

Figure A.1-3

Sampling Location in Little Roberts Lake,  
Doris North Project, 2014

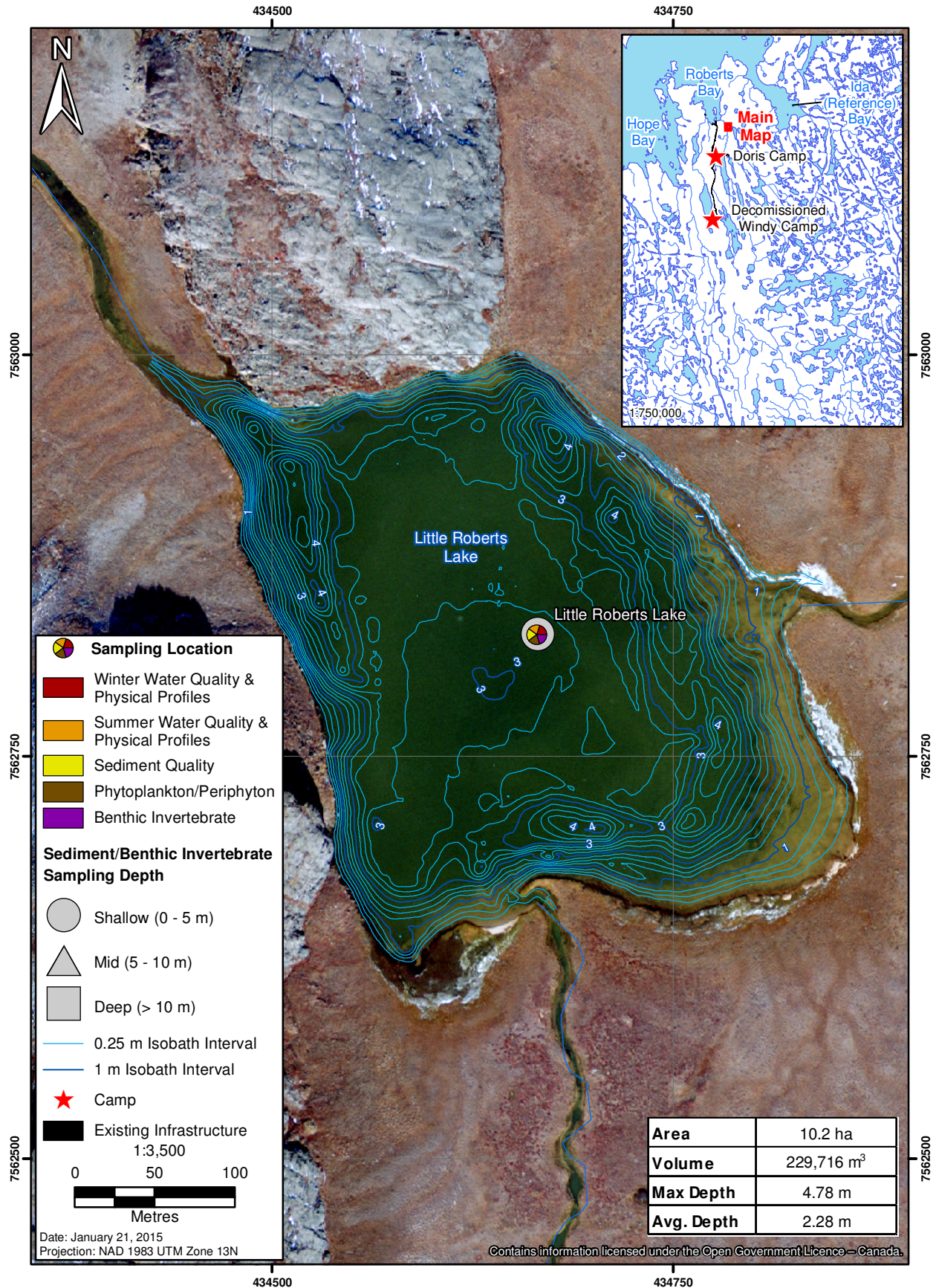


Figure A.1-4

Sampling Location in Reference Lake B,  
Doris North Project, 2014

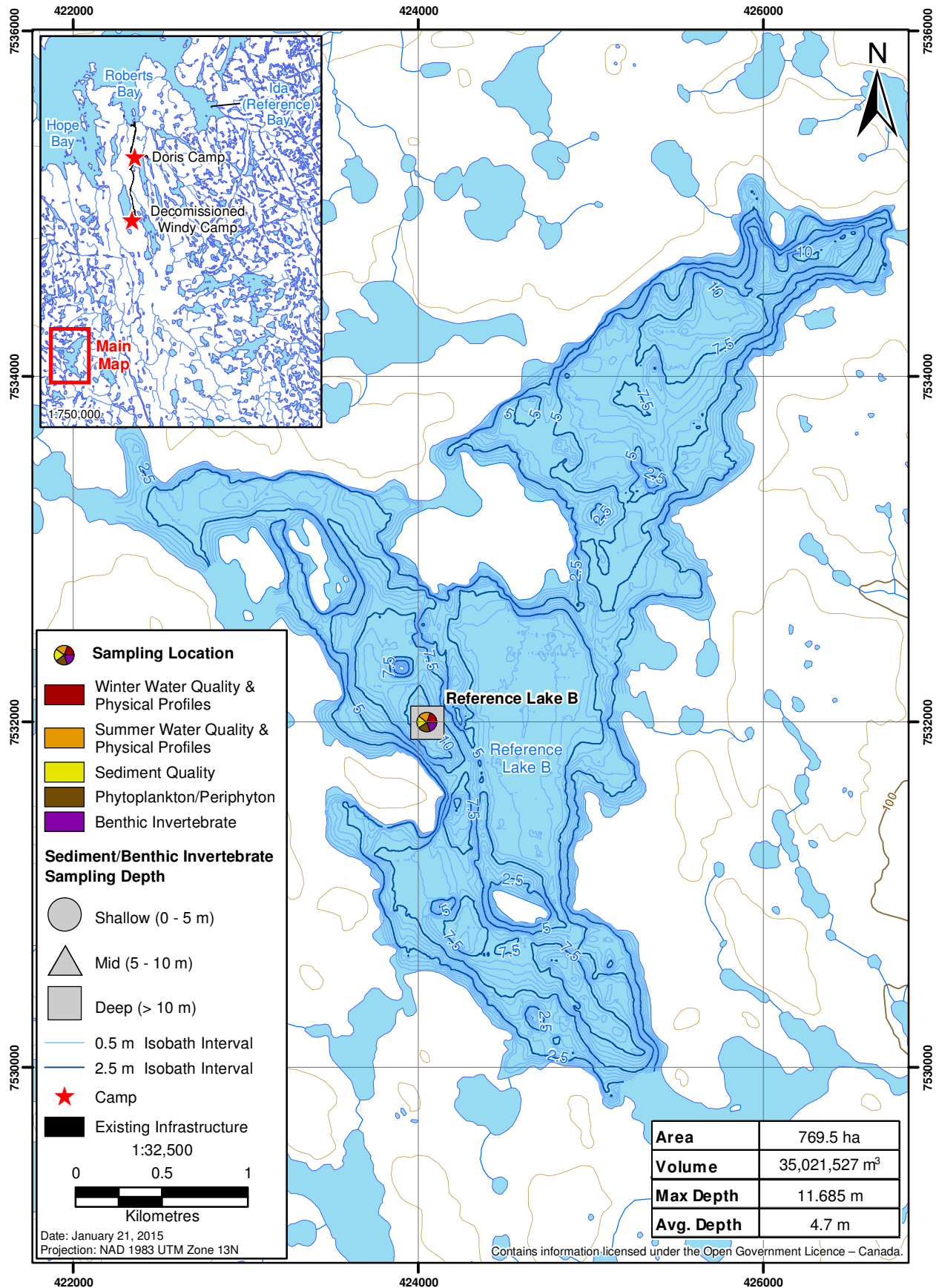


Figure A.1-5

Sampling Location in Reference Lake D,  
Doris North Project, 2014

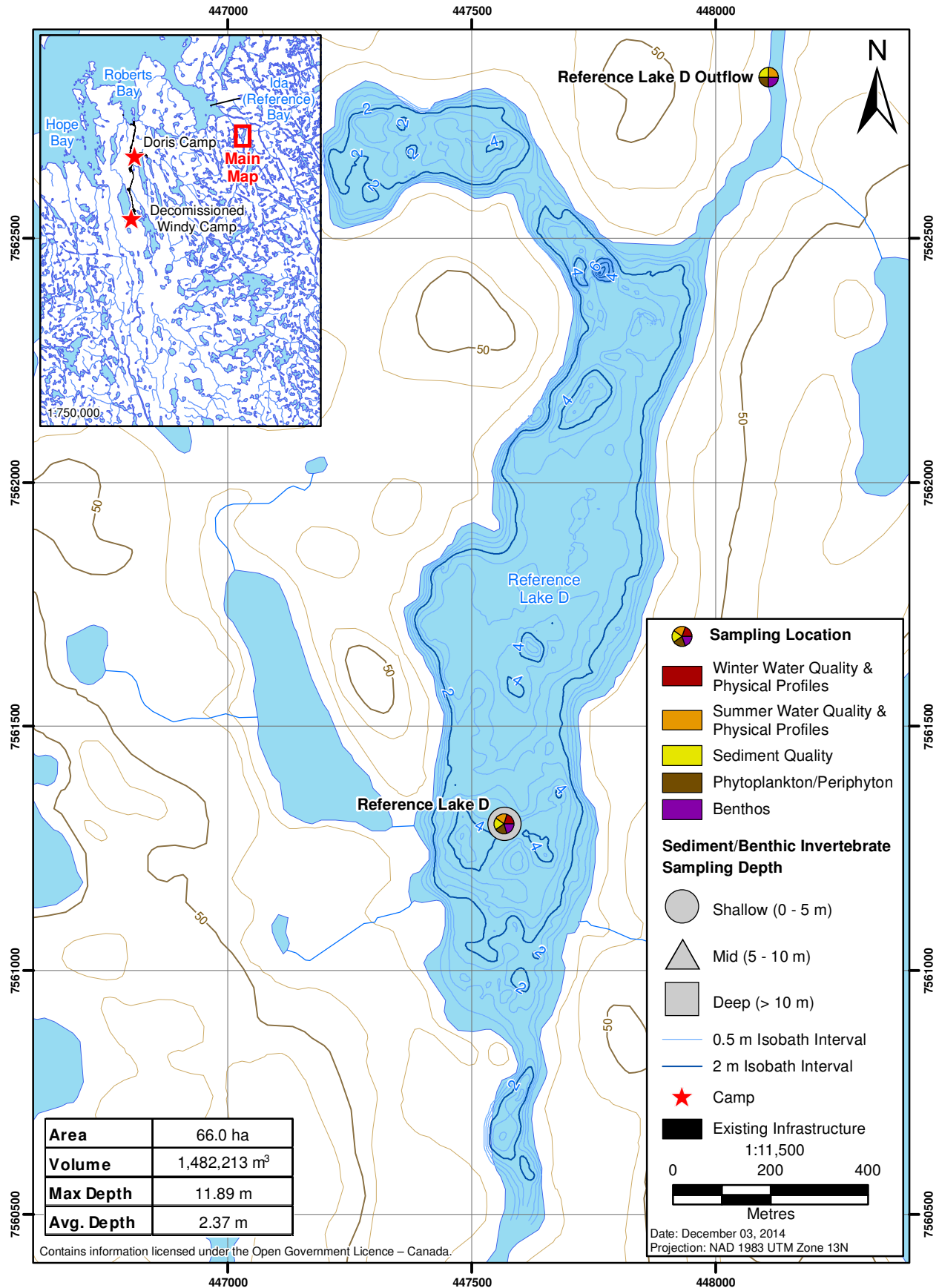


Figure A.1-6

Sampling Locations in Roberts Bay,  
Doris North Project, 2014

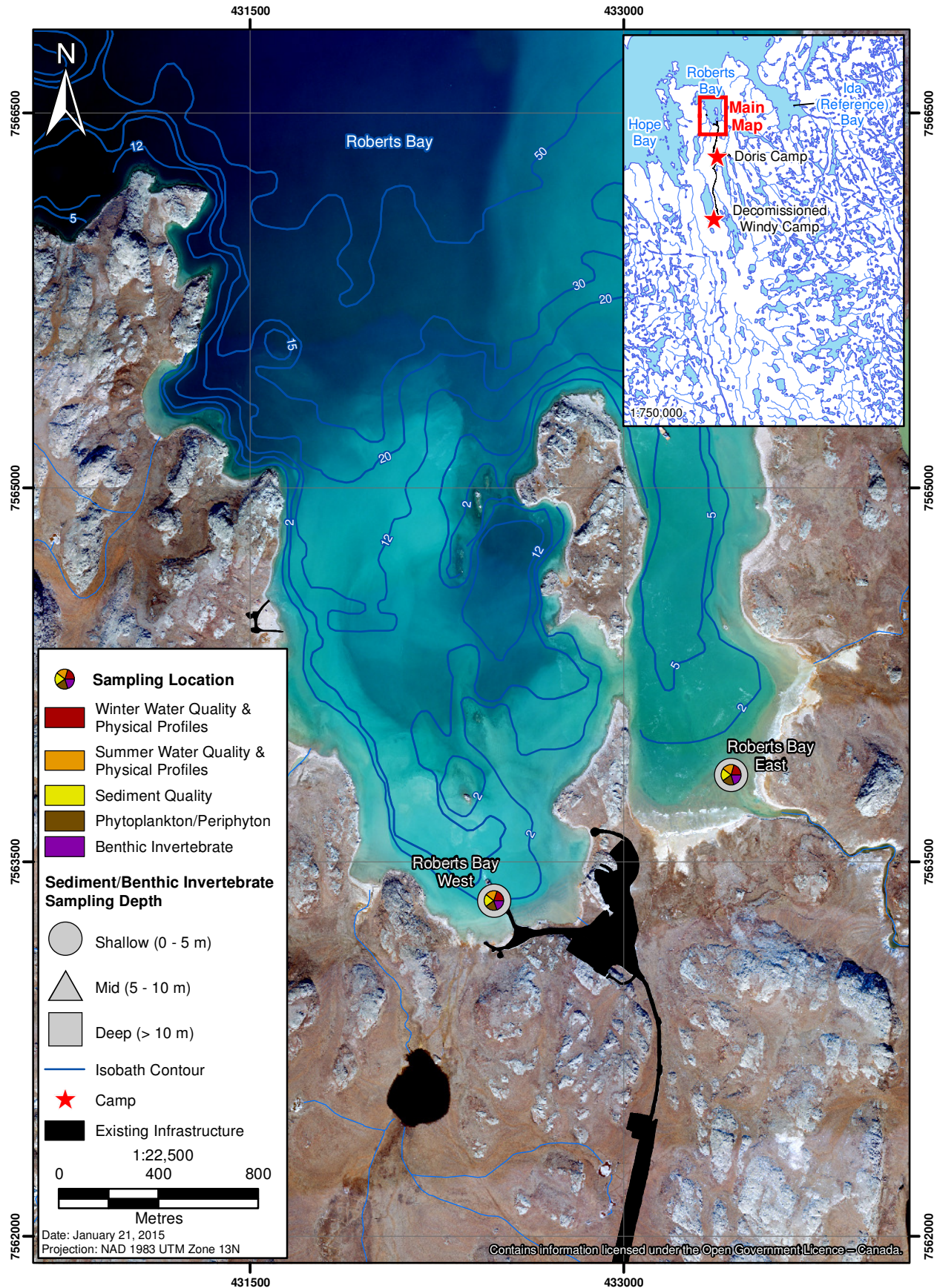
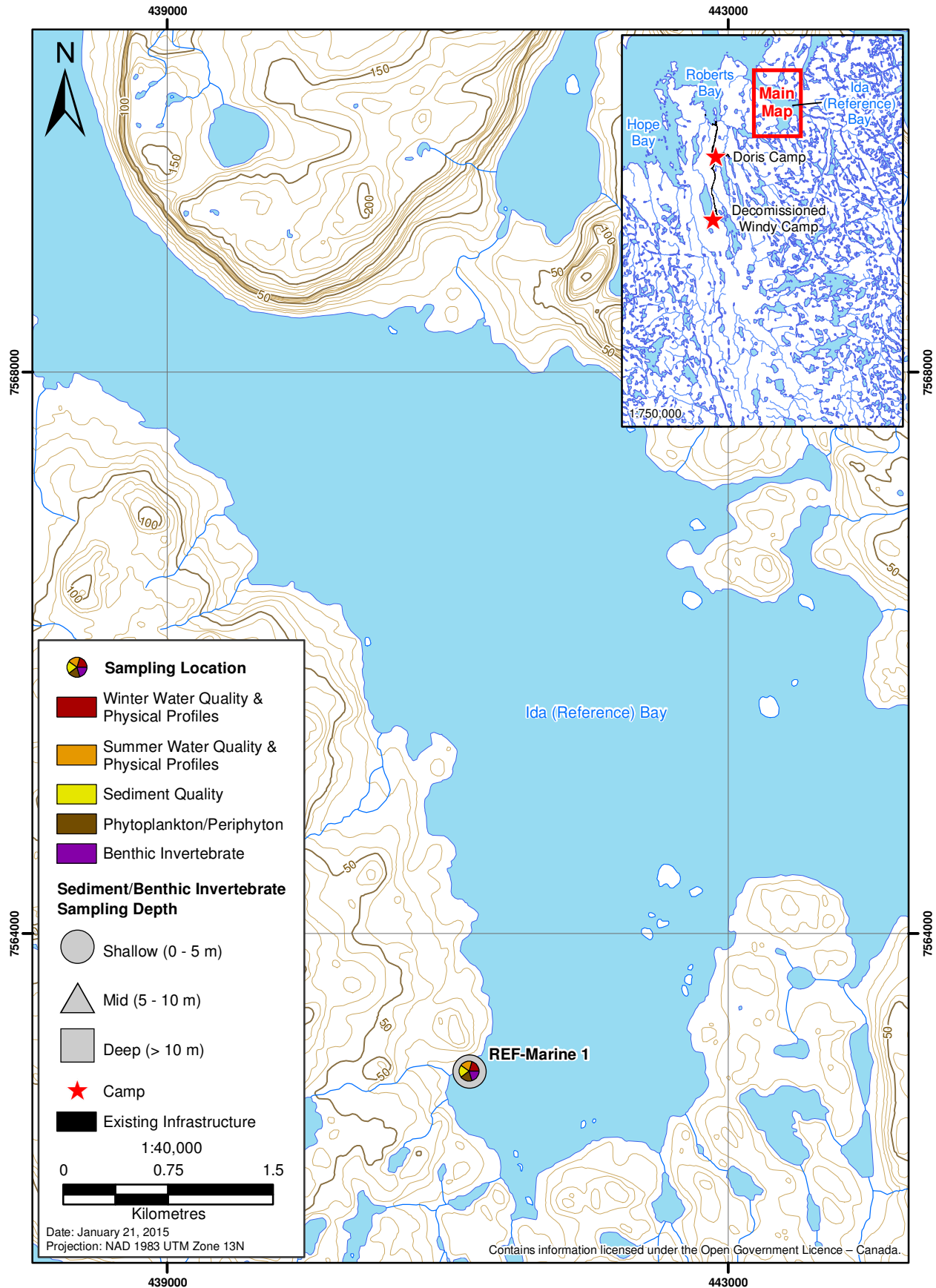


Figure A.1-7

Sampling Location in Ida (Reference) Bay,  
Doris North Project, 2014



## A.2 2014 PHYSICAL PROFILES AND SECCHI DEPTHS

The following sections present the Secchi depth data and the physical profiles collected from April to September 2014 at stream, lake, and marine sites.

