lat: 50° 00.01 N  
Lon: 144° 59.75 W

Extra comments:  
TM

# Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P26

Event #: 82

Ship: Tully

UTC Date (dd mmm yyyy): 11 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |      |          | Comments |  |  |  |  |  |  |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|------|----------|----------|--|--|--|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Filt | Non-Filt |          |  |  |  |  |  |  |  |  |  |
| 1        |          | 575      | 300               |                      | x                                  | x   | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 2        |          | 576      | 150               |                      |                                    |     | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 3        |          | 577      | 100               |                      |                                    |     | x    | x        |          |  |  |  |  |  |  |  |  |  |
| 4        |          | 578      | 75                |                      |                                    |     | xx   | xx       |          |  |  |  |  |  |  |  |  |  |
| 5        |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 6        |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 7        |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 8        |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 9        |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 10       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 11       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 12       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 13       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 14       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 15       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 16       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 17       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 18       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 19       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 20       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 21       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 22       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 23       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |
| 24       |          |          |                   |                      |                                    |     |      |          |          |  |  |  |  |  |  |  |  |  |

Profile type:  
 ROS TRM ☒ Niskin other?  
 Watchkeeper(s): KLS

Bottom Depth: 4285 m  
 Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0918 | 0218  |
| Bottom | 0932 |       |
| End    | 0952 |       |

Positional Information

|        |                    |
|--------|--------------------|
| Start  | Lat: 49 ° 59.95 N  |
|        | Lon: 145 ° 00.07 W |
| ▼      |                    |
| Bottom | Lat: 49 ° 59.03 N  |
|        | Lon: 145 ° 00.02 W |
| ▼      |                    |
| End    | Lat: 49 ° 59.79 N  |
|        | Lon: 144 ° 59.95 W |

Extra comments:  
 TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P26

Event #: 83

Ship: Tully

UTC Date (dd mmm yyyy): 11 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  | Comments |  |  |  |  |  |  |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|------|----------|--|--|--|--|----------|--|--|--|--|--|--|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |          |  |  |  |  |  |  |
| 1        |          | 579      | 50                |                                                        | x                                  | x   | x    | x        |  |  |  |  |          |  |  |  |  |  |  |
| 2        |          | 580      | 40                |                                                        |                                    |     | x    | x        |  |  |  |  |          |  |  |  |  |  |  |
| 3        |          | 581      | 25                |                                                        |                                    |     | x    | x        |  |  |  |  |          |  |  |  |  |  |  |
| 4        |          | 582      | 10                |                                                        |                                    |     | 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: 4226 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1040 | 0340  |
| Bottom | 1051 |       |
| End    | 1104 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.95  | N |
| Lon: | 145 ° 00.01 | W |

Start

|      |             |   |
|------|-------------|---|
| Lat: | 49 ° 59.90  | N |
| Lon: | 144 ° 59.95 | W |

Bottom

|      |              |   |
|------|--------------|---|
| Lat: | 49 ° 59.326  | N |
| Lon: | 144 ° 59.912 | W |

End

Extra comments:  
TM

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P26 Event #: 84 Ship: Tully UTC Date (dd mmm yyyy): 11 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  | Comments |  |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|------|----------|--|--|--|--|----------|--|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |          |  |  |  |
| 1        |          | 585      | 15                | 10                   | ✓                                  | ✓   | X x  | x        |  |  |  |  |          |  |  |  |
| 2        |          | 586      | 15                | 10                   |                                    |     | X x  | x        |  |  |  |  |          |  |  |  |
| 3        |          | 9587     | 15                | 10                   |                                    |     | X x  | x        |  |  |  |  |          |  |  |  |
| 4        |          | 9588     | 15                | 10                   |                                    |     | 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): RS

Bottom Depth: 4226 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1152 | 0452  |
| Bottom | 1206 |       |
| End    | 1211 |       |

Positional Information  
Start  
Lat: 49 ° 59.958 N  
Lon: 144 ° 59.976 W

Bottom  
Lat: 49 ° 59.784 N  
Lon: 144 ° 59.928 W

End  
Lat: 49 ° 59.750 N  
Lon: 144 ° 59.920 W

Extra comments:  
TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: P26

Event #: 85

Ship: Tully

UTC Date (dd mmm/yyyy): 11 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |             |          | Samples Taken / Sampler's Initials |   |  |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|-------------|----------|------------------------------------|---|--|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ | Pressure | Var                                |   |  |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 587      | Chl Max           | ✓           | 26       |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 588      | Chl Max           | ✓           | 26       |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 589      | Chl Max           | ✓           | 26       |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 590      | Chl Max           | ✓           | 26       |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 5        |          | 591      | Chl Max           | ✓           | 26       |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 6        |          | 592      | 5                 | ✓           | 5        |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 7        |          | 593      | 5                 | ✓           | 5        |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 8        |          | 594      | 5                 | ✓           | 5        |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 9        |          | 595      | 5                 | ✓           | 5        |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 10       |          | 596      | 5                 | ✓           | 5        |                                    | x |  |  |  |  |  |  |  |  |  |  |          |
| 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): <u>SM</u>                                                                                                              |