### A.2.1 Stream Data

Stream water temperatures measured between June 18 and September 18, 2014 are shown in Table A.2-1.

**Table A.2-1. Stream Water Temperatures, Doris North Project, 2014**

| Stream                 | Date       |            |              |                 |
|------------------------|------------|------------|--------------|-----------------|
|                        | June 18-19 | July 16-17 | August 14-16 | September 17-18 |
| Doris Outflow          | 5.5°C      | 7.8°C      | 11.2°C       | 2.9°C           |
| Roberts Outflow        | 3.6°C      | 6.0°C      | 9.6°C        | 3.3°C           |
| Little Roberts Outflow | 3.3°C      | 11.5°C     | 9.9°C        | 2.2°C           |
| Reference B Outflow    | 2.9°C      | 14.2°C     | 9.3°C        | 0.6°C           |
| Reference D Outflow    | 1.3°C      | 7.4°C      | 11.2°C       | 1.1°C           |

### A.2.2 Lake Data

Lake Secchi depths and calculated euphotic zone depths (1% light level) are shown in Table A.2-2. Figures A.2-1 to A.2-5 show the temperature and dissolved oxygen profiles collected at lake sites from April to September 2014; Annex A.2-1 provides the profile data in tabular form.

**Table A.2-2. Lake Secchi Depths and Euphotic Zone Depths, Doris North Project, 2014**

| Lake Site              | Sampling Date      | Secchi Depth (Ds) (m) | Euphotic Zone Depth 1% Light Level (m) |
|------------------------|--------------------|-----------------------|----------------------------------------|
| <b>Large Lake Site</b> |                    |                       |                                        |
| Doris Lake South       | July 20, 2014      | 1.15                  | 3.1                                    |
|                        | August 19, 2014    | 1.2                   | 3.2                                    |
|                        | September 20, 2014 | 1.5                   | 4.1                                    |
| Doris Lake North       | July 20, 2014      | 1.2                   | 3.2                                    |
|                        | August 19, 2014    | 1.2                   | 3.2                                    |
|                        | September 20, 2014 | 1.3                   | 3.5                                    |
| Reference Lake B       | July 19, 2014      | 3.7                   | 10.0*                                  |
|                        | August 23, 2014    | 6.5                   | 17.6*                                  |
|                        | September 18, 2014 | 6.5                   | 17.6*                                  |
| <b>Small Lake Site</b> |                    |                       |                                        |
| Little Roberts Lake    | July 19, 2014      | 1.15                  | 3.1*                                   |
|                        | August 17, 2014    | 1.2                   | 3.2*                                   |
|                        | September 19, 2014 | 1.8                   | 4.9*                                   |
| Reference Lake D       | July 19, 2014      | 1.5                   | 4.1*                                   |
|                        | August 18, 2014    | 2.4                   | 6.5*                                   |
|                        | September 19, 2014 | 3.8                   | 10.3*                                  |

Note: \* indicates that the euphotic zone extended to the bottom of the water column.

Figure A.2-1

Temperature and Dissolved Oxygen Profiles  
in Doris Lake South, Doris North Project, 2014

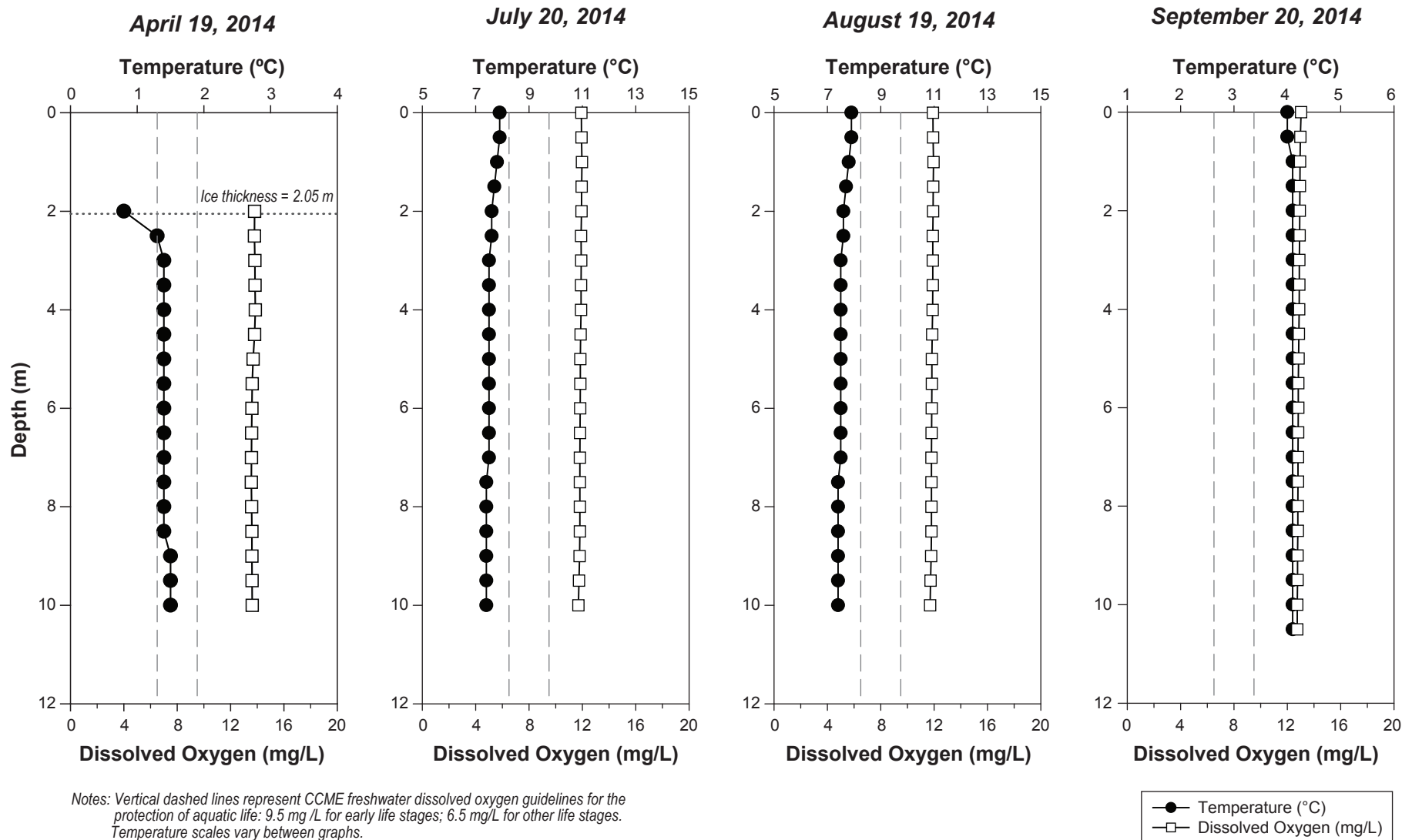


Figure A.2-2

Temperature and Dissolved Oxygen Profiles  
in Doris Lake North, Doris North Project, 2014

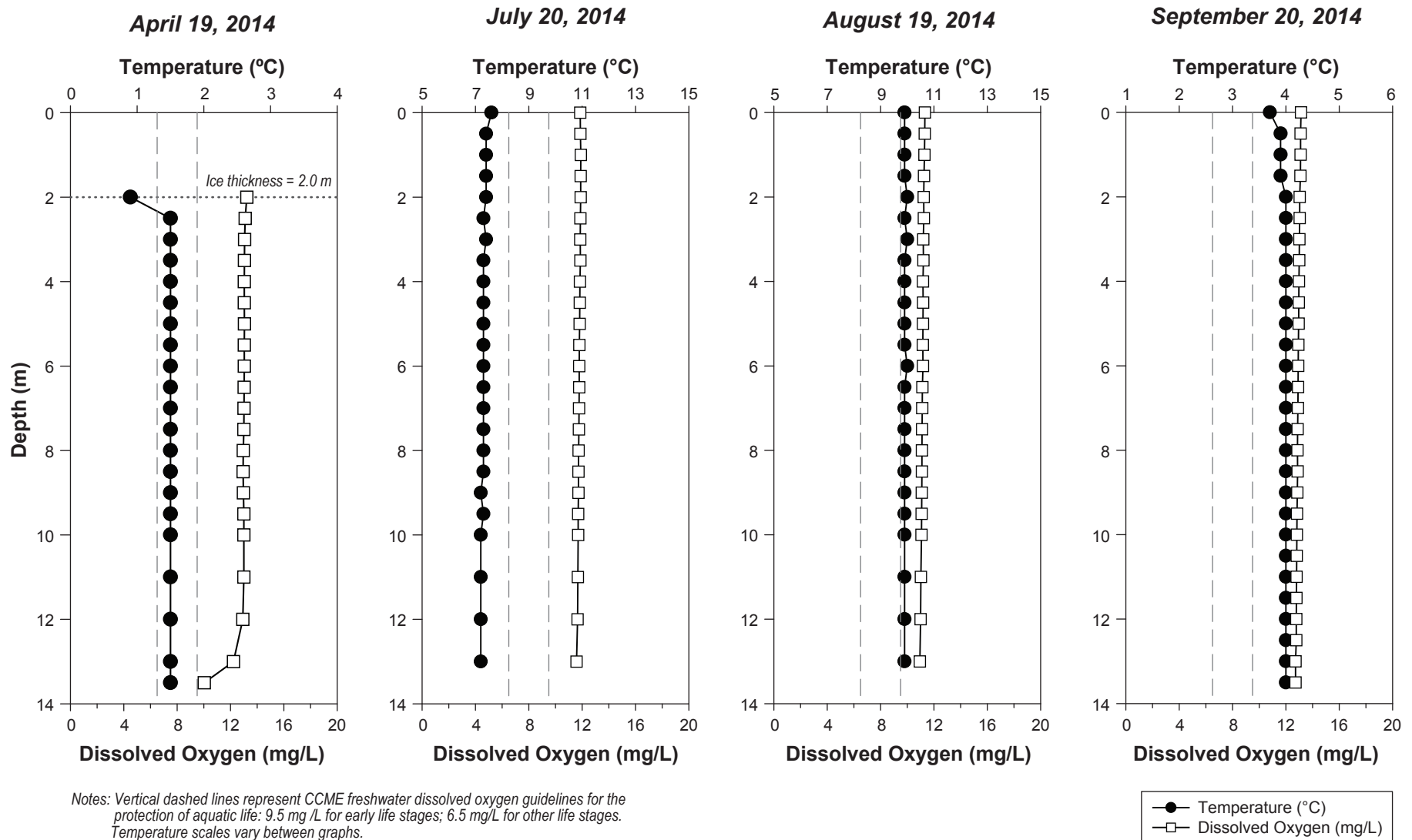


Figure A.2-3

Temperature and Dissolved Oxygen Profiles  
in Reference Lake B, Doris North Project, 2014

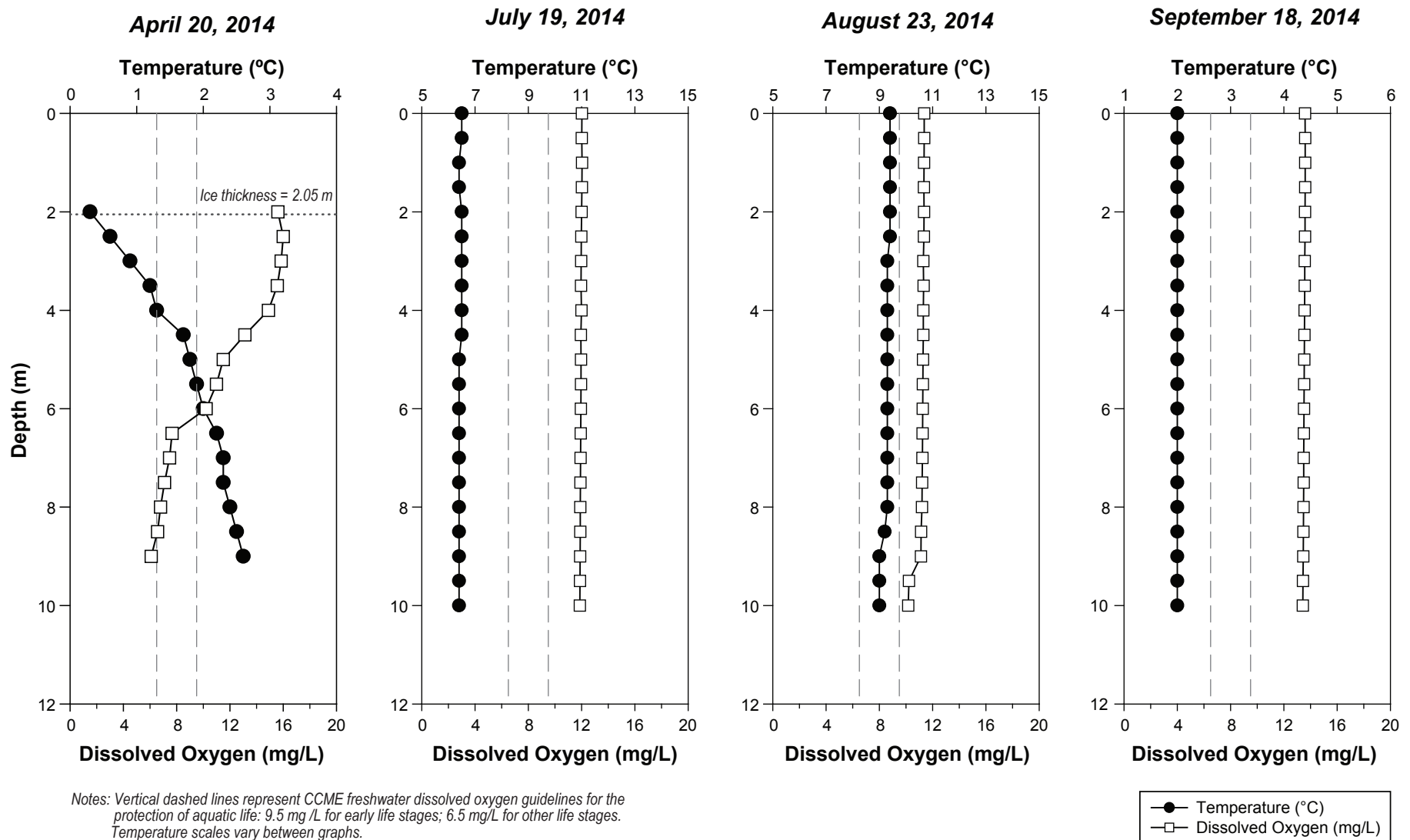


Figure A.2-4

Temperature and Dissolved Oxygen Profiles  
in Little Roberts Lake, Doris North Project, 2014

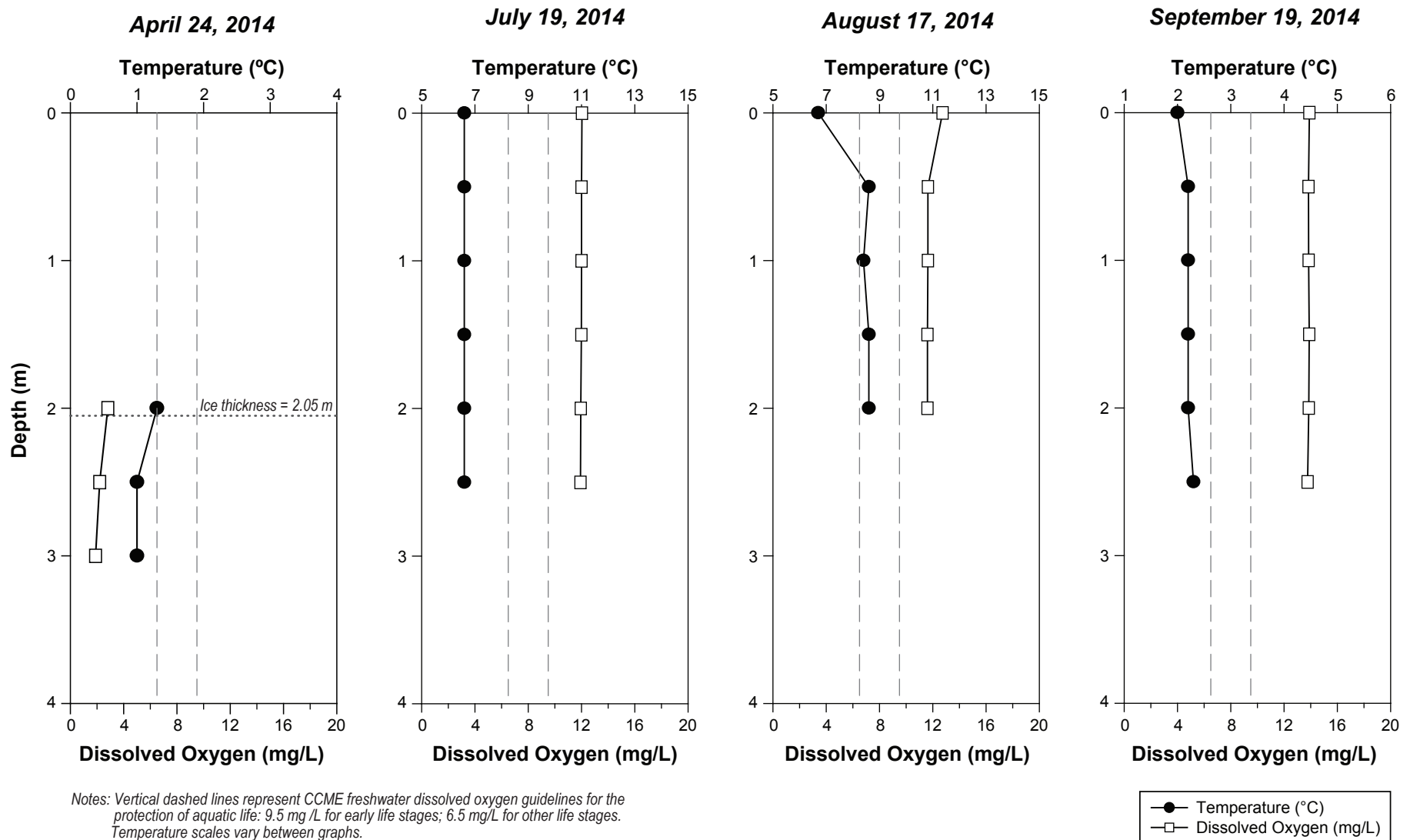
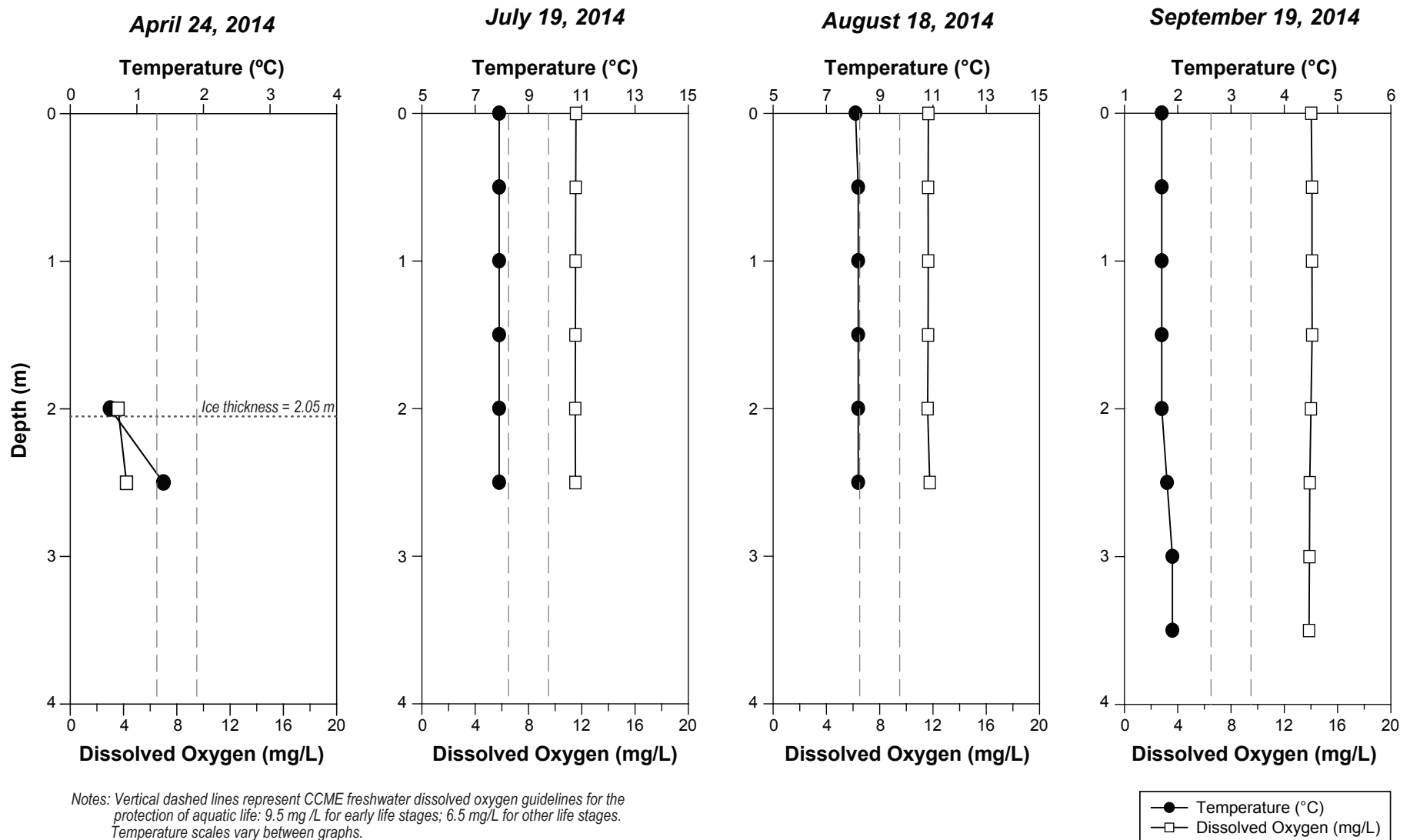


Figure A.2-5

Temperature and Dissolved Oxygen Profiles  
in Reference Lake D, Doris North Project, 2014



Annex A.2-1. Temperature and Dissolved Oxygen Profiles, Lake Sites, Doris North Project, 2014

| Doris Lake South |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Apr-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 2.0              | 0.8         | 13.79            | 96.50            |
| 2.5              | 1.3         | 13.78            | 97.80            |
| 3.0              | 1.4         | 13.82            | 98.20            |
| 3.5              | 1.4         | 13.83            | 98.30            |
| 4.0              | 1.4         | 13.85            | 98.40            |
| 4.5              | 1.4         | 13.79            | 98.10            |
| 5.0              | 1.4         | 13.68            | 97.30            |
| 5.5              | 1.4         | 13.62            | 96.90            |
| 6.0              | 1.4         | 13.6             | 96.70            |
| 6.5              | 1.4         | 13.57            | 96.50            |
| 7.0              | 1.4         | 13.56            | 96.40            |
| 7.5              | 1.4         | 13.55            | 96.40            |
| 8.0              | 1.4         | 13.57            | 96.40            |
| 8.5              | 1.4         | 13.6             | 96.70            |
| 9.0              | 1.5         | 13.59            | 96.90            |
| 9.5              | 1.5         | 13.61            | 97.00            |
| 10.0             | 1.5         | 13.62            | 97.10            |

| Doris Lake South |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 20-Jul-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 7.9         | 11.92            | 100.6            |
| 0.5              | 7.9         | 11.93            | 100.6            |
| 1.0              | 7.8         | 11.96            | 100.5            |
| 1.5              | 7.7         | 11.94            | 100.2            |
| 2.0              | 7.6         | 11.93            | 99.8             |
| 2.5              | 7.6         | 11.9             | 99.5             |
| 3.0              | 7.5         | 11.91            | 99.3             |
| 3.5              | 7.5         | 11.9             | 99.3             |
| 4.0              | 7.5         | 11.89            | 99.1             |
| 4.5              | 7.5         | 11.86            | 98.9             |
| 5.0              | 7.5         | 11.84            | 98.8             |
| 5.5              | 7.5         | 11.84            | 98.7             |
| 6.0              | 7.5         | 11.83            | 98.7             |
| 6.5              | 7.5         | 11.82            | 98.6             |
| 7.0              | 7.5         | 11.8             | 98.3             |
| 7.5              | 7.4         | 11.81            | 98.3             |
| 8.0              | 7.4         | 11.8             | 98.2             |
| 8.5              | 7.4         | 11.8             | 98.1             |
| 9.0              | 7.4         | 11.78            | 98               |
| 9.5              | 7.4         | 11.74            | 97.6             |
| 10.0             | 7.4         | 11.7             | 97.3             |

| Doris Lake South |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Aug-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 9.1         | 11.83            | 101.6            |
| 0.5              | 10.0        | 11.53            | 102.1            |
| 1.0              | 10.0        | 11.49            | 101.8            |
| 1.5              | 10.0        | 11.47            | 101.6            |
| 2.0              | 10.0        | 11.46            | 101.5            |
| 2.5              | 10.0        | 11.45            | 101.4            |
| 3.0              | 10.0        | 11.44            | 101.3            |
| 3.5              | 10.0        | 11.43            | 101.2            |
| 4.0              | 10.0        | 11.42            | 101.2            |
| 4.5              | 10.0        | 11.41            | 101.0            |
| 5.0              | 10.0        | 11.40            | 101.0            |
| 5.5              | 10.0        | 11.39            | 100.9            |
| 6.0              | 10.0        | 11.37            | 100.7            |
| 6.5              | 10.0        | 11.37            | 100.7            |
| 7.0              | 10.0        | 11.36            | 100.6            |
| 7.5              | 10.0        | 11.36            | 100.6            |
| 8.0              | 10.0        | 11.34            | 100.4            |
| 8.5              | 10.0        | 11.34            | 100.4            |
| 9.0              | 10.0        | 11.33            | 100.3            |
| 9.5              | 10.0        | 11.31            | 100.2            |

| Doris Lake South |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 20-Sep-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 4           | 13.04            | 99.4             |
| 0.5              | 4           | 12.98            | 99.3             |
| 1.0              | 4.1         | 12.96            | 99.2             |
| 1.5              | 4.1         | 12.95            | 99.1             |
| 2.0              | 4.1         | 12.94            | 98.9             |
| 2.5              | 4.1         | 12.93            | 98.9             |
| 3.0              | 4.1         | 12.91            | 98.7             |
| 3.5              | 4.1         | 12.91            | 98.7             |
| 4.0              | 4.1         | 12.89            | 98.6             |
| 4.5              | 4.1         | 12.87            | 98.4             |
| 5.0              | 4.1         | 12.85            | 98.3             |
| 5.5              | 4.1         | 12.83            | 98.2             |
| 6.0              | 4.1         | 12.83            | 98.1             |
| 6.5              | 4.1         | 12.82            | 98               |
| 7.0              | 4.1         | 12.81            | 98               |
| 7.5              | 4.1         | 12.81            | 97.9             |
| 8.0              | 4.1         | 12.79            | 97.8             |
| 8.5              | 4.1         | 12.79            | 97.8             |
| 9.0              | 4.1         | 12.77            | 97.7             |
| 9.5              | 4.1         | 12.77            | 97.6             |
| 10.0             | 4.1         | 12.75            | 97.6             |
| 10.5             | 4.1         | 12.75            | 97.5             |

| Doris Lake North |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Apr-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 2.0              | 0.9         | 13.22            | 93.2             |
| 2.5              | 1.5         | 13.09            | 93.4             |
| 3.0              | 1.5         | 13.05            | 93.1             |
| 3.5              | 1.5         | 13.04            | 93.0             |
| 4.0              | 1.5         | 13.03            | 93.0             |
| 4.5              | 1.5         | 13.03            | 92.9             |
| 5.0              | 1.5         | 13.04            | 93.0             |
| 5.5              | 1.5         | 13.03            | 92.9             |
| 6.0              | 1.5         | 13.03            | 92.9             |
| 6.5              | 1.5         | 13.02            | 92.9             |
| 7.0              | 1.5         | 13.01            | 92.8             |
| 7.5              | 1.5         | 12.99            | 92.7             |
| 8.0              | 1.5         | 12.95            | 92.4             |
| 8.5              | 1.5         | 12.94            | 92.2             |
| 9.0              | 1.5         | 12.96            | 92.4             |
| 9.5              | 1.5         | 12.99            | 92.7             |
| 10.0             | 1.5         | 13.00            | 92.7             |
| 11.0             | 1.5         | 12.99            | 92.6             |
| 12.0             | 1.5         | 12.92            | 92.2             |
| 13.0             | 1.5         | 12.22            | 87.1             |
| 13.5             | 1.5         | 10.03            | 71.7             |

| Doris Lake North |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 20-Jul-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 7.6         | 11.85            | 98.8             |
| 0.5              | 7.4         | 11.86            | 98.9             |
| 1.0              | 7.4         | 11.90            | 98.9             |
| 1.5              | 7.4         | 11.88            | 98.8             |
| 2.0              | 7.4         | 11.88            | 98.8             |
| 2.5              | 7.3         | 11.86            | 98.6             |
| 3.0              | 7.4         | 11.85            | 98.5             |
| 3.5              | 7.3         | 11.86            | 98.4             |
| 4.0              | 7.3         | 11.83            | 98.2             |
| 4.5              | 7.3         | 11.82            | 98.1             |
| 5.0              | 7.3         | 11.81            | 98.0             |
| 5.5              | 7.3         | 11.78            | 97.8             |
| 6.0              | 7.3         | 11.77            | 97.7             |
| 6.5              | 7.3         | 11.77            | 97.6             |
| 7.0              | 7.3         | 11.76            | 97.6             |
| 7.5              | 7.3         | 11.75            | 97.5             |
| 8.0              | 7.3         | 11.73            | 97.4             |
| 8.5              | 7.3         | 11.72            | 97.2             |
| 9.0              | 7.2         | 11.72            | 97.1             |
| 9.5              | 7.3         | 11.69            | 97.0             |
| 10.0             | 7.2         | 11.70            | 96.9             |
| 11.0             | 7.2         | 11.67            | 96.6             |
| 12.0             | 7.2         | 11.65            | 96.5             |
| 13.0             | 7.2         | 11.57            | 95.7             |

| Doris Lake North |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Aug-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 9.9         | 11.33            | 100.1            |
| 0.5              | 9.9         | 11.32            | 100.0            |
| 1.0              | 9.9         | 11.29            | 99.8             |
| 1.5              | 9.9         | 11.26            | 99.7             |
| 2.0              | 10.0        | 11.24            | 99.6             |
| 2.5              | 9.9         | 11.25            | 99.4             |
| 3.0              | 10.0        | 11.21            | 99.4             |
| 3.5              | 9.9         | 11.22            | 99.2             |
| 4.0              | 9.9         | 11.18            | 99.0             |
| 4.5              | 9.9         | 11.19            | 98.0             |
| 5.0              | 9.9         | 11.18            | 98.8             |
| 5.5              | 9.9         | 11.17            | 98.7             |
| 6.0              | 10.0        | 11.18            | 98.7             |
| 6.5              | 9.9         | 11.14            | 98.4             |
| 7.0              | 9.9         | 11.13            | 98.4             |
| 7.5              | 9.9         | 11.12            | 98.0             |
| 8.0              | 9.9         | 11.11            | 98.2             |
| 8.5              | 9.9         | 11.10            | 98.1             |
| 9.0              | 9.9         | 11.09            | 98.0             |
| 9.5              | 9.9         | 11.08            | 97.9             |
| 10.0             | 9.9         | 11.07            | 97.8             |
| 11.0             | 9.9         | 11.03            | 97.6             |
| 12.0             | 9.9         | 11.01            | 97.3             |
| 13.0             | 9.9         | 10.95            | 96.8             |

| Doris Lake North |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 20-Sep-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 3.7         | 13.14            | 99.6             |
| 0.5              | 3.9         | 13.10            | 99.7             |
| 1.0              | 3.9         | 13.10            | 99.6             |
| 1.5              | 3.9         | 13.09            | 99.6             |
| 2.0              | 4.0         | 13.04            | 99.5             |
| 2.5              | 4.0         | 13.04            | 99.5             |
| 3.0              | 4.0         | 13.02            | 99.3             |
| 3.5              | 4.0         | 13.00            | 99.2             |
| 4.0              | 4.0         | 12.98            | 99.0             |
| 4.5              | 4.0         | 12.97            | 98.9             |
| 5.0              | 4.0         | 12.96            | 98.8             |
| 5.5              | 4.0         | 12.94            | 98.6             |
| 6.0              | 4.0         | 12.93            | 98.6             |
| 6.5              | 4.0         | 12.92            | 98.5             |
| 7.0              | 4.0         | 12.90            | 98.4             |
| 7.5              | 4.0         | 12.88            | 98.3             |
| 8.0              | 4.0         | 12.87            | 98.2             |
| 8.5              | 4.0         | 12.88            | 98.2             |
| 9.0              | 4.0         | 12.86            | 98.0             |
| 9.5              | 4.0         | 12.84            | 97.9             |
| 10.0             | 4.0         | 12.83            | 97.9             |
| 10.5             | 4.0         | 12.82            | 97.8             |
| 11.0             | 4.0         | 12.81            | 97.7             |
| 11.5             | 4.0         | 12.79            | 97.6             |
| 12.0             | 4.0         | 12.78            | 97.5             |
| 12.5             | 4.0         | 12.78            | 97.5             |
| 13.0             | 4.0         | 12.73            | 97.2             |
| 13.5             | 4.0         | 12.73            | 97.1             |

Annex A.2-1. Temperature and Dissolved Oxygen Profiles, Lake Sites, Doris North Project, 2014

| Reference Lake B |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 20-Apr-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 2.0              | 0.3         | 15.60            | 107.6            |
| 2.5              | 0.6         | 15.99            | 111.2            |
| 3.0              | 0.9         | 15.84            | 111.1            |
| 3.5              | 1.2         | 15.55            | 110.0            |
| 4.0              | 1.3         | 14.88            | 105.5            |
| 4.5              | 1.7         | 13.12            | 94.1             |
| 5.0              | 1.8         | 11.50            | 82.7             |
| 5.5              | 1.9         | 10.98            | 79.2             |
| 6.0              | 2.0         | 10.21            | 73.8             |
| 6.5              | 2.2         | 7.65             | 55.6             |
| 7.0              | 2.3         | 7.46             | 54.4             |
| 7.5              | 2.3         | 7.08             | 51.6             |
| 8.0              | 2.4         | 6.78             | 49.5             |
| 8.5              | 2.5         | 6.56             | 48.1             |
| 9.0              | 2.6         | 6.08             | 44.6             |

| Reference Lake B |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Jul-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 6.5         | 12.02            | 97.8             |
| 0.5              | 6.5         | 12.01            | 97.7             |
| 1.0              | 6.4         | 12.03            | 97.6             |
| 1.5              | 6.4         | 12.02            | 97.6             |
| 2.0              | 6.5         | 11.99            | 97.5             |
| 2.5              | 6.5         | 11.97            | 97.4             |
| 3.0              | 6.5         | 11.96            | 97.3             |
| 3.5              | 6.5         | 11.95            | 97.2             |
| 4.0              | 6.5         | 11.98            | 97.2             |
| 4.5              | 6.5         | 11.94            | 97.1             |
| 5.0              | 6.4         | 11.95            | 97.0             |
| 5.5              | 6.4         | 11.95            | 96.9             |
| 6.0              | 6.4         | 11.94            | 96.8             |
| 6.5              | 6.4         | 11.93            | 96.8             |
| 7.0              | 6.4         | 11.92            | 96.7             |
| 7.5              | 6.4         | 11.91            | 96.6             |
| 8.0              | 6.4         | 11.90            | 96.5             |
| 8.5              | 6.4         | 11.89            | 96.5             |
| 9.0              | 6.4         | 11.88            | 96.4             |
| 9.5              | 6.4         | 11.87            | 96.3             |
| 10.0             | 6.4         | 11.86            | 96.2             |

| Reference Lake B |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 23-Aug-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 9.4         | 11.37            | 99.3             |
| 0.5              | 9.4         | 11.37            | 99.3             |
| 1.0              | 9.4         | 11.36            | 99.2             |
| 1.5              | 9.4         | 11.35            | 99.1             |
| 2.0              | 9.4         | 11.36            | 99.2             |
| 2.5              | 9.4         | 11.35            | 99.1             |
| 3.0              | 9.3         | 11.30            | 98.5             |
| 3.5              | 9.3         | 11.33            | 98.7             |
| 4.0              | 9.3         | 11.31            | 98.5             |
| 4.5              | 9.3         | 11.30            | 98.5             |
| 5.0              | 9.3         | 11.28            | 98.3             |
| 5.5              | 9.3         | 11.27            | 98.2             |
| 6.0              | 9.3         | 11.26            | 98.1             |
| 6.5              | 9.3         | 11.25            | 98.1             |
| 7.0              | 9.3         | 11.24            | 98.0             |
| 7.5              | 9.3         | 11.22            | 97.8             |
| 8.0              | 9.3         | 11.20            | 97.6             |
| 8.5              | 9.2         | 11.14            | 96.9             |
| 9.0              | 9.0         | 11.13            | 96.3             |
| 9.5              | 9.0         | 10.23            | 88.5             |
| 10.0             | 9.0         | 10.17            | 88.0             |