|                     |                                                                      |
|---------------------|----------------------------------------------------------------------|
| Bottom Depth:       | <u>2485</u> m                                                        |
| Transmisso Cleaned: | <input checked="" type="checkbox"/> (Y) <input type="checkbox"/> (N) |

| Time   | UTC         | Local       |
|--------|-------------|-------------|
| Start  | <u>1223</u> | <u>0523</u> |
| Bottom | <u>1231</u> |             |
| End    | <u>1236</u> |             |

|                        |                     |          |
|------------------------|---------------------|----------|
| Positional Information |                     |          |
| Lat:                   | <u>50 ° 00.040</u>  | <u>N</u> |
| Lon:                   | <u>145 ° 00.060</u> | <u>W</u> |

|      |                     |          |
|------|---------------------|----------|
| ▼    |                     |          |
| Lat: | <u>50 ° 00.030</u>  | <u>N</u> |
| Lon: | <u>145 ° 00.050</u> | <u>W</u> |

|      |                     |          |
|------|---------------------|----------|
| ▼    |                     |          |
| Lat: | <u>50 ° 00.000</u>  | <u>N</u> |
| Lon: | <u>145 ° 00.040</u> | <u>W</u> |

|                   |
|-------------------|
| Extra comments:   |
| Productivity cast |
| CTD to 150 m!     |

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: PA-013 Event #: 94 Ship: Tully UTC Date (dd mmm yyyy): 18<sup>13</sup> 06 19

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |  |     |       |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|--|-----|-------|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | ONAr                               |     |  | Oxy |       |  |  |  |  |  |          |
|          |          |          |                   |                      | UW                                 | R B |  | IOS | MG/MA |  |  |  |  |  |          |
| 1        |          | 597      | 15                | ✓ 15                 | x x                                |     |  | x x |       |  |  |  |  |  |          |
| 2        |          | 598      | 10                | ✓ 10                 | x x                                |     |  | x x |       |  |  |  |  |  |          |
| 3        |          | 599      | 5                 | ✓ 5                  | x x                                |     |  | x x |       |  |  |  |  |  |          |
| 4        |          | 600      | 0                 | ✓ 3.1                | 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): MG

Bottom Depth: 4197 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 0259 | 1959  |
| Bottom | 0305 |       |
| End    | 0313 |       |

Positional Information

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 07.72  | N |
| Lon: | 144 ° 50.26 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 07.73  | N |
| Lon: | 144 ° 50.24 | W |

▼

|      |             |   |
|------|-------------|---|
| Lat: | 50 ° 07.71  | N |
| Lon: | 144 ° 50.23 | W |

Extra comments:  
Calibration cast post-deployment  
CTD to 350 m

# Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006

Station: PA-012

Event #: 95

Ship: Tully

UTC Date (dd mmm yyyy): 13 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |  |  |     |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|--|--|-----|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | ONAr                               |  |  | Oxy |  |  |  |  |  |  |          |
| 1        |          | 601      | 15                | ✓ 15               | xx                                 |  |  | xx  |  |  |  |  |  |  |          |
| 2        |          | 602      | 10                | ✓ 10               | xx                                 |  |  | xx  |  |  |  |  |  |  |          |
| 3        |          | 603      | 5                 | ✓ 5                | xx                                 |  |  | xx  |  |  |  |  |  |  |          |
| 4        |          | 604      | 0                 | ✓ 2                | xx                                 |  |  | xx  |  |  |  |  |  |  |          |
| 5        |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 6        |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 7        |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 8        |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 9        |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 10       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 11       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 12       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 13       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 14       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 15       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 16       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 17       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 18       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 19       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 20       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 21       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 22       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 23       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |
| 24       |          |          |                   |                    |                                    |  |  |     |  |  |  |  |  |  |          |

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

Bottom Depth: 4205 m  
 Transmisso Cleaned: ☒ Y / ☐ N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  | 1502 | 0902  |
| Bottom | 1509 |       |
| End    | 1513 |       |