| Reference Lake B |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 18-Sep-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 2.0         | 13.59            | 98.2             |
| 0.5              | 2.0         | 13.60            | 98.3             |
| 1.0              | 2.0         | 13.60            | 98.3             |
| 1.5              | 2.0         | 13.60            | 98.3             |
| 2.0              | 2.0         | 13.59            | 98.3             |
| 2.5              | 2.0         | 13.59            | 98.2             |
| 3.0              | 2.0         | 13.57            | 98.1             |
| 3.5              | 2.0         | 13.57            | 98.1             |
| 4.0              | 2.0         | 13.56            | 98.0             |
| 4.5              | 2.0         | 13.55            | 97.9             |
| 5.0              | 2.0         | 13.54            | 97.9             |
| 5.5              | 2.0         | 13.53            | 97.8             |
| 6.0              | 2.0         | 13.52            | 97.7             |
| 6.5              | 2.0         | 13.51            | 97.7             |
| 7.0              | 2.0         | 13.49            | 97.6             |
| 7.5              | 2.0         | 13.49            | 97.5             |
| 8.0              | 2.0         | 13.48            | 97.4             |
| 8.5              | 2.0         | 13.47            | 97.4             |
| 9.0              | 2.0         | 13.46            | 97.3             |
| 9.5              | 2.0         | 13.44            | 97.2             |
| 10.0             | 2.0         | 13.43            | 97.1             |

| Little Roberts Lake |             |                  |                  |
|---------------------|-------------|------------------|------------------|
| 24-Apr-14           |             |                  |                  |
| Depth               | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)                 | (°C)        | (mg/L)           | Saturation (%)   |
| 2.0                 | 1.3         | 2.81             | 20.0             |
| 2.5                 | 1.0         | 2.20             | 15.5             |
| 3.0                 | 1.0         | 1.88             | 13.3             |

| Little Roberts Lake |             |                  |                  |
|---------------------|-------------|------------------|------------------|
| 19-Jul-14           |             |                  |                  |
| Depth               | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)                 | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0                 | 6.6         | 12.03            | 98.7             |
| 0.5                 | 6.6         | 12.00            | 97.9             |
| 1.0                 | 6.6         | 11.99            | 97.8             |
| 1.5                 | 6.6         | 11.98            | 97.7             |
| 2.0                 | 6.6         | 11.94            | 97.4             |
| 2.5                 | 6.6         | 11.92            | 97.1             |

| Little Roberts Lake |             |                  |                  |
|---------------------|-------------|------------------|------------------|
| 17-Aug-14           |             |                  |                  |
| Depth               | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)                 | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0                 | 6.7         | 12.74            | 98.6             |
| 0.5                 | 8.6         | 11.64            | 99.5             |
| 1.0                 | 8.4         | 11.64            | 99.5             |
| 1.5                 | 8.6         | 11.60            | 99.4             |
| 2.0                 | 8.6         | 11.60            | 99.3             |

| Little Roberts Lake |             |                  |                  |
|---------------------|-------------|------------------|------------------|
| 19-Sep-14           |             |                  |                  |
| Depth               | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)                 | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0                 | 2.0         | 13.90            | 100.7            |
| 0.5                 | 2.2         | 13.84            | 100.6            |
| 1.0                 | 2.2         | 13.85            | 100.7            |
| 1.5                 | 2.2         | 13.89            | 100.6            |
| 2.0                 | 2.2         | 13.86            | 100.7            |
| 2.5                 | 2.3         | 13.77            | 100.1            |

| Reference Lake D |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 24-Apr-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 2.0              | 0.6         | 3.58             | 24.9             |
| 2.5              | 1.4         | 4.22             | 30.0             |

| Reference Lake D |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Jul-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 7.9         | 11.56            | 97.3             |
| 0.5              | 7.9         | 11.54            | 97.2             |
| 1.0              | 7.9         | 11.53            | 97.1             |
| 1.5              | 7.9         | 11.52            | 97.0             |
| 2.0              | 7.9         | 11.51            | 96.9             |
| 2.5              | 7.9         | 11.52            | 97.0             |

| Reference Lake D |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 18-Aug-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 8.1         | 11.66            | 98.8             |
| 0.5              | 8.2         | 11.64            | 98.8             |
| 1.0              | 8.2         | 11.65            | 98.8             |
| 1.5              | 8.2         | 11.64            | 98.7             |
| 2.0              | 8.2         | 11.61            | 98.5             |
| 2.5              | 8.2         | 11.76            | 98.7             |

| Reference Lake D |             |                  |                  |
|------------------|-------------|------------------|------------------|
| 19-Sep-14        |             |                  |                  |
| Depth            | Temperature | Dissolved Oxygen | Dissolved Oxygen |
| (m)              | (°C)        | (mg/L)           | Saturation (%)   |
| 0.0              | 1.7         | 14.03            | 100.6            |
| 0.5              | 1.7         | 14.08            | 101.0            |
| 1.0              | 1.7         | 14.08            | 100.9            |
| 1.5              | 1.7         | 14.09            | 101.0            |
| 2.0              | 1.7         | 14.00            | 100.7            |
| 2.5              | 1.8         | 13.92            | 100.4            |
| 3.0              | 1.9         | 13.89            | 100.2            |
| 3.5              | 1.9         | 13.86            | 100.0            |

### A.2.3 Marine Data

Marine Secchi depths and calculated euphotic zone depths (1% light level) are shown in Table A.2-3. Figures A.2-6 to A.2-8 show the temperature, dissolved oxygen, and salinity profiles collected at marine sites from April to September 2014; Annexes A.2-2 and A.2-3 provide the profile data in tabular form.

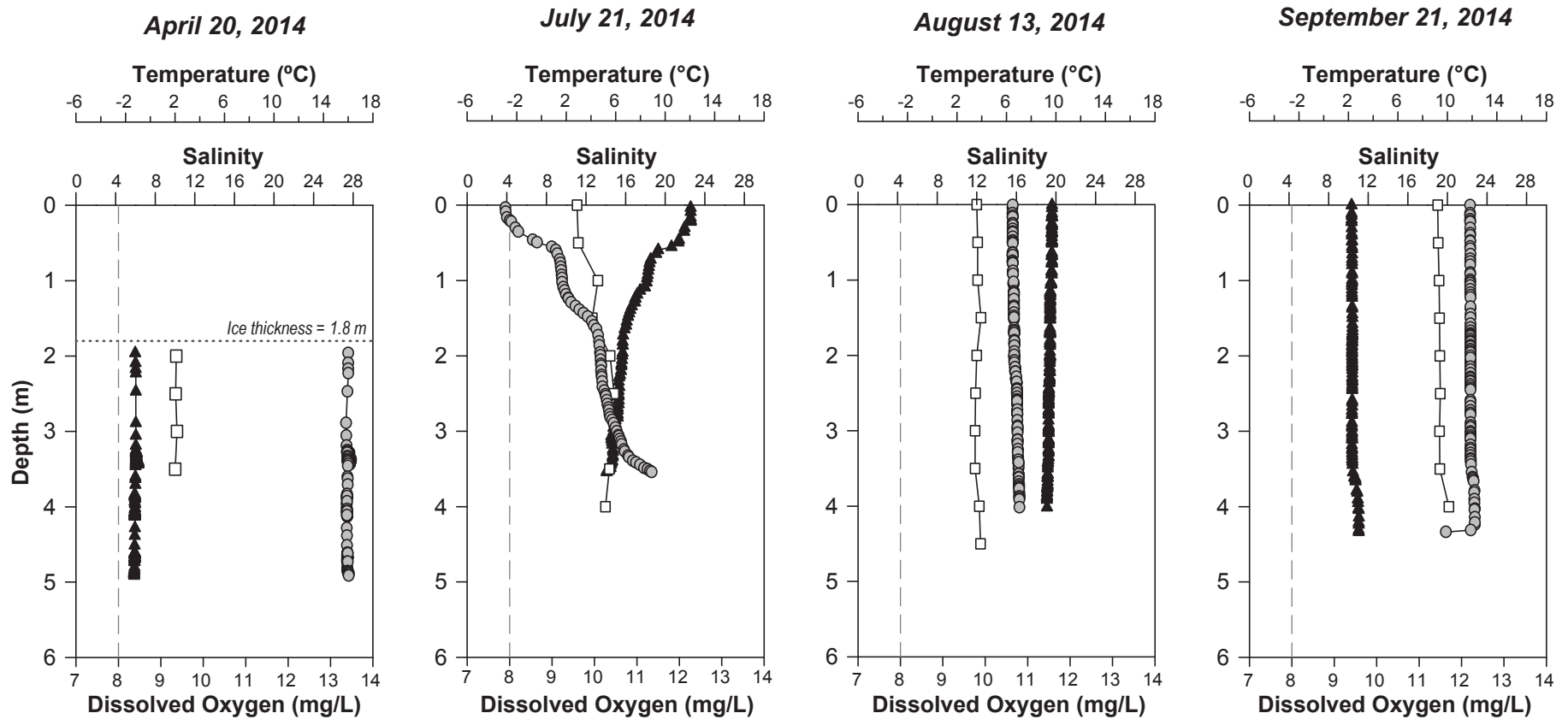
**Table A.2-3. Marine Secchi Depths and Euphotic Zone Depths, Doris North Project, 2014**

| Marine Site  | Sampling Date      | Secchi Depth (D <sub>s</sub> ) (m) | Euphotic Zone Depth 1% Light Level (m) |
|--------------|--------------------|------------------------------------|----------------------------------------|
| RBW          | July 21, 2014      | 1.3                                | 3.5                                    |
|              | August 13, 2014    | Bottom (5.0)                       | -                                      |
|              | September 21, 2014 | Bottom (4.75)                      | -                                      |
| RBE          | July 21, 2014      | Bottom (0.8)                       | -                                      |
|              | August 14, 2014    | Bottom (0.4)                       | -                                      |
|              | September 21, 2014 | Bottom (0.8)                       | -                                      |
| REF-Marine 1 | July 20, 2014      | 1.2                                | 3.2                                    |
|              | August 21, 2014    | Bottom (4.7)                       | -                                      |
|              | September 21, 2014 | Bottom (4.6)                       | -                                      |

*Note: - indicates that the euphotic zone depth was not calculated because the Secchi depth extended to the bottom of the water column.*

Figure A.2-6

Temperature, Salinity, and Dissolved Oxygen Profiles  
at Marine Site RBW, Doris North Project, 2014



Notes: Vertical dashed lines represent the CCME interim guideline for the minimum concentration of dissolved oxygen in marine and estuarine waters (8.0 mg/L).

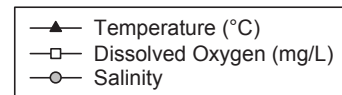
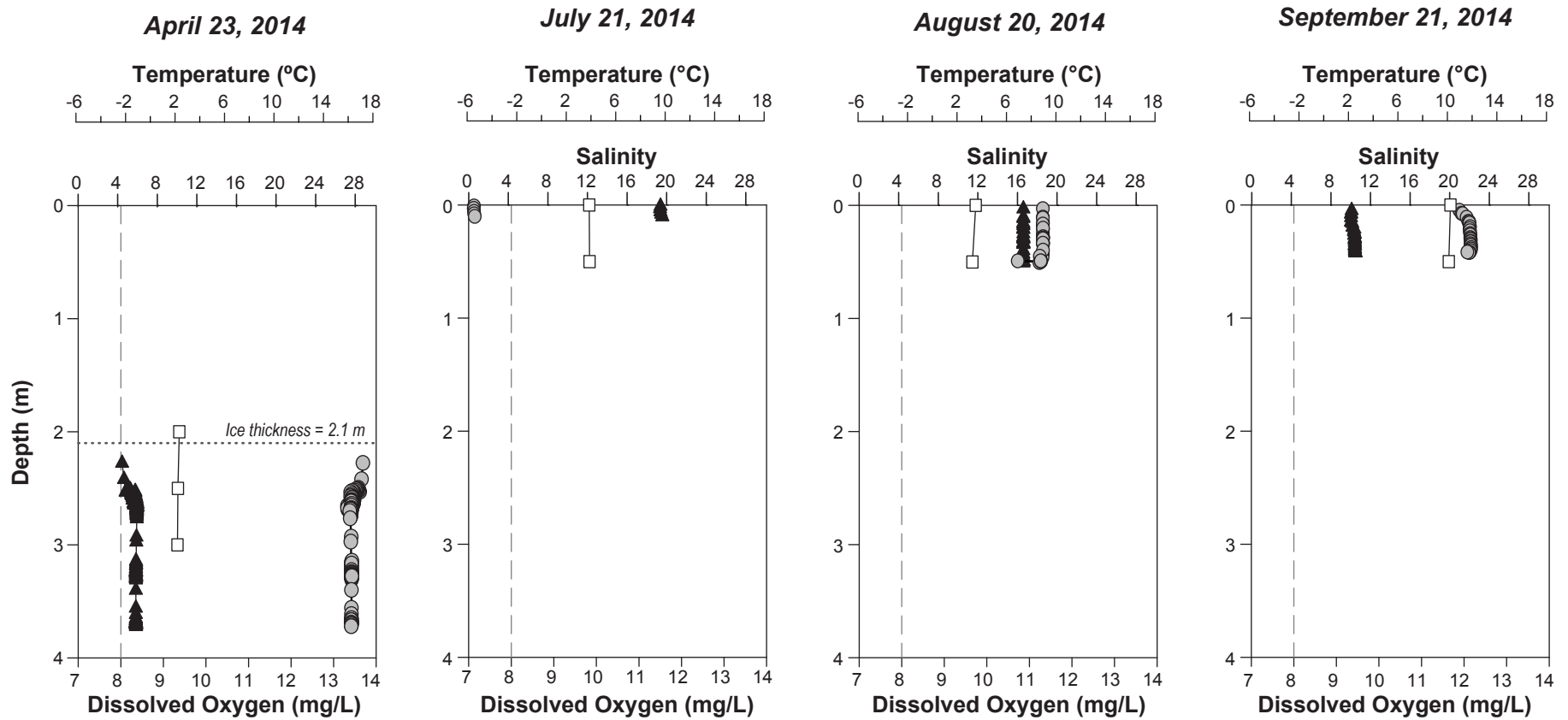


Figure A.2-7

Temperature, Salinity, and Dissolved Oxygen Profiles  
at Marine Site RBE, Doris North Project, 2014



Notes: Vertical dashed lines represent the CCME interim guideline for the minimum concentration of dissolved oxygen in marine and estuarine waters (8.0 mg/L).

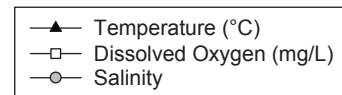
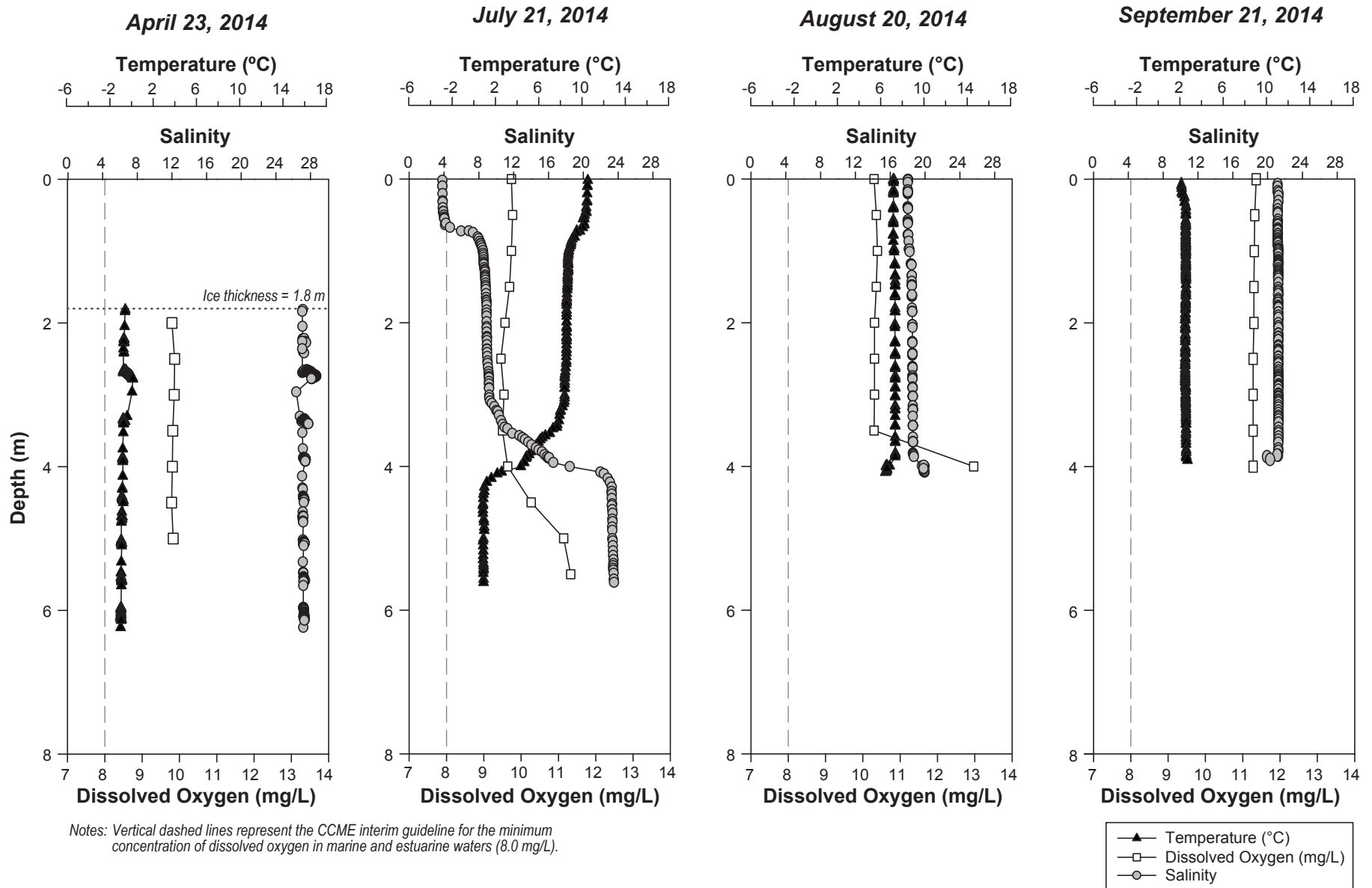


Figure A.2-8

Temperature, Salinity, and Dissolved Oxygen Profiles  
at Marine Site REF-Marine 1, Doris North Project, 2014



# Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature | Salinity |
| (m)       | (°C)        |          |
| 1.96      | -1.2        | 27.5     |
| 2.09      | -1.2        | 27.5     |
| 2.17      | -1.2        | 27.5     |
| 2.23      | -1.2        | 27.5     |
| 2.47      | -1.2        | 27.4     |
| 2.89      | -1.2        | 27.3     |
| 3.05      | -1.2        | 27.3     |
| 3.19      | -1.2        | 27.3     |
| 3.25      | -1.2        | 27.4     |
| 3.27      | -1.2        | 27.4     |
| 3.29      | -1.2        | 27.4     |
| 3.27      | -1.2        | 27.5     |
| 3.29      | -1.2        | 27.5     |
| 3.32      | -1.2        | 27.5     |
| 3.34      | -1.2        | 27.5     |
| 3.33      | -1.2        | 27.6     |
| 3.34      | -1.2        | 27.6     |
| 3.38      | -1.1        | 27.6     |
| 3.38      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.6     |
| 3.39      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.6     |
| 3.38      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.8     |
| 3.39      | -1.1        | 27.7     |
| 3.41      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.39      | -1.1        | 27.7     |
| 3.39      | -1.1        | 27.7     |
| 3.39      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.39      | -1.1        | 27.7     |
| 3.38      | -1.1        | 27.7     |
| 3.39      | -1.1        | 27.8     |
| 3.38      | -1.1        | 27.8     |
| 3.34      | -1.1        | 27.5     |
| 3.29      | -1.1        | 27.6     |
| 3.28      | -1.1        | 27.6     |