Positional Information

|        |                          |                           |
|--------|--------------------------|---------------------------|
| Start  | Lat: <u>50° 02.920</u> N | Lon: <u>144° 53.050</u> W |
| Bottom | Lat: <u>50° 02.930</u> N | Lon: <u>144° 53.050</u> W |
| End    | Lat: <u>50° 02.920</u> N | Lon: <u>144° 53.090</u> W |

Extra comments:  
 Calibration cast pre-recovery  
 CTD to 350 m

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 101 Ship: Tully UTC Date (dd:mmm/yyyy): 16 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                    | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------|------------------------------------|-----|------|----------|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |          |
| 1        |          | 605      | 300               |                    | x                                  | x   | x    | x        |  |  |  |  |  |  |          |
| 2        |          | 606      | 150               |                    |                                    |     | x    | x        |  |  |  |  |  |  |          |
| 3        |          | 607      | 100               |                    |                                    |     | x    | x        |  |  |  |  |  |  |          |
| 4        |          | 608      | 75                |                    |                                    |     | 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: 1323 m  
Transmissio Cleaned: Y / N

| Time   | UTC         | Local       |
|--------|-------------|-------------|
| Start  | <u>1420</u> | <u>0720</u> |
| Bottom | <u>1428</u> |             |
| End    | <u>1435</u> |             |

Positional Information

|      |                    |          |
|------|--------------------|----------|
| Lat: | <u>48 ° 38.93</u>  | <u>N</u> |
| Lon: | <u>126 ° 40.00</u> | <u>W</u> |

▼

|      |                    |          |
|------|--------------------|----------|
| Lat: | <u>48 ° 38.92</u>  | <u>N</u> |
| Lon: | <u>126 ° 39.98</u> | <u>W</u> |

▼

|      |                    |          |
|------|--------------------|----------|
| Lat: | <u>48 ° 38.93</u>  | <u>N</u> |
| Lon: | <u>126 ° 39.97</u> | <u>W</u> |

Extra comments:  
TM

## Water Properties Group

## Sampling Log

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

Cruise ID: 2019-006 Station: P4

Event #: 102

Ship: Tully

UTC Date (dd mmm yyyy): 16 June 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                      | Samples Taken / Sampler's Initials |     |       |       |       |     |      |     |  |  | Comments |  |  |
|----------|----------|----------|-------------------|----------------------|------------------------------------|-----|-------|-------|-------|-----|------|-----|--|--|----------|--|--|
|          |          |          | Target Pressure   | Confirmed ✓ Pressure | Oxy                                | Sal | Nut-F | Nut-C | Gases | Chl | HPLC |     |  |  |          |  |  |
|          |          |          |                   |                      | 125                                |     | FL    | FL    | FL    |     |      |     |  |  |          |  |  |
| 1        |          | 609      | Bot-10            | ✓                    | 1322                               | x   |       | x     | x     |     |      |     |  |  |          |  |  |
| 2        |          | 610      | 1250              | ✓                    | 1250                               | x   | x     | x     | x     |     |      |     |  |  |          |  |  |
| 3        |          | 611      | 1250              | ✓                    | 1250                               | x x | x     | x     | x     |     |      |     |  |  |          |  |  |
| 4        |          | 612      | 1000              | ✓                    | 999                                | x   | x x   | x x   | x x   |     |      |     |  |  |          |  |  |
| 5        |          | 613      | 800               | ✓                    | 800                                | x   | x     | x     | x     |     |      |     |  |  |          |  |  |
| 6        |          | 614      | 600               | ✓                    | 600                                | x   | x     | x     | x     |     |      |     |  |  |          |  |  |
| 7        |          | 615      | 400               | ✓                    | 400                                | x   |       | x     | x     |     |      |     |  |  |          |  |  |
| 8        |          | 616      | 300               | ✓                    | 300                                | x x |       | x     |       |     |      |     |  |  |          |  |  |
| 9        |          | 617      | 250               | ✓                    | 250                                | x   |       | x     |       |     |      |     |  |  |          |  |  |
| 10       |          | 618      | 200               | ✓                    | 200                                | x   |       | x     |       |     |      |     |  |  |          |  |  |
| 11       |          | 619      | 175               | ✓                    | 175                                | x   |       | x     |       |     |      |     |  |  |          |  |  |
| 12       |          | 620      | 150               | ✓                    | 150                                | x   |       | x     |       |     |      |     |  |  |          |  |  |
| 13       |          | 621      | 125               | ✓                    | 125                                | x x |       | x     |       |     |      |     |  |  |          |  |  |
| 14       |          | 622      | 100               | ✓                    | 99                                 | x   |       | x     |       |     | x    |     |  |  |          |  |  |
| 15       |          | 623      | 75                | ✓                    | 75                                 | x   |       | x x   |       |     | x    |     |  |  |          |  |  |
| 16       |          | 624      | 50                | ✓                    | 50                                 | x   |       | x     |       |     | x    |     |  |  |          |  |  |
| 17       |          | 625      | 25                | ✓                    | 25                                 | x   |       | x     |       |     | x    |     |  |  |          |  |  |
| 18       |          | 626      | 10                | ✓                    | 10                                 | x x |       | x     |       |     | x x  |     |  |  |          |  |  |
| 19       |          | 627      | 5                 | ✓                    | 5                                  | x   | x     | x     |       | x x | x    | x x |  |  |          |  |  |
| 20       |          |          |                   |                      |                                    |     |       |       |       |     |      |     |  |  |          |  |  |
| 21       |          |          |                   |                      |                                    |     |       |       |       |     |      |     |  |  |          |  |  |
| 22       |          |          |                   |                      |                                    |     |       |       |       |     |      |     |  |  |          |  |  |
| 23       |          |          |                   |                      |                                    |     |       |       |       |     |      |     |  |  |          |  |  |
| 24       |          |          |                   |                      |                                    |     |       |       |       |     |      |     |  |  |          |  |  |