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature | Salinity |
| (m)       | (°C)        |          |
| 3.30      | -1.1        | 27.6     |
| 3.31      | -1.1        | 27.6     |
| 3.29      | -1.1        | 27.6     |
| 3.28      | -1.1        | 27.6     |
| 3.29      | -1.1        | 27.6     |
| 3.28      | -1.1        | 27.6     |
| 3.29      | -1.1        | 27.6     |
| 3.29      | -1.1        | 27.6     |
| 3.30      | -1.1        | 27.6     |
| 3.30      | -1.1        | 27.6     |
| 3.31      | -1.1        | 27.5     |
| 3.34      | -1.1        | 27.5     |
| 3.34      | -1.1        | 27.5     |
| 3.34      | -1.1        | 27.5     |
| 3.35      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.6     |
| 3.35      | -1.1        | 27.4     |
| 3.34      | -1.1        | 27.5     |
| 3.35      | -1.1        | 27.5     |
| 3.35      | -1.1        | 27.5     |
| 3.35      | -1.1        | 27.5     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.36      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.6     |
| 3.37      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.7     |
| 3.36      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.7     |
| 3.37      | -1.1        | 27.6     |

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature | Salinity |
| (m)       | (°C)        |          |
| 3.38      | -1.1        | 27.6     |
| 3.38      | -1.1        | 27.6     |
| 3.39      | -1.1        | 27.6     |
| 3.40      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.5     |
| 3.40      | -1.1        | 27.5     |
| 3.40      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.40      | -1.1        | 27.6     |
| 3.41      | -1.0        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.7     |
| 3.42      | -1.1        | 27.7     |
| 3.41      | -1.1        | 27.7     |
| 3.41      | -1.1        | 27.7     |
| 3.41      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.40      | -1.0        | 27.6     |
| 3.40      | -1.0        | 27.6     |
| 3.41      | -1.0        | 27.5     |
| 3.41      | -1.0        | 27.5     |
| 3.38      | -1.1        | 27.4     |
| 3.40      | -1.1        | 27.4     |
| 3.40      | -1.1        | 27.4     |
| 3.41      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.5     |

# Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 3.41      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.5     |
| 3.42      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.43      | -1.1        | 27.6     |
| 3.40      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.41      | -1.1        | 27.6     |
| 3.42      | -1.1        | 27.6     |
| 3.43      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.43      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.43      | -1.0        | 27.7     |
| 3.43      | -1.0        | 27.7     |
| 3.44      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.7     |
| 3.43      | -1.0        | 27.7     |
| 3.42      | -1.0        | 27.5     |
| 3.39      | -1.0        | 27.5     |
| 3.41      | -1.0        | 27.5     |
| 3.40      | -1.1        | 27.5     |
| 3.41      | -1.0        | 27.5     |
| 3.40      | -1.1        | 27.5     |
| 3.41      | -1.1        | 27.5     |
| 3.40      | -1.1        | 27.5     |
| 3.40      | -1.0        | 27.5     |
| 3.40      | -1.0        | 27.5     |
| 3.37      | -1.1        | 27.5     |
| 3.36      | -1.1        | 27.5     |
| 3.31      | -1.1        | 27.4     |

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 3.28      | -1.1        | 27.4     |
| 3.33      | -1.1        | 27.4     |
| 3.35      | -1.1        | 27.4     |
| 3.37      | -1.2        | 27.4     |
| 3.38      | -1.2        | 27.5     |
| 3.39      | -1.2        | 27.5     |
| 3.40      | -1.2        | 27.5     |
| 3.43      | -1.2        | 27.5     |
| 3.46      | -1.2        | 27.5     |
| 3.60      | -1.2        | 27.4     |
| 3.63      | -1.2        | 27.4     |
| 3.71      | -1.2        | 27.4     |
| 3.88      | -1.2        | 27.4     |
| 3.96      | -1.2        | 27.4     |
| 4.02      | -1.2        | 27.3     |
| 3.95      | -1.2        | 27.4     |
| 3.87      | -1.2        | 27.4     |
| 3.85      | -1.3        | 27.4     |
| 3.89      | -1.2        | 27.3     |
| 3.86      | -1.2        | 27.4     |
| 3.84      | -1.3        | 27.4     |
| 3.85      | -1.3        | 27.4     |
| 3.83      | -1.3        | 27.4     |
| 3.86      | -1.3        | 27.4     |
| 3.93      | -1.3        | 27.4     |
| 4.03      | -1.3        | 27.4     |
| 4.08      | -1.3        | 27.4     |
| 4.07      | -1.3        | 27.4     |
| 4.07      | -1.3        | 27.4     |
| 4.08      | -1.3        | 27.4     |
| 4.07      | -1.3        | 27.4     |
| 4.09      | -1.3        | 27.4     |
| 4.09      | -1.3        | 27.4     |
| 4.09      | -1.3        | 27.4     |
| 4.10      | -1.3        | 27.4     |
| 4.09      | -1.2        | 27.4     |
| 4.11      | -1.2        | 27.4     |
| 4.11      | -1.2        | 27.4     |
| 4.13      | -1.3        | 27.4     |
| 4.11      | -1.3        | 27.4     |
| 4.12      | -1.3        | 27.4     |
| 4.12      | -1.3        | 27.4     |
| 4.11      | -1.2        | 27.4     |

| RBW       |             |          |
|-----------|-------------|----------|
| 20-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 4.13      | -1.3        | 27.4     |
| 4.12      | -1.2        | 27.4     |
| 4.10      | -1.2        | 27.4     |
| 4.10      | -1.2        | 27.4     |
| 4.08      | -1.2        | 27.4     |
| 4.07      | -1.2        | 27.4     |
| 4.06      | -1.2        | 27.4     |
| 4.06      | -1.2        | 27.4     |
| 4.07      | -1.2        | 27.3     |
| 4.06      | -1.2        | 27.4     |
| 4.11      | -1.2        | 27.4     |
| 4.28      | -1.2        | 27.4     |
| 4.38      | -1.3        | 27.4     |
| 4.51      | -1.3        | 27.4     |
| 4.63      | -1.3        | 27.4     |
| 4.73      | -1.3        | 27.4     |
| 4.70      | -1.3        | 27.4     |
| 4.67      | -1.3        | 27.4     |
| 4.69      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.67      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.68      | -1.3        | 27.4     |
| 4.67      | -1.3        | 27.4     |
| 4.68      | -1.2        | 27.4     |
| 4.67      | -1.2        | 27.4     |
| 4.66      | -1.2        | 27.4     |
| 4.64      | -1.2        | 27.4     |
| 4.65      | -1.3        | 27.4     |
| 4.63      | -1.2        | 27.4     |
| 4.62      | -1.2        | 27.4     |
| 4.63      | -1.2        | 27.4     |
| 4.62      | -1.3        | 27.4     |
| 4.63      | -1.3        | 27.4     |
| 4.62      | -1.3        | 27.4     |
| 4.61      | -1.2        | 27.4     |
| 4.62      | -1.2        | 27.4     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW          |                     |          |
|--------------|---------------------|----------|
| 20-Apr-14    |                     |          |
| Depth<br>(m) | Temperature<br>(°C) | Salinity |
| 4.61         | -1.3                | 27.4     |
| 4.62         | -1.3                | 27.4     |
| 4.62         | -1.3                | 27.4     |
| 4.62         | -1.3                | 27.4     |
| 4.73         | -1.3                | 27.4     |
| 4.80         | -1.3                | 27.4     |
| 4.84         | -1.3                | 27.4     |
| 4.83         | -1.3                | 27.4     |
| 4.73         | -1.3                | 27.5     |
| 4.85         | -1.3                | 27.4     |
| 4.86         | -1.3                | 27.4     |
| 4.88         | -1.3                | 27.5     |
| 4.88         | -1.3                | 27.5     |
| 4.89         | -1.3                | 27.5     |
| 4.90         | -1.3                | 27.5     |
| 4.91         | -1.3                | 27.5     |

| RBW          |                     |          |
|--------------|---------------------|----------|
| 21-Jul-14    |                     |          |
| Depth<br>(m) | Temperature<br>(°C) | Salinity |
| 0.03         | 12.1                | 3.9      |
| 0.09         | 12.1                | 3.9      |
| 0.16         | 12.1                | 4.0      |
| 0.20         | 12.1                | 4.3      |
| 0.22         | 12.1                | 4.5      |
| 0.30         | 11.6                | 4.9      |
| 0.35         | 11.5                | 5.2      |
| 0.46         | 11.1                | 6.6      |
| 0.49         | 11.1                | 7.0      |
| 0.55         | 10.5                | 8.5      |
| 0.60         | 9.4                 | 9.0      |
| 0.64         | 9.3                 | 9.1      |
| 0.72         | 8.8                 | 9.3      |
| 0.77         | 8.7                 | 9.4      |
| 0.82         | 8.7                 | 9.5      |
| 0.87         | 8.6                 | 9.5      |
| 0.93         | 8.6                 | 9.5      |
| 0.97         | 8.5                 | 9.6      |
| 1.03         | 8.5                 | 9.6      |
| 1.09         | 8.4                 | 9.7      |
| 1.13         | 8.0                 | 9.8      |

| RBW          |                     |          |
|--------------|---------------------|----------|
| 21-Jul-14    |                     |          |
| Depth<br>(m) | Temperature<br>(°C) | Salinity |
| 1.19         | 7.7                 | 10.0     |
| 1.23         | 7.6                 | 10.2     |
| 1.24         | 7.6                 | 10.2     |
| 1.29         | 7.6                 | 10.5     |
| 1.34         | 7.3                 | 10.9     |
| 1.39         | 7.2                 | 11.3     |
| 1.43         | 7.1                 | 11.7     |
| 1.48         | 7.0                 | 12.2     |
| 1.54         | 6.9                 | 12.6     |
| 1.60         | 6.8                 | 12.8     |
| 1.64         | 6.7                 | 13.1     |
| 1.73         | 6.6                 | 13.2     |
| 1.81         | 6.6                 | 13.3     |
| 1.86         | 6.6                 | 13.4     |
| 1.96         | 6.6                 | 13.4     |
| 1.99         | 6.5                 | 13.5     |
| 2.05         | 6.5                 | 13.5     |
| 2.11         | 6.5                 | 13.5     |
| 2.13         | 6.5                 | 13.5     |
| 2.20         | 6.4                 | 13.5     |
| 2.26         | 6.4                 | 13.6     |
| 2.28         | 6.3                 | 13.6     |
| 2.34         | 6.2                 | 13.6     |
| 2.41         | 6.3                 | 13.7     |
| 2.46         | 6.2                 | 13.8     |
| 2.51         | 6.2                 | 14.0     |
| 2.53         | 6.2                 | 14.0     |
| 2.59         | 6.2                 | 14.1     |
| 2.64         | 6.2                 | 14.2     |
| 2.69         | 6.2                 | 14.3     |
| 2.72         | 6.2                 | 14.3     |
| 2.78         | 6.2                 | 14.4     |
| 2.81         | 6.2                 | 14.5     |
| 2.85         | 6.0                 | 14.6     |
| 2.89         | 5.9                 | 14.8     |
| 2.95         | 5.8                 | 15.0     |
| 3.00         | 5.8                 | 15.1     |
| 3.05         | 5.7                 | 15.3     |
| 3.07         | 5.6                 | 15.3     |
| 3.10         | 5.7                 | 15.4     |
| 3.14         | 5.7                 | 15.5     |
| 3.17         | 5.7                 | 15.6     |

| RBW          |                     |          |
|--------------|---------------------|----------|
| 21-Jul-14    |                     |          |
| Depth<br>(m) | Temperature<br>(°C) | Salinity |
| 3.24         | 5.8                 | 15.8     |
| 3.27         | 5.8                 | 15.9     |
| 3.32         | 5.8                 | 16.2     |
| 3.34         | 5.7                 | 16.3     |
| 3.39         | 5.7                 | 16.7     |
| 3.41         | 5.7                 | 17.1     |
| 3.45         | 5.6                 | 17.5     |
| 3.49         | 5.6                 | 17.9     |
| 3.50         | 5.5                 | 18.2     |
| 3.53         | 5.3                 | 18.5     |
| 3.54         | 5.3                 | 18.6     |

| RBW          |                     |          |
|--------------|---------------------|----------|
| 13-Aug-14    |                     |          |
| Depth<br>(m) | Temperature<br>(°C) | Salinity |
| 0.05         | 9.7                 | 15.6     |
| 0.01         | 9.7                 | 15.6     |
| 0.11         | 9.7                 | 15.6     |
| 0.16         | 9.7                 | 15.6     |
| 0.17         | 9.7                 | 15.6     |
| 0.15         | 9.7                 | 15.6     |
| 0.17         | 9.7                 | 15.6     |
| 0.25         | 9.7                 | 15.6     |
| 0.25         | 9.7                 | 15.6     |
| 0.28         | 9.7                 | 15.6     |
| 0.27         | 9.7                 | 15.6     |
| 0.25         | 9.7                 | 15.6     |
| 0.28         | 9.7                 | 15.6     |
| 0.32         | 9.7                 | 15.6     |
| 0.39         | 9.7                 | 15.6     |
| 0.36         | 9.7                 | 15.6     |
| 0.38         | 9.7                 | 15.6     |
| 0.37         | 9.7                 | 15.6     |
| 0.36         | 9.7                 | 15.6     |
| 0.37         | 9.7                 | 15.6     |
| 0.43         | 9.7                 | 15.6     |
| 0.48         | 9.7                 | 15.6     |
| 0.50         | 9.7                 | 15.6     |
| 0.48         | 9.7                 | 15.6     |
| 0.48         | 9.7                 | 15.6     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW       |             |          |
|-----------|-------------|----------|
| 13-Aug-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.50      | 9.7         | 15.6     |
| 0.50      | 9.7         | 15.6     |
| 0.52      | 9.7         | 15.6     |
| 0.68      | 9.7         | 15.6     |
| 0.67      | 9.7         | 15.6     |
| 0.63      | 9.7         | 15.6     |
| 0.64      | 9.7         | 15.6     |
| 0.68      | 9.7         | 15.6     |
| 0.67      | 9.7         | 15.6     |
| 0.75      | 9.7         | 15.6     |
| 0.78      | 9.7         | 15.6     |
| 0.77      | 9.7         | 15.6     |
| 0.77      | 9.7         | 15.6     |
| 0.78      | 9.7         | 15.6     |
| 0.89      | 9.7         | 15.6     |
| 0.89      | 9.6         | 15.7     |
| 0.92      | 9.7         | 15.7     |
| 0.88      | 9.7         | 15.6     |
| 0.92      | 9.6         | 15.7     |
| 1.06      | 9.6         | 15.7     |
| 1.04      | 9.6         | 15.7     |
| 1.05      | 9.6         | 15.7     |
| 1.04      | 9.6         | 15.7     |
| 1.03      | 9.6         | 15.7     |
| 1.18      | 9.5         | 15.7     |
| 1.21      | 9.5         | 15.7     |
| 1.15      | 9.5         | 15.7     |
| 1.16      | 9.5         | 15.7     |
| 1.16      | 9.5         | 15.8     |
| 1.20      | 9.5         | 15.8     |
| 1.18      | 9.5         | 15.7     |
| 1.27      | 9.5         | 15.8     |
| 1.40      | 9.5         | 15.7     |
| 1.29      | 9.5         | 15.7     |
| 1.28      | 9.5         | 15.7     |
| 1.38      | 9.5         | 15.7     |
| 1.32      | 9.5         | 15.7     |
| 1.26      | 9.5         | 15.7     |
| 1.38      | 9.5         | 15.8     |
| 1.35      | 9.5         | 15.7     |
| 1.36      | 9.5         | 15.7     |
| 1.46      | 9.5         | 15.8     |

| RBW       |             |          |
|-----------|-------------|----------|
| 13-Aug-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 1.46      | 9.5         | 15.8     |
| 1.52      | 9.5         | 15.8     |
| 1.43      | 9.5         | 15.8     |
| 1.48      | 9.5         | 15.8     |
| 1.52      | 9.5         | 15.8     |
| 1.50      | 9.5         | 15.8     |
| 1.70      | 9.5         | 15.8     |
| 1.64      | 9.5         | 15.8     |
| 1.72      | 9.5         | 15.8     |
| 1.71      | 9.5         | 15.8     |
| 1.68      | 9.5         | 15.8     |
| 1.67      | 9.5         | 15.8     |
| 1.70      | 9.5         | 15.8     |
| 1.69      | 9.5         | 15.8     |
| 1.68      | 9.5         | 15.8     |
| 1.71      | 9.5         | 15.8     |
| 1.80      | 9.5         | 15.8     |
| 1.84      | 9.5         | 15.8     |
| 1.84      | 9.5         | 15.8     |
| 1.84      | 9.5         | 15.8     |
| 1.82      | 9.5         | 15.8     |
| 1.87      | 9.5         | 15.8     |
| 1.95      | 9.5         | 15.8     |
| 2.01      | 9.5         | 15.8     |
| 2.02      | 9.5         | 15.8     |
| 2.01      | 9.5         | 15.8     |
| 2.04      | 9.5         | 15.8     |
| 2.01      | 9.5         | 15.8     |
| 2.00      | 9.5         | 15.8     |
| 2.07      | 9.5         | 15.8     |
| 2.10      | 9.5         | 15.8     |
| 2.22      | 9.5         | 15.9     |
| 2.16      | 9.5         | 15.9     |
| 2.21      | 9.5         | 15.9     |
| 2.16      | 9.5         | 15.9     |
| 2.20      | 9.5         | 15.9     |
| 2.16      | 9.5         | 15.9     |
| 2.22      | 9.5         | 15.9     |
| 2.22      | 9.5         | 15.9     |
| 2.31      | 9.5         | 15.9     |
| 2.33      | 9.5         | 16.0     |
| 2.31      | 9.5         | 15.9     |
| 2.30      | 9.5         | 16.0     |

| RBW       |             |          |
|-----------|-------------|----------|
| 13-Aug-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.37      | 9.4         | 16.0     |
| 2.28      | 9.5         | 16.0     |
| 2.36      | 9.5         | 16.0     |
| 2.35      | 9.5         | 16.0     |
| 2.49      | 9.4         | 16.1     |
| 2.48      | 9.4         | 16.1     |
| 2.44      | 9.4         | 16.1     |
| 2.51      | 9.4         | 16.1     |
| 2.44      | 9.4         | 16.1     |
| 2.52      | 9.4         | 16.1     |
| 2.46      | 9.4         | 16.1     |
| 2.50      | 9.4         | 16.1     |
| 2.55      | 9.4         | 16.1     |
| 2.63      | 9.4         | 16.1     |
| 2.59      | 9.4         | 16.1     |
| 2.65      | 9.4         | 16.1     |
| 2.59      | 9.4         | 16.1     |
| 2.60      | 9.4         | 16.1     |
| 2.65      | 9.4         | 16.1     |
| 2.61      | 9.4         | 16.1     |
| 2.61      | 9.4         | 16.1     |
| 2.75      | 9.4         | 16.1     |
| 2.78      | 9.4         | 16.1     |
| 2.74      | 9.4         | 16.1     |
| 2.73      | 9.4         | 16.1     |
| 2.78      | 9.4         | 16.1     |
| 2.72      | 9.4         | 16.1     |
| 2.77      | 9.4         | 16.1     |
| 2.86      | 9.4         | 16.1     |
| 2.98      | 9.4         | 16.1     |
| 2.97      | 9.4         | 16.1     |
| 2.94      | 9.4         | 16.1     |
| 3.00      | 9.4         | 16.1     |
| 2.94      | 9.4         | 16.1     |
| 3.01      | 9.4         | 16.1     |
| 2.95      | 9.4         | 16.1     |
| 3.03      | 9.4         | 16.1     |
| 3.16      | 9.4         | 16.1     |
| 3.13      | 9.4         | 16.1     |
| 3.12      | 9.4         | 16.1     |
| 3.14      | 9.4         | 16.1     |
| 3.15      | 9.4         | 16.1     |
| 3.12      | 9.4         | 16.1     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW       |             |          |
|-----------|-------------|----------|
| 13-Aug-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 3.18      | 9.4         | 16.1     |
| 3.35      | 9.4         | 16.2     |
| 3.26      | 9.4         | 16.1     |
| 3.26      | 9.4         | 16.2     |
| 3.34      | 9.4         | 16.2     |
| 3.25      | 9.4         | 16.2     |
| 3.29      | 9.4         | 16.1     |
| 3.43      | 9.4         | 16.2     |
| 3.39      | 9.4         | 16.2     |
| 3.50      | 9.3         | 16.2     |
| 3.42      | 9.4         | 16.2     |
| 3.43      | 9.4         | 16.2     |
| 3.47      | 9.3         | 16.2     |
| 3.42      | 9.3         | 16.2     |
| 3.58      | 9.3         | 16.2     |
| 3.58      | 9.3         | 16.2     |
| 3.62      | 9.3         | 16.2     |
| 3.58      | 9.3         | 16.2     |
| 3.62      | 9.3         | 16.2     |
| 3.61      | 9.3         | 16.2     |
| 3.62      | 9.3         | 16.2     |
| 3.68      | 9.3         | 16.2     |
| 3.76      | 9.3         | 16.3     |
| 3.72      | 9.3         | 16.3     |
| 3.71      | 9.3         | 16.3     |
| 3.74      | 9.3         | 16.3     |
| 3.76      | 9.3         | 16.3     |
| 3.81      | 9.3         | 16.3     |
| 3.86      | 9.3         | 16.3     |
| 3.82      | 9.3         | 16.3     |
| 3.87      | 9.3         | 16.3     |
| 3.77      | 9.3         | 16.3     |
| 3.87      | 9.3         | 16.3     |
| 3.89      | 9.3         | 16.3     |
| 3.91      | 9.3         | 16.3     |
| 4.02      | 9.3         | 16.3     |

| RBW       |             |          |
|-----------|-------------|----------|
| 21-Sep-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.00      | 2.3         | 22.3     |

| RBW       |             |          |
|-----------|-------------|----------|
| 21-Sep-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.11      | 2.3         | 22.3     |
| 0.14      | 2.3         | 22.3     |
| 0.19      | 2.3         | 22.3     |
| 0.21      | 2.3         | 22.3     |
| 0.22      | 2.3         | 22.3     |
| 0.30      | 2.3         | 22.3     |
| 0.37      | 2.3         | 22.3     |
| 0.40      | 2.3         | 22.3     |
| 0.47      | 2.3         | 22.3     |
| 0.48      | 2.3         | 22.3     |
| 0.55      | 2.3         | 22.3     |
| 0.58      | 2.3         | 22.3     |
| 0.65      | 2.3         | 22.3     |
| 0.71      | 2.3         | 22.3     |
| 0.75      | 2.3         | 22.3     |
| 0.79      | 2.3         | 22.3     |
| 0.90      | 2.3         | 22.3     |
| 0.92      | 2.3         | 22.3     |
| 0.99      | 2.3         | 22.3     |
| 1.01      | 2.3         | 22.3     |
| 1.03      | 2.3         | 22.3     |
| 1.07      | 2.3         | 22.3     |
| 1.12      | 2.3         | 22.3     |
| 1.16      | 2.3         | 22.3     |
| 1.20      | 2.3         | 22.3     |
| 1.23      | 2.3         | 22.3     |
| 1.37      | 2.3         | 22.3     |
| 1.35      | 2.3         | 22.3     |
| 1.45      | 2.3         | 22.3     |
| 1.49      | 2.3         | 22.3     |
| 1.57      | 2.3         | 22.3     |
| 1.63      | 2.3         | 22.3     |
| 1.67      | 2.3         | 22.3     |
| 1.70      | 2.3         | 22.3     |
| 1.72      | 2.3         | 22.3     |
| 1.73      | 2.3         | 22.3     |
| 1.74      | 2.3         | 22.3     |
| 1.78      | 2.3         | 22.3     |
| 1.80      | 2.3         | 22.3     |
| 1.82      | 2.3         | 22.3     |
| 1.82      | 2.3         | 22.3     |
| 1.86      | 2.3         | 22.3     |

| RBW       |             |          |
|-----------|-------------|----------|
| 21-Sep-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 1.88      | 2.3         | 22.3     |
| 1.91      | 2.3         | 22.3     |
| 1.94      | 2.3         | 22.3     |
| 1.96      | 2.3         | 22.3     |
| 1.96      | 2.3         | 22.3     |
| 2.00      | 2.3         | 22.3     |
| 2.06      | 2.3         | 22.3     |
| 2.09      | 2.3         | 22.3     |
| 2.11      | 2.3         | 22.3     |
| 2.13      | 2.3         | 22.3     |
| 2.03      | 2.3         | 22.3     |
| 2.14      | 2.3         | 22.3     |
| 2.18      | 2.3         | 22.3     |
| 2.23      | 2.3         | 22.3     |
| 2.28      | 2.3         | 22.3     |
| 2.30      | 2.3         | 22.3     |
| 2.33      | 2.3         | 22.3     |
| 2.34      | 2.3         | 22.3     |
| 2.38      | 2.3         | 22.3     |
| 2.41      | 2.3         | 22.3     |
| 2.44      | 2.3         | 22.3     |
| 2.45      | 2.3         | 22.3     |
| 2.59      | 2.3         | 22.3     |
| 2.62      | 2.3         | 22.3     |
| 2.67      | 2.3         | 22.3     |
| 2.72      | 2.3         | 22.3     |
| 2.76      | 2.3         | 22.3     |
| 2.78      | 2.3         | 22.3     |
| 2.88      | 2.3         | 22.3     |
| 2.93      | 2.3         | 22.3     |
| 2.95      | 2.3         | 22.3     |
| 3.01      | 2.3         | 22.3     |
| 3.02      | 2.3         | 22.3     |
| 3.06      | 2.3         | 22.3     |
| 3.08      | 2.3         | 22.3     |
| 3.11      | 2.3         | 22.3     |
| 3.10      | 2.3         | 22.3     |
| 3.18      | 2.3         | 22.3     |
| 3.22      | 2.3         | 22.3     |
| 3.25      | 2.3         | 22.3     |
| 3.29      | 2.3         | 22.3     |
| 3.32      | 2.3         | 22.3     |
| 3.36      | 2.3         | 22.3     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBW       |             |          |
|-----------|-------------|----------|
| 21-Sep-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 3.38      | 2.3         | 22.4     |
| 3.40      | 2.3         | 22.4     |
| 3.44      | 2.3         | 22.4     |
| 3.54      | 2.4         | 22.5     |
| 3.61      | 2.5         | 22.5     |
| 3.62      | 2.6         | 22.6     |
| 3.64      | 2.6         | 22.6     |
| 3.66      | 2.6         | 22.6     |
| 3.79      | 2.7         | 22.8     |
| 3.81      | 2.7         | 22.7     |
| 3.90      | 2.8         | 22.7     |
| 3.95      | 2.8         | 22.7     |
| 4.03      | 2.8         | 22.8     |
| 4.04      | 2.8         | 22.7     |
| 4.14      | 2.8         | 22.8     |
| 4.24      | 2.8         | 22.8     |
| 4.21      | 2.8         | 22.8     |
| 4.31      | 2.8         | 22.4     |
| 4.34      | 2.8         | 19.8     |

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.28      | -2.5        | 28.7     |
| 2.42      | -2.3        | 28.5     |
| 2.53      | -2.2        | 28.4     |
| 2.52      | -2.1        | 28.3     |
| 2.50      | -2.0        | 28.2     |
| 2.51      | -2.0        | 28.1     |
| 2.52      | -1.9        | 28.1     |
| 2.52      | -1.9        | 28.1     |
| 2.51      | -1.8        | 28.0     |
| 2.51      | -1.8        | 28.0     |
| 2.52      | -1.8        | 27.9     |
| 2.53      | -1.8        | 27.8     |
| 2.54      | -1.8        | 27.7     |
| 2.55      | -1.7        | 27.8     |
| 2.55      | -1.7        | 27.8     |
| 2.56      | -1.7        | 27.8     |
| 2.56      | -1.7        | 27.8     |

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.56      | -1.7        | 27.8     |
| 2.56      | -1.7        | 27.8     |
| 2.55      | -1.7        | 27.8     |
| 2.56      | -1.6        | 27.8     |
| 2.58      | -1.6        | 27.7     |
| 2.60      | -1.6        | 27.8     |
| 2.59      | -1.6        | 27.6     |
| 2.60      | -1.6        | 27.7     |
| 2.63      | -1.5        | 27.7     |
| 2.64      | -1.5        | 27.7     |
| 2.65      | -1.5        | 27.7     |
| 2.64      | -1.5        | 27.7     |
| 2.64      | -1.5        | 27.7     |
| 2.63      | -1.5        | 27.7     |
| 2.64      | -1.5        | 27.7     |
| 2.64      | -1.5        | 27.5     |
| 2.64      | -1.5        | 27.4     |
| 2.60      | -1.5        | 27.5     |
| 2.58      | -1.4        | 27.6     |
| 2.58      | -1.4        | 27.6     |
| 2.56      | -1.4        | 27.6     |
| 2.54      | -1.4        | 27.7     |
| 2.53      | -1.4        | 27.6     |
| 2.53      | -1.4        | 27.4     |
| 2.55      | -1.4        | 27.5     |
| 2.57      | -1.4        | 27.6     |
| 2.57      | -1.4        | 27.6     |
| 2.58      | -1.4        | 27.5     |
| 2.58      | -1.4        | 27.5     |
| 2.57      | -1.4        | 27.5     |
| 2.57      | -1.4        | 27.5     |
| 2.57      | -1.4        | 27.5     |
| 2.57      | -1.4        | 27.5     |
| 2.58      | -1.4        | 27.5     |
| 2.59      | -1.4        | 27.6     |
| 2.57      | -1.4        | 27.4     |
| 2.61      | -1.4        | 27.6     |
| 2.60      | -1.3        | 27.5     |
| 2.59      | -1.3        | 27.6     |
| 2.58      | -1.3        | 27.6     |
| 2.60      | -1.3        | 27.6     |

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.59      | -1.3        | 27.6     |
| 2.61      | -1.3        | 27.6     |
| 2.64      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.6     |
| 2.62      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.4     |
| 2.64      | -1.3        | 27.4     |
| 2.64      | -1.3        | 27.3     |
| 2.65      | -1.3        | 27.1     |
| 2.71      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.63      | -1.3        | 27.5     |
| 2.63      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.4     |
| 2.62      | -1.3        | 27.4     |
| 2.63      | -1.3        | 27.4     |
| 2.64      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.4     |
| 2.66      | -1.3        | 27.4     |
| 2.64      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.61      | -1.3        | 27.5     |
| 2.62      | -1.3        | 27.5     |
| 2.65      | -1.3        | 27.5     |
| 2.65      | -1.3        | 27.5     |
| 2.65      | -1.3        | 27.4     |
| 2.67      | -1.3        | 27.3     |
| 2.66      | -1.3        | 27.3     |
| 2.66      | -1.3        | 27.3     |
| 2.66      | -1.3        | 27.4     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.66      | -1.3        | 27.4     |
| 2.66      | -1.3        | 27.4     |
| 2.66      | -1.3        | 27.4     |
| 2.65      | -1.3        | 27.4     |
| 2.66      | -1.3        | 27.4     |
| 2.66      | -1.3        | 27.4     |
| 2.67      | -1.3        | 27.4     |
| 2.67      | -1.3        | 27.4     |
| 2.62      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.67      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.3     |
| 2.69      | -1.3        | 27.2     |
| 2.69      | -1.3        | 27.3     |
| 2.68      | -1.3        | 27.1     |
| 2.71      | -1.3        | 27.5     |
| 2.72      | -1.3        | 27.5     |
| 2.73      | -1.3        | 27.5     |
| 2.72      | -1.3        | 27.5     |
| 2.75      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.73      | -1.3        | 27.5     |
| 2.73      | -1.3        | 27.5     |
| 2.74      | -1.3        | 27.5     |
| 2.74      | -1.3        | 27.5     |
| 2.71      | -1.3        | 27.5     |
| 2.71      | -1.3        | 27.5     |
| 2.65      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.67      | -1.3        | 27.5     |
| 2.64      | -1.3        | 27.5     |
| 2.66      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.70      | -1.3        | 27.5     |
| 2.70      | -1.3        | 27.5     |
| 2.66      | -1.3        | 27.5     |
| 2.70      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.67      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 2.70      | -1.3        | 27.4     |
| 2.69      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |
| 2.68      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.5     |
| 2.69      | -1.3        | 27.4     |
| 2.69      | -1.3        | 27.4     |
| 2.70      | -1.3        | 27.3     |
| 2.77      | -1.3        | 27.4     |
| 2.93      | -1.3        | 27.5     |
| 2.97      | -1.3        | 27.5     |
| 3.17      | -1.3        | 27.5     |
| 3.15      | -1.3        | 27.5     |
| 3.14      | -1.3        | 27.5     |
| 3.18      | -1.4        | 27.5     |
| 3.20      | -1.4        | 27.5     |
| 3.18      | -1.4        | 27.5     |
| 3.21      | -1.4        | 27.5     |
| 3.23      | -1.4        | 27.5     |
| 3.23      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.23      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.21      | -1.3        | 27.5     |
| 3.17      | -1.4        | 27.5     |
| 3.23      | -1.4        | 27.5     |
| 3.24      | -1.4        | 27.5     |
| 3.25      | -1.4        | 27.5     |
| 3.25      | -1.4        | 27.5     |
| 3.26      | -1.4        | 27.5     |
| 3.27      | -1.4        | 27.5     |
| 3.27      | -1.4        | 27.5     |
| 3.28      | -1.4        | 27.5     |
| 3.30      | -1.4        | 27.5     |
| 3.31      | -1.4        | 27.5     |
| 3.30      | -1.4        | 27.5     |
| 3.28      | -1.4        | 27.5     |
| 3.27      | -1.4        | 27.5     |

| RBE       |             |          |
|-----------|-------------|----------|
| 23-Apr-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 3.27      | -1.4        | 27.5     |
| 3.29      | -1.3        | 27.5     |
| 3.29      | -1.4        | 27.5     |
| 3.29      | -1.4        | 27.5     |
| 3.30      | -1.4        | 27.5     |
| 3.29      | -1.4        | 27.5     |
| 3.28      | -1.4        | 27.5     |
| 3.40      | -1.4        | 27.5     |
| 3.56      | -1.4        | 27.5     |
| 3.61      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.71      | -1.4        | 27.5     |
| 3.65      | -1.4        | 27.5     |
| 3.68      | -1.4        | 27.5     |
| 3.67      | -1.4        | 27.5     |
| 3.65      | -1.4        | 27.5     |
| 3.67      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.68      | -1.4        | 27.5     |
| 3.68      | -1.4        | 27.5     |
| 3.69      | -1.4        | 27.5     |
| 3.67      | -1.4        | 27.5     |
| 3.70      | -1.4        | 27.5     |
| 3.70      | -1.4        | 27.5     |
| 3.70      | -1.4        | 27.5     |
| 3.70      | -1.4        | 27.5     |
| 3.70      | -1.4        | 27.5     |
| 3.71      | -1.4        | 27.5     |
| 3.70      | -1.3        | 27.5     |
| 3.70      | -1.3        | 27.5     |
| 3.69      | -1.3        | 27.5     |
| 3.70      | -1.3        | 27.5     |
| 3.71      | -1.3        | 27.5     |
| 3.72      | -1.3        | 27.5     |
| 3.72      | -1.3        | 27.5     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| RBE       |             |          |
|-----------|-------------|----------|
| 21-Jul-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.01      | 9.4         | 0.5      |
| 0.03      | 9.4         | 0.5      |
| 0.06      | 9.5         | 0.5      |
| 0.08      | 9.5         | 0.6      |
| 0.10      | 9.6         | 0.6      |

| RBE       |             |          |
|-----------|-------------|----------|
| 20-Aug-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.03      | 7.2         | 18.5     |
| 0.18      | 7.2         | 18.5     |
| 0.15      | 7.2         | 18.5     |
| 0.11      | 7.2         | 18.5     |
| 0.11      | 7.2         | 18.5     |
| 0.28      | 7.2         | 18.5     |
| 0.21      | 7.2         | 18.5     |
| 0.17      | 7.2         | 18.5     |
| 0.25      | 7.2         | 18.5     |
| 0.33      | 7.2         | 18.5     |
| 0.20      | 7.2         | 18.5     |
| 0.29      | 7.2         | 18.5     |
| 0.33      | 7.2         | 18.5     |
| 0.28      | 7.2         | 18.5     |
| 0.29      | 7.2         | 18.5     |
| 0.34      | 7.2         | 18.5     |
| 0.30      | 7.2         | 18.5     |
| 0.43      | 7.2         | 18.5     |
| 0.34      | 7.2         | 18.5     |
| 0.46      | 7.2         | 18.5     |
| 0.34      | 7.2         | 18.5     |
| 0.40      | 7.2         | 18.5     |
| 0.45      | 7.2         | 18.2     |
| 0.51      | 7.2         | 18.2     |
| 0.49      | 7.2         | 18.3     |
| 0.50      | 7.2         | 18.3     |
| 0.49      | 7.2         | 16.0     |
| 0.49      | 7.2         | 18.3     |