Version: 25 Nov 2011

Transmembrane to host

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

|                     |         |   |
|---------------------|---------|---|
| Bottom Depth:       | 1324    | m |
| Transmisso Cleaned: | (Y) / N |   |

|        |      |       |
|--------|------|-------|
| Time   | UTC  | Local |
| Start  | 1445 | 0745  |
| Bottom | 1503 |       |
| End    | 1545 |       |

|                        |
|------------------------|
| Positional Information |
| Start                  |
| Lat: 48 ° 38.930 N     |
| Lon: 126 ° 39.980 W    |

Start

Bottom

End

|                     |
|---------------------|
| Bottom              |
| Lat: 48 ° 38.930 N  |
| Lon: 126 ° 39.980 W |

|                     |
|---------------------|
| End                 |
| Lat: 48 ° 38.940 N  |
| Lon: 126 ° 39.990 W |

|                          |
|--------------------------|
| Extra comments:          |
| Deep cast - return       |
| Loops: 2x OXY, 2x CHL, ✓ |
| 1x Sal, 1x Nut           |

Water Properties Group

Sampling Log

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

Cruise ID: 2019-006 Station: P4 Event #: 103 Ship: Tully UTC Date (dd mmm yyyy): 16 JUN 2019

| Niskin # | Firing # | Sample # | Rosette Operation |                                                        | Samples Taken / Sampler's Initials |     |      |          |  |  |  |  |  |  |  |  |  | Comments |
|----------|----------|----------|-------------------|--------------------------------------------------------|------------------------------------|-----|------|----------|--|--|--|--|--|--|--|--|--|----------|
|          |          |          | Target Pressure   | Confirmed <input checked="" type="checkbox"/> Pressure | Nut-F                              | Sal | Filt | Non-Filt |  |  |  |  |  |  |  |  |  |          |
| 1        |          | 628      | 50                |                                                        | x                                  | x   | x    | x        |  |  |  |  |  |  |  |  |  |          |
| 2        |          | 629      | 40                |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |  |          |
| 3        |          | 630      | 25                |                                                        |                                    |     | x    | x        |  |  |  |  |  |  |  |  |  |          |
| 4        |          | 631      | 10                |                                                        |                                    |     | xx   | xx       |  |  |  |  |  |  |  |  |  |          |
| 5        |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 6        |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 7        |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 8        |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 9        |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 10       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 11       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 12       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 13       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 14       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 15       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 16       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 17       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 18       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 19       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 20       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 21       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 22       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 23       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |
| 24       |          |          |                   |                                                        |                                    |     |      |          |  |  |  |  |  |  |  |  |  |          |

Profile type:  
ROS TRM ☒ Niskin other?  
Watchkeeper(s): KS

Bottom Depth: 1325 m  
Transmisso Cleaned: Y / N

| Time   | UTC  | Local |
|--------|------|-------|
| Start  |      |       |
| Bottom | 1607 | 0907  |
| End    | 1621 |       |

Positional Information

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

Bottom

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38.95  | N |
| Lon: | 126 ° 39.98 | W |

End

|      |             |   |
|------|-------------|---|
| Lat: | 48 ° 38.96  | N |
| Lon: | 126 ° 40.05 | W |

Extra comments:  
TM