| RBE       |             |          |
|-----------|-------------|----------|
| 21-Sep-14 |             |          |
| Depth     | Temperature |          |
| (m)       | (°C)        | Salinity |
| 0.05      | 2.1         | 21.0     |
| 0.07      | 2.0         | 21.2     |
| 0.08      | 2.0         | 21.3     |
| 0.11      | 2.0         | 21.7     |
| 0.15      | 2.0         | 21.9     |
| 0.15      | 2.0         | 22.0     |
| 0.16      | 2.1         | 22.0     |
| 0.19      | 2.2         | 22.0     |
| 0.21      | 2.3         | 22.0     |
| 0.24      | 2.3         | 22.0     |
| 0.23      | 2.3         | 22.0     |
| 0.25      | 2.3         | 22.0     |
| 0.27      | 2.3         | 22.1     |
| 0.29      | 2.3         | 22.1     |
| 0.29      | 2.4         | 22.1     |
| 0.30      | 2.3         | 22.1     |
| 0.31      | 2.3         | 22.1     |
| 0.32      | 2.3         | 22.1     |
| 0.33      | 2.3         | 22.1     |
| 0.34      | 2.4         | 22.1     |
| 0.36      | 2.3         | 22.1     |
| 0.36      | 2.4         | 22.1     |
| 0.38      | 2.3         | 22.1     |
| 0.39      | 2.4         | 22.1     |
| 0.40      | 2.3         | 22.1     |
| 0.42      | 2.4         | 22.0     |
| 0.42      | 2.4         | 21.9     |
| 0.42      | 2.4         | 21.8     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 1.81         | -0.7        | 27.2     |
| 1.84         | -0.7        | 27.2     |
| 2.05         | -0.7        | 27.2     |
| 2.22         | -0.8        | 27.2     |
| 2.22         | -0.8        | 27.2     |
| 2.22         | -0.8        | 27.4     |
| 2.27         | -0.8        | 27.3     |
| 2.26         | -0.8        | 27.4     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 2.26         | -0.8        | 27.5     |
| 2.27         | -0.8        | 27.5     |
| 2.27         | -0.8        | 27.6     |
| 2.40         | -0.8        | 27.3     |
| 2.42         | -0.8        | 27.4     |
| 2.26         | -0.8        | 27.2     |
| 2.36         | -0.9        | 27.2     |
| 2.69         | -0.9        | 27.2     |
| 2.68         | -0.9        | 27.2     |
| 2.67         | -0.9        | 27.3     |
| 2.67         | -0.9        | 27.4     |
| 2.66         | -0.8        | 27.4     |
| 2.66         | -0.8        | 27.5     |
| 2.66         | -0.8        | 27.6     |
| 2.65         | -0.8        | 27.6     |
| 2.66         | -0.8        | 27.6     |
| 2.65         | -0.8        | 27.7     |
| 2.66         | -0.8        | 27.7     |
| 2.66         | -0.8        | 27.7     |
| 2.66         | -0.7        | 27.8     |
| 2.67         | -0.7        | 27.8     |
| 2.67         | -0.7        | 27.9     |
| 2.67         | -0.7        | 27.9     |
| 2.67         | -0.7        | 28.0     |
| 2.68         | -0.7        | 28.0     |
| 2.67         | -0.7        | 28.1     |
| 2.68         | -0.6        | 28.1     |
| 2.66         | -0.6        | 27.4     |
| 2.67         | -0.7        | 27.5     |
| 2.67         | -0.7        | 27.6     |
| 2.68         | -0.7        | 27.7     |
| 2.68         | -0.6        | 27.8     |
| 2.68         | -0.6        | 27.8     |
| 2.68         | -0.6        | 27.9     |
| 2.68         | -0.6        | 27.9     |
| 2.69         | -0.6        | 28.0     |
| 2.69         | -0.6        | 28.0     |
| 2.69         | -0.5        | 28.0     |
| 2.69         | -0.5        | 28.1     |
| 2.69         | -0.5        | 28.1     |
| 2.69         | -0.5        | 28.1     |
| 2.70         | -0.5        | 28.2     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 2.70         | -0.4        | 28.2     |
| 2.71         | -0.4        | 28.2     |
| 2.70         | -0.4        | 28.3     |
| 2.71         | -0.4        | 28.3     |
| 2.71         | -0.4        | 28.3     |
| 2.71         | -0.4        | 28.3     |
| 2.71         | -0.4        | 28.4     |
| 2.71         | -0.3        | 28.4     |
| 2.72         | -0.3        | 28.4     |
| 2.72         | -0.3        | 28.4     |
| 2.72         | -0.3        | 28.5     |
| 2.72         | -0.3        | 28.5     |
| 2.73         | -0.3        | 28.5     |
| 2.72         | -0.3        | 28.5     |
| 2.72         | -0.2        | 28.5     |
| 2.73         | -0.2        | 28.6     |
| 2.73         | -0.2        | 28.6     |
| 2.73         | -0.2        | 28.6     |
| 2.73         | -0.2        | 28.6     |
| 2.74         | -0.2        | 28.6     |
| 2.74         | -0.2        | 28.6     |
| 2.74         | -0.2        | 28.7     |
| 2.74         | -0.2        | 28.7     |
| 2.74         | -0.2        | 28.7     |
| 2.74         | -0.2        | 28.6     |
| 2.74         | -0.1        | 28.6     |
| 2.74         | -0.1        | 28.6     |
| 2.74         | -0.1        | 28.6     |
| 2.75         | -0.1        | 28.6     |
| 2.76         | -0.1        | 28.5     |
| 2.75         | -0.1        | 28.5     |
| 2.75         | -0.1        | 28.5     |
| 2.76         | -0.1        | 28.4     |
| 2.75         | -0.1        | 28.4     |
| 2.76         | -0.1        | 28.4     |
| 2.75         | -0.1        | 28.4     |
| 2.76         | -0.1        | 28.3     |
| 2.76         | -0.1        | 28.3     |
| 2.76         | -0.1        | 28.3     |
| 2.77         | 0.0         | 28.3     |
| 2.76         | 0.0         | 28.2     |
| 2.77         | 0.0         | 28.2     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 2.77         | 0.0         | 28.2     |
| 2.77         | 0.0         | 28.2     |
| 2.78         | 0.0         | 28.2     |
| 2.77         | 0.0         | 28.2     |
| 2.78         | 0.0         | 28.2     |
| 2.77         | 0.0         | 28.1     |
| 2.96         | -0.1        | 26.5     |
| 3.30         | -0.5        | 26.9     |
| 3.37         | -0.7        | 27.1     |
| 3.37         | -0.8        | 27.1     |
| 3.35         | -0.8        | 27.2     |
| 3.35         | -0.8        | 27.3     |
| 3.34         | -0.8        | 27.3     |
| 3.34         | -0.9        | 27.4     |
| 3.33         | -0.9        | 27.4     |
| 3.34         | -0.9        | 27.4     |
| 3.34         | -0.9        | 27.4     |
| 3.35         | -0.9        | 27.4     |
| 3.35         | -0.9        | 27.5     |
| 3.36         | -0.9        | 27.5     |
| 3.35         | -0.9        | 27.5     |
| 3.36         | -0.9        | 27.5     |
| 3.37         | -0.8        | 27.5     |
| 3.37         | -0.8        | 27.5     |
| 3.38         | -0.9        | 27.6     |
| 3.37         | -0.9        | 27.6     |
| 3.37         | -0.9        | 27.6     |
| 3.38         | -0.9        | 27.6     |
| 3.38         | -0.9        | 27.7     |
| 3.39         | -0.9        | 27.7     |
| 3.39         | -0.9        | 27.7     |
| 3.40         | -0.8        | 27.7     |
| 3.39         | -0.8        | 27.8     |
| 3.40         | -0.8        | 27.8     |
| 3.40         | -0.8        | 27.8     |
| 3.40         | -0.8        | 27.8     |
| 3.52         | -0.9        | 27.2     |
| 3.75         | -0.9        | 27.2     |
| 3.87         | -0.9        | 27.3     |
| 3.88         | -0.9        | 27.3     |
| 3.88         | -0.9        | 27.3     |
| 3.89         | -0.9        | 27.4     |
| 3.89         | -0.9        | 27.4     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 3.88         | -0.9        | 27.4     |
| 3.88         | -0.9        | 27.4     |
| 3.87         | -0.9        | 27.3     |
| 3.88         | -0.9        | 27.4     |
| 3.88         | -0.9        | 27.4     |
| 3.88         | -0.9        | 27.5     |
| 3.89         | -0.9        | 27.5     |
| 3.88         | -0.9        | 27.5     |
| 3.89         | -0.9        | 27.5     |
| 3.90         | -0.9        | 27.5     |
| 3.91         | -0.9        | 27.5     |
| 3.91         | -0.9        | 27.5     |
| 3.93         | -0.9        | 27.5     |
| 3.92         | -0.9        | 27.5     |
| 4.13         | -0.9        | 27.1     |
| 4.30         | -1.0        | 27.2     |
| 4.32         | -1.0        | 27.2     |
| 4.41         | -1.0        | 27.3     |
| 4.42         | -1.0        | 27.3     |
| 4.44         | -1.0        | 27.3     |
| 4.44         | -1.0        | 27.3     |
| 4.43         | -1.0        | 27.3     |
| 4.43         | -1.0        | 27.3     |
| 4.44         | -1.0        | 27.3     |
| 4.45         | -1.0        | 27.3     |
| 4.45         | -1.0        | 27.3     |
| 4.44         | -1.0        | 27.3     |
| 4.44         | -1.0        | 27.4     |
| 4.44         | -1.0        | 27.4     |
| 4.46         | -1.0        | 27.4     |
| 4.46         | -0.9        | 27.4     |
| 4.47         | -0.9        | 27.4     |
| 4.46         | -0.9        | 27.4     |
| 4.47         | -0.9        | 27.4     |
| 4.47         | -0.9        | 27.4     |
| 4.50         | -0.9        | 27.3     |
| 4.70         | -1.0        | 27.2     |
| 4.73         | -1.0        | 27.2     |
| 4.63         | -1.0        | 27.2     |
| 4.69         | -1.0        | 27.2     |
| 4.69         | -1.0        | 27.3     |
| 4.70         | -1.0        | 27.3     |
| 4.76         | -1.0        | 27.2     |

# Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 4.77         | -1.1        | 27.3     |
| 5.02         | -1.1        | 27.2     |
| 5.08         | -1.1        | 27.2     |
| 5.06         | -1.1        | 27.3     |
| 5.04         | -1.1        | 27.3     |
| 5.05         | -1.1        | 27.3     |
| 5.05         | -1.1        | 27.3     |
| 5.04         | -1.1        | 27.3     |
| 5.05         | -1.1        | 27.3     |
| 5.05         | -1.1        | 27.4     |
| 5.05         | -1.1        | 27.4     |
| 5.05         | -1.1        | 27.4     |
| 5.06         | -1.0        | 27.4     |
| 5.06         | -1.0        | 27.4     |
| 5.07         | -1.0        | 27.4     |
| 5.07         | -1.0        | 27.4     |
| 5.07         | -1.0        | 27.4     |
| 5.10         | -1.0        | 27.3     |
| 5.33         | -1.1        | 27.2     |
| 5.47         | -1.1        | 27.3     |
| 5.48         | -1.1        | 27.3     |
| 5.53         | -1.1        | 27.3     |
| 5.54         | -1.1        | 27.3     |
| 5.54         | -1.1        | 27.3     |
| 5.55         | -1.1        | 27.3     |
| 5.56         | -1.1        | 27.4     |
| 5.57         | -1.1        | 27.4     |
| 5.57         | -1.1        | 27.4     |
| 5.57         | -1.1        | 27.4     |
| 5.57         | -1.0        | 27.4     |
| 5.57         | -1.0        | 27.4     |
| 5.57         | -1.0        | 27.4     |
| 5.58         | -1.0        | 27.4     |
| 5.58         | -1.0        | 27.4     |
| 5.59         | -1.0        | 27.4     |
| 5.59         | -1.0        | 27.4     |
| 5.58         | -1.0        | 27.5     |
| 5.59         | -1.0        | 27.5     |
| 5.59         | -1.0        | 27.4     |
| 5.59         | -1.0        | 27.3     |
| 5.60         | -1.0        | 27.3     |
| 5.66         | -1.1        | 27.3     |
| 5.96         | -1.1        | 27.3     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 24-Apr-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 5.98         | -1.1        | 27.3     |
| 5.97         | -1.1        | 27.3     |
| 5.96         | -1.1        | 27.3     |
| 5.98         | -1.1        | 27.3     |
| 5.98         | -1.1        | 27.3     |
| 5.99         | -1.1        | 27.3     |
| 6.00         | -1.1        | 27.4     |
| 6.02         | -1.1        | 27.3     |
| 6.02         | -1.1        | 27.4     |
| 6.04         | -1.1        | 27.4     |
| 6.05         | -1.1        | 27.4     |
| 6.06         | -1.1        | 27.4     |
| 6.07         | -1.1        | 27.4     |
| 6.08         | -1.1        | 27.4     |
| 6.07         | -1.1        | 27.3     |
| 6.10         | -1.1        | 27.3     |
| 6.10         | -1.1        | 27.3     |
| 6.24         | -1.1        | 27.3     |
| 6.08         | -1.1        | 27.3     |
| 6.09         | -1.1        | 27.3     |
| 6.09         | -1.1        | 27.3     |
| 6.09         | -1.1        | 27.4     |
| 6.10         | -1.1        | 27.4     |
| 6.10         | -1.1        | 27.4     |
| 6.10         | -1.1        | 27.4     |
| 6.11         | -1.1        | 27.4     |
| 6.12         | -1.1        | 27.4     |
| 6.11         | -1.1        | 27.4     |
| 6.12         | -1.1        | 27.4     |
| 6.13         | -1.1        | 27.4     |
| 6.14         | -1.1        | 27.4     |
| 6.13         | -1.1        | 27.4     |
| 6.13         | -1.0        | 27.4     |
| 6.12         | -1.0        | 27.4     |
| 6.14         | -1.1        | 27.4     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 20-Jul-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.02         | 10.4        | 3.8      |
| 0.10         | 10.4        | 3.8      |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 20-Jul-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.10         | 10.4        | 3.8      |
| 0.20         | 10.4        | 3.8      |
| 0.30         | 10.3        | 3.8      |
| 0.32         | 10.3        | 3.8      |
| 0.40         | 10.3        | 3.9      |
| 0.45         | 10.2        | 3.9      |
| 0.47         | 10.3        | 3.9      |
| 0.45         | 10.3        | 3.9      |
| 0.50         | 10.1        | 4.0      |
| 0.53         | 10.0        | 4.0      |
| 0.55         | 10.0        | 4.0      |
| 0.55         | 10.0        | 4.1      |
| 0.55         | 10.1        | 4.0      |
| 0.64         | 10.1        | 4.1      |
| 0.61         | 10.1        | 4.2      |
| 0.67         | 10.0        | 4.7      |
| 0.72         | 9.7         | 6.0      |
| 0.72         | 9.4         | 6.8      |
| 0.74         | 9.4         | 7.3      |
| 0.81         | 9.2         | 7.9      |
| 0.83         | 9.0         | 8.0      |
| 0.87         | 8.9         | 8.1      |
| 0.90         | 8.8         | 8.2      |
| 0.90         | 8.9         | 8.2      |
| 0.93         | 8.8         | 8.3      |
| 0.96         | 8.7         | 8.4      |
| 1.00         | 8.7         | 8.5      |
| 1.00         | 8.7         | 8.5      |
| 1.03         | 8.6         | 8.5      |
| 1.06         | 8.6         | 8.5      |
| 1.09         | 8.6         | 8.5      |
| 1.12         | 8.6         | 8.6      |
| 1.16         | 8.6         | 8.6      |
| 1.18         | 8.6         | 8.6      |
| 1.19         | 8.6         | 8.6      |
| 1.23         | 8.6         | 8.6      |
| 1.26         | 8.6         | 8.7      |
| 1.27         | 8.6         | 8.7      |
| 1.30         | 8.6         | 8.7      |
| 1.34         | 8.6         | 8.7      |
| 1.36         | 8.6         | 8.7      |
| 1.38         | 8.6         | 8.7      |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 20-Jul-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 1.41         | 8.6         | 8.8      |
| 1.45         | 8.6         | 8.8      |
| 1.48         | 8.5         | 8.8      |
| 1.50         | 8.5         | 8.8      |
| 1.54         | 8.5         | 8.8      |
| 1.59         | 8.5         | 8.8      |
| 1.65         | 8.5         | 8.8      |
| 1.69         | 8.5         | 8.9      |
| 1.71         | 8.5         | 8.9      |
| 1.69         | 8.5         | 8.9      |
| 1.72         | 8.5         | 8.9      |
| 1.76         | 8.5         | 8.9      |
| 1.82         | 8.5         | 8.9      |
| 1.86         | 8.5         | 8.9      |
| 1.91         | 8.5         | 8.9      |
| 1.99         | 8.5         | 8.9      |
| 2.05         | 8.5         | 8.9      |
| 2.07         | 8.5         | 8.9      |
| 2.13         | 8.5         | 8.9      |
| 2.19         | 8.5         | 8.9      |
| 2.20         | 8.5         | 8.9      |
| 2.21         | 8.5         | 8.9      |
| 2.25         | 8.5         | 8.9      |
| 2.30         | 8.5         | 8.9      |
| 2.36         | 8.5         | 8.9      |
| 2.37         | 8.5         | 8.9      |
| 2.42         | 8.5         | 8.9      |
| 2.47         | 8.4         | 9.0      |
| 2.53         | 8.4         | 9.0      |
| 2.57         | 8.4         | 9.0      |
| 2.62         | 8.4         | 9.1      |
| 2.68         | 8.4         | 9.1      |
| 2.72         | 8.3         | 9.1      |
| 2.75         | 8.3         | 9.2      |
| 2.77         | 8.3         | 9.2      |
| 2.82         | 8.3         | 9.2      |
| 2.85         | 8.3         | 9.2      |
| 2.91         | 8.3         | 9.2      |
| 2.91         | 8.3         | 9.2      |
| 3.01         | 8.3         | 9.2      |
| 3.05         | 8.3         | 9.2      |
| 3.09         | 8.3         | 9.3      |
| 3.12         | 8.2         | 9.5      |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 20-Jul-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 3.17         | 8.1         | 9.8      |
| 3.22         | 7.9         | 10.0     |
| 3.23         | 7.9         | 10.1     |
| 3.29         | 7.8         | 10.3     |
| 3.36         | 7.8         | 10.5     |
| 3.42         | 7.6         | 10.7     |
| 3.45         | 7.6         | 11.0     |
| 3.47         | 7.2         | 11.3     |
| 3.54         | 6.9         | 11.9     |
| 3.57         | 6.5         | 12.7     |
| 3.60         | 6.2         | 13.0     |
| 3.62         | 6.1         | 13.3     |
| 3.66         | 5.9         | 13.7     |
| 3.70         | 5.7         | 14.0     |
| 3.74         | 5.4         | 14.6     |
| 3.77         | 5.3         | 14.9     |
| 3.79         | 5.1         | 15.3     |
| 3.84         | 5.0         | 15.5     |
| 3.87         | 4.8         | 15.8     |
| 3.89         | 4.7         | 16.0     |
| 3.88         | 4.7         | 16.1     |
| 3.94         | 4.6         | 16.6     |
| 4.00         | 4.3         | 18.4     |
| 4.08         | 2.5         | 22.0     |
| 4.10         | 2.1         | 22.4     |
| 4.17         | 1.6         | 22.8     |
| 4.22         | 1.1         | 23.1     |
| 4.29         | 0.9         | 23.3     |
| 4.35         | 0.9         | 23.2     |
| 4.39         | 0.8         | 23.3     |
| 4.45         | 0.8         | 23.3     |
| 4.52         | 0.8         | 23.3     |
| 4.54         | 0.8         | 23.3     |
| 4.60         | 0.8         | 23.3     |
| 4.65         | 0.8         | 23.4     |
| 4.74         | 0.8         | 23.3     |
| 4.77         | 0.9         | 23.4     |
| 4.84         | 0.9         | 23.3     |
| 4.89         | 0.9         | 23.3     |
| 5.01         | 0.8         | 23.3     |
| 5.04         | 0.8         | 23.4     |
| 5.11         | 0.8         | 23.4     |
| 5.18         | 0.8         | 23.4     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 20-Jul-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 5.24         | 0.8         | 23.4     |
| 5.30         | 0.8         | 23.5     |
| 5.35         | 0.8         | 23.5     |
| 5.38         | 0.8         | 23.4     |
| 5.42         | 0.8         | 23.4     |
| 5.45         | 0.8         | 23.5     |
| 5.49         | 0.8         | 23.5     |
| 5.57         | 0.8         | 23.5     |
| 5.61         | 0.8         | 23.5     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Aug-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.02         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.0     |
| 0.00         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.1     |
| 0.01         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.0     |
| 0.01         | 7.1         | 18.0     |
| 0.05         | 7.1         | 18.0     |
| 0.15         | 7.1         | 18.0     |
| 0.18         | 7.1         | 18.0     |
| 0.21         | 7.1         | 18.0     |
| 0.19         | 7.1         | 18.0     |
| 0.18         | 7.1         | 18.0     |
| 0.17         | 7.1         | 18.0     |
| 0.18         | 7.1         | 18.0     |
| 0.18         | 7.1         | 18.0     |
| 0.39         | 7.1         | 18.0     |
| 0.39         | 7.1         | 18.0     |
| 0.41         | 7.1         | 18.0     |
| 0.41         | 7.1         | 18.0     |
| 0.41         | 7.1         | 18.0     |
| 0.57         | 7.1         | 18.0     |
| 0.60         | 7.1         | 18.0     |
| 0.60         | 7.1         | 18.0     |
| 0.60         | 7.1         | 18.0     |

## Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Aug-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.62         | 7.1         | 18.0     |
| 0.78         | 7.1         | 18.0     |
| 0.77         | 7.1         | 18.0     |
| 0.77         | 7.1         | 18.0     |
| 0.78         | 7.1         | 18.1     |
| 0.87         | 7.1         | 18.1     |
| 0.98         | 7.2         | 18.1     |
| 0.98         | 7.2         | 18.2     |
| 0.98         | 7.2         | 18.2     |
| 1.01         | 7.2         | 18.2     |
| 1.18         | 7.2         | 18.4     |
| 1.18         | 7.2         | 18.4     |
| 1.19         | 7.2         | 18.4     |
| 1.20         | 7.2         | 18.5     |
| 1.35         | 7.2         | 18.5     |
| 1.34         | 7.2         | 18.5     |
| 1.34         | 7.3         | 18.5     |
| 1.34         | 7.3         | 18.5     |
| 1.42         | 7.3         | 18.5     |
| 1.48         | 7.3         | 18.5     |
| 1.47         | 7.3         | 18.5     |
| 1.48         | 7.3         | 18.5     |
| 1.47         | 7.3         | 18.5     |
| 1.49         | 7.3         | 18.5     |
| 1.63         | 7.2         | 18.5     |
| 1.63         | 7.2         | 18.5     |
| 1.62         | 7.2         | 18.5     |
| 1.61         | 7.2         | 18.5     |
| 1.61         | 7.2         | 18.5     |
| 1.80         | 7.2         | 18.5     |
| 1.84         | 7.2         | 18.5     |
| 1.84         | 7.3         | 18.5     |
| 1.84         | 7.2         | 18.5     |
| 1.84         | 7.2         | 18.5     |
| 2.03         | 7.2         | 18.5     |
| 2.03         | 7.2         | 18.5     |
| 2.03         | 7.2         | 18.5     |
| 2.03         | 7.2         | 18.6     |
| 2.06         | 7.2         | 18.6     |
| 2.26         | 7.2         | 18.5     |
| 2.28         | 7.2         | 18.5     |
| 2.27         | 7.2         | 18.5     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Aug-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 2.27         | 7.2         | 18.6     |
| 2.28         | 7.2         | 18.6     |
| 2.45         | 7.3         | 18.5     |
| 2.44         | 7.3         | 18.6     |
| 2.43         | 7.3         | 18.6     |
| 2.42         | 7.3         | 18.6     |
| 2.43         | 7.2         | 18.6     |
| 2.43         | 7.2         | 18.6     |
| 2.61         | 7.3         | 18.5     |
| 2.62         | 7.3         | 18.6     |
| 2.62         | 7.3         | 18.6     |
| 2.63         | 7.3         | 18.6     |
| 2.63         | 7.3         | 18.6     |
| 2.63         | 7.3         | 18.6     |
| 2.74         | 7.2         | 18.6     |
| 2.77         | 7.3         | 18.6     |
| 2.77         | 7.3         | 18.6     |
| 2.77         | 7.3         | 18.6     |
| 2.77         | 7.3         | 18.6     |
| 2.78         | 7.3         | 18.6     |
| 2.91         | 7.3         | 18.6     |
| 2.89         | 7.3         | 18.6     |
| 2.90         | 7.3         | 18.6     |
| 2.91         | 7.3         | 18.6     |
| 3.02         | 7.3         | 18.6     |
| 3.02         | 7.3         | 18.6     |
| 3.03         | 7.3         | 18.6     |
| 3.03         | 7.3         | 18.6     |
| 3.15         | 7.3         | 18.6     |
| 3.21         | 7.3         | 18.6     |
| 3.20         | 7.3         | 18.6     |
| 3.21         | 7.3         | 18.6     |
| 3.21         | 7.3         | 18.6     |
| 3.30         | 7.3         | 18.6     |
| 3.43         | 7.3         | 18.6     |
| 3.43         | 7.3         | 18.6     |
| 3.43         | 7.3         | 18.6     |
| 3.43         | 7.3         | 18.6     |
| 3.59         | 7.3         | 18.6     |
| 3.65         | 7.3         | 18.6     |
| 3.66         | 7.3         | 18.6     |
| 3.66         | 7.3         | 18.6     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Aug-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 3.66         | 7.3         | 18.6     |
| 3.81         | 7.3         | 18.6     |
| 3.83         | 7.3         | 18.6     |
| 3.83         | 7.2         | 18.7     |
| 3.84         | 7.3         | 18.7     |
| 3.86         | 7.3         | 18.7     |
| 3.99         | 6.8         | 19.6     |
| 4.00         | 6.4         | 19.9     |
| 4.00         | 6.4         | 19.9     |
| 3.98         | 6.5         | 19.9     |
| 4.07         | 6.5         | 19.8     |
| 4.08         | 6.4         | 20.0     |
| 4.07         | 6.4         | 19.9     |
| 4.04         | 6.5         | 19.8     |
| 4.03         | 6.5         | 19.8     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Sep-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.08         | 2.1         | 21.1     |
| 0.11         | 2.1         | 21.1     |
| 0.18         | 2.1         | 21.2     |
| 0.20         | 2.2         | 21.3     |
| 0.24         | 2.4         | 21.3     |
| 0.31         | 2.4         | 21.2     |
| 0.37         | 2.5         | 21.2     |
| 0.43         | 2.5         | 21.2     |
| 0.47         | 2.5         | 21.2     |
| 0.49         | 2.5         | 21.2     |
| 0.57         | 2.5         | 21.2     |
| 0.61         | 2.5         | 21.2     |
| 0.61         | 2.5         | 21.2     |
| 0.63         | 2.5         | 21.2     |
| 0.65         | 2.5         | 21.2     |
| 0.69         | 2.5         | 21.2     |
| 0.71         | 2.5         | 21.2     |
| 0.73         | 2.5         | 21.2     |
| 0.77         | 2.5         | 21.2     |
| 0.77         | 2.5         | 21.2     |
| 0.80         | 2.5         | 21.2     |

# Annex A.2-2. Temperature and Salinity Profiles, Marine Sites, Doris North Project, 2014

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Sep-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 0.83         | 2.5         | 21.2     |
| 0.85         | 2.5         | 21.2     |
| 0.87         | 2.5         | 21.2     |
| 0.89         | 2.5         | 21.2     |
| 0.91         | 2.5         | 21.2     |
| 0.93         | 2.5         | 21.2     |
| 0.90         | 2.5         | 21.2     |
| 0.94         | 2.5         | 21.2     |
| 0.97         | 2.5         | 21.2     |
| 0.99         | 2.5         | 21.2     |
| 1.00         | 2.5         | 21.2     |
| 1.00         | 2.5         | 21.2     |
| 1.03         | 2.5         | 21.2     |
| 1.05         | 2.5         | 21.2     |
| 1.10         | 2.5         | 21.2     |
| 1.13         | 2.5         | 21.2     |
| 1.15         | 2.5         | 21.2     |
| 1.17         | 2.5         | 21.2     |
| 1.18         | 2.5         | 21.2     |
| 1.20         | 2.5         | 21.2     |
| 1.21         | 2.5         | 21.2     |
| 1.25         | 2.5         | 21.2     |
| 1.28         | 2.5         | 21.2     |
| 1.29         | 2.5         | 21.2     |
| 1.31         | 2.5         | 21.2     |
| 1.33         | 2.5         | 21.2     |
| 1.35         | 2.5         | 21.2     |
| 1.37         | 2.5         | 21.2     |
| 1.39         | 2.5         | 21.2     |
| 1.45         | 2.5         | 21.2     |
| 1.52         | 2.5         | 21.2     |
| 1.56         | 2.5         | 21.2     |
| 1.58         | 2.5         | 21.2     |
| 1.61         | 2.5         | 21.2     |
| 1.61         | 2.5         | 21.2     |
| 1.67         | 2.5         | 21.2     |
| 1.70         | 2.5         | 21.2     |
| 1.70         | 2.5         | 21.2     |
| 1.73         | 2.5         | 21.2     |
| 1.73         | 2.5         | 21.2     |
| 1.77         | 2.5         | 21.2     |
| 1.79         | 2.5         | 21.2     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Sep-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 1.80         | 2.4         | 21.2     |
| 1.86         | 2.4         | 21.2     |
| 1.86         | 2.4         | 21.2     |
| 1.91         | 2.4         | 21.2     |
| 1.95         | 2.4         | 21.2     |
| 1.95         | 2.4         | 21.2     |
| 1.94         | 2.4         | 21.2     |
| 2.01         | 2.4         | 21.2     |
| 2.06         | 2.4         | 21.2     |
| 2.06         | 2.4         | 21.2     |
| 2.08         | 2.4         | 21.2     |
| 2.16         | 2.4         | 21.2     |
| 2.16         | 2.4         | 21.2     |
| 2.20         | 2.4         | 21.2     |
| 2.21         | 2.4         | 21.2     |
| 2.25         | 2.4         | 21.2     |
| 2.25         | 2.4         | 21.2     |
| 2.32         | 2.4         | 21.2     |
| 2.34         | 2.4         | 21.2     |
| 2.38         | 2.4         | 21.2     |
| 2.40         | 2.4         | 21.2     |
| 2.41         | 2.4         | 21.2     |
| 2.48         | 2.4         | 21.2     |
| 2.48         | 2.4         | 21.2     |
| 2.53         | 2.4         | 21.2     |
| 2.56         | 2.4         | 21.2     |
| 2.58         | 2.4         | 21.2     |
| 2.58         | 2.4         | 21.2     |
| 2.63         | 2.4         | 21.2     |
| 2.67         | 2.4         | 21.2     |
| 2.70         | 2.4         | 21.2     |
| 2.73         | 2.4         | 21.3     |
| 2.75         | 2.4         | 21.2     |
| 2.77         | 2.4         | 21.2     |
| 2.78         | 2.4         | 21.2     |
| 2.81         | 2.4         | 21.2     |
| 2.82         | 2.4         | 21.2     |
| 2.86         | 2.4         | 21.3     |
| 2.88         | 2.5         | 21.3     |
| 2.90         | 2.5         | 21.2     |
| 2.90         | 2.5         | 21.2     |
| 2.94         | 2.5         | 21.2     |
| 2.99         | 2.5         | 21.2     |

| REF-Marine 1 |             |          |
|--------------|-------------|----------|
| 21-Sep-14    |             |          |
| Depth        | Temperature |          |
| (m)          | (°C)        | Salinity |
| 3.01         | 2.5         | 21.2     |
| 3.03         | 2.5         | 21.2     |
| 3.04         | 2.5         | 21.2     |
| 3.08         | 2.5         | 21.3     |
| 3.12         | 2.5         | 21.3     |
| 3.10         | 2.5         | 21.2     |
| 3.12         | 2.5         | 21.3     |
| 3.16         | 2.5         | 21.3     |
| 3.19         | 2.5         | 21.2     |
| 3.23         | 2.5         | 21.2     |
| 3.26         | 2.5         | 21.2     |
| 3.30         | 2.5         | 21.2     |
| 3.32         | 2.5         | 21.2     |
| 3.35         | 2.5         | 21.2     |
| 3.40         | 2.5         | 21.2     |
| 3.40         | 2.5         | 21.2     |
| 3.47         | 2.5         | 21.2     |
| 3.52         | 2.5         | 21.2     |
| 3.54         | 2.5         | 21.2     |
| 3.59         | 2.5         | 21.3     |
| 3.63         | 2.5         | 21.2     |
| 3.68         | 2.5         | 21.2     |
| 3.76         | 2.5         | 21.2     |
| 3.79         | 2.5         | 21.2     |
| 3.84         | 2.5         | 21.2     |
| 3.84         | 2.5         | 21.1     |
| 3.86         | 2.5         | 19.9     |
| 3.90         | 2.6         | 20.3     |

Annex A.2-3. Dissolved Oxygen Profiles, Marine Sites, Doris North Project, 2014

| RBW          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 20-Apr-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 2.0          | 10.12                         | 82.5                                     |
| 2.5          | 10.07                         | 81.8                                     |
| 3.0          | 10.20                         | 81.6                                     |
| 3.5          | 10.02                         | 81.5                                     |

| RBW          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Jul-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 9.59                          | 104.8                                    |
| 0.5          | 9.62                          | 103.8                                    |
| 1.0          | 10.08                         | 106.1                                    |
| 1.5          | 9.95                          | 101.5                                    |
| 2.0          | 10.37                         | 101.2                                    |
| 2.5          | 10.46                         | 101.6                                    |
| 3.0          | 10.51                         | 101.5                                    |
| 3.5          | 10.35                         | 99.2                                     |
| 4.0          | 10.26                         | 97.0                                     |

| RBW          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 13-Aug-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 9.80                          | 102.5                                    |
| 0.5          | 9.82                          | 102.4                                    |
| 1.0          | 9.82                          | 102.4                                    |
| 1.5          | 9.90                          | 103.2                                    |
| 2.0          | 9.80                          | 102.1                                    |
| 2.5          | 9.77                          | 101.7                                    |
| 3.0          | 9.76                          | 101.6                                    |
| 3.5          | 9.76                          | 101.6                                    |
| 4.0          | 9.86                          | 102.1                                    |
| 4.5          | 9.89                          | 102.5                                    |

| RBW          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Sep-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 11.44                         | 100.5                                    |
| 0.5          | 11.45                         | 100.7                                    |
| 1.0          | 11.47                         | 100.8                                    |
| 1.5          | 11.48                         | 100.9                                    |
| 2.0          | 11.49                         | 101.0                                    |
| 2.5          | 11.50                         | 101.1                                    |
| 3.0          | 11.48                         | 100.9                                    |
| 3.5          | 11.49                         | 101.3                                    |
| 4.0          | 11.70                         | 104.2                                    |

| RBE          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 23-Apr-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 2.0          | 10.17                         | 82.4                                     |
| 2.5          | 10.04                         | 81.6                                     |
| 3.0          | 9.98                          | 81.1                                     |

| RBE          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Jul-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 9.83                          | 101.0                                    |
| 0.5          | 9.84                          | 101.3                                    |

| RBE          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 20-Aug-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 9.74                          | 98.7                                     |
| 0.5          | 9.66                          | 98.4                                     |

| RBE          |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Sep-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 11.68                         | 102.2                                    |
| 0.5          | 11.64                         | 102.6                                    |

| REF-Marine 1 |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 24-Apr-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 2.0          | 9.80                          | 82.3                                     |
| 2.5          | 9.87                          | 81.3                                     |
| 3.0          | 9.86                          | 80.8                                     |
| 3.5          | 9.82                          | 80.4                                     |
| 4.0          | 9.81                          | 80.2                                     |
| 4.5          | 9.79                          | 80.0                                     |
| 5.0          | 9.83                          | 80.1                                     |

| REF-Marine 1 |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 20-Jul-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 9.74                          | 103.1                                    |
| 0.5          | 9.77                          | 103.1                                    |
| 1.0          | 9.74                          | 99.5                                     |
| 1.5          | 9.69                          | 99.1                                     |
| 2.0          | 9.57                          | 97.5                                     |
| 2.5          | 9.46                          | 96.1                                     |
| 3.0          | 9.54                          | 96.6                                     |
| 3.5          | 9.50                          | 96.0                                     |
| 4.0          | 9.64                          | 95.2                                     |
| 4.5          | 10.27                         | 97.3                                     |
| 5.0          | 11.14                         | 95.3                                     |
| 5.5          | 11.33                         | 95.6                                     |

| REF-Marine 1 |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Aug-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 10.30                         | 101.8                                    |
| 0.5          | 10.36                         | 102.1                                    |
| 1.0          | 10.39                         | 102.9                                    |
| 1.5          | 10.36                         | 102.6                                    |
| 2.0          | 10.31                         | 102.2                                    |
| 2.5          | 10.31                         | 102.2                                    |
| 3.0          | 10.31                         | 102.2                                    |
| 3.5          | 10.30                         | 102.8                                    |
| 4.0          | 12.97                         | 116.3                                    |

| REF-Marine 1 |                               |                                          |
|--------------|-------------------------------|------------------------------------------|
| 21-Sep-14    |                               |                                          |
| Depth<br>(m) | Dissolved<br>Oxygen<br>(mg/L) | Dissolved<br>Oxygen<br>Saturation<br>(%) |
| 0.0          | 11.36                         | 99.9                                     |
| 0.5          | 11.32                         | 100.0                                    |
| 1.0          | 11.31                         | 99.9                                     |
| 1.5          | 11.30                         | 99.9                                     |
| 2.0          | 11.30                         | 99.8                                     |
| 2.5          | 11.28                         | 99.8                                     |
| 3.0          | 11.28                         | 99.7                                     |
| 3.5          | 11.28                         | 99.7                                     |
| 4.0          | 11.28                         | 99.9                                     |

### **A.3 2014 WATER QUALITY**

The following sections present the water quality data collected from April to September 2014 from stream, lake, and marine sites, as well as the QA/QC water quality data. Only the variables that were subjected to an evaluation of effects (see main body of the report) are shown graphically. All water quality variables were screened against CCME water quality guidelines for the protection of aquatic life (CCME 2014a). CCME guidelines are included in all graphs, tables, and annexes.

#### **A.3.1 Stream Data**

Stream water quality data were collected monthly from June to September 2014. Figures A.3-1 to A.3-9 show monthly trends of select water quality variables. Annex A.3-1 presents the full 2014 stream water quality dataset.

#### **A.3.2 Lake Data**

Lake water quality data were collected in April (under-ice sampling) and monthly from July to September 2014. Figures A.3-10 to A.3-18 show seasonal trends for select water quality variables. Annex A.3-2 presents the full 2014 lake water quality dataset.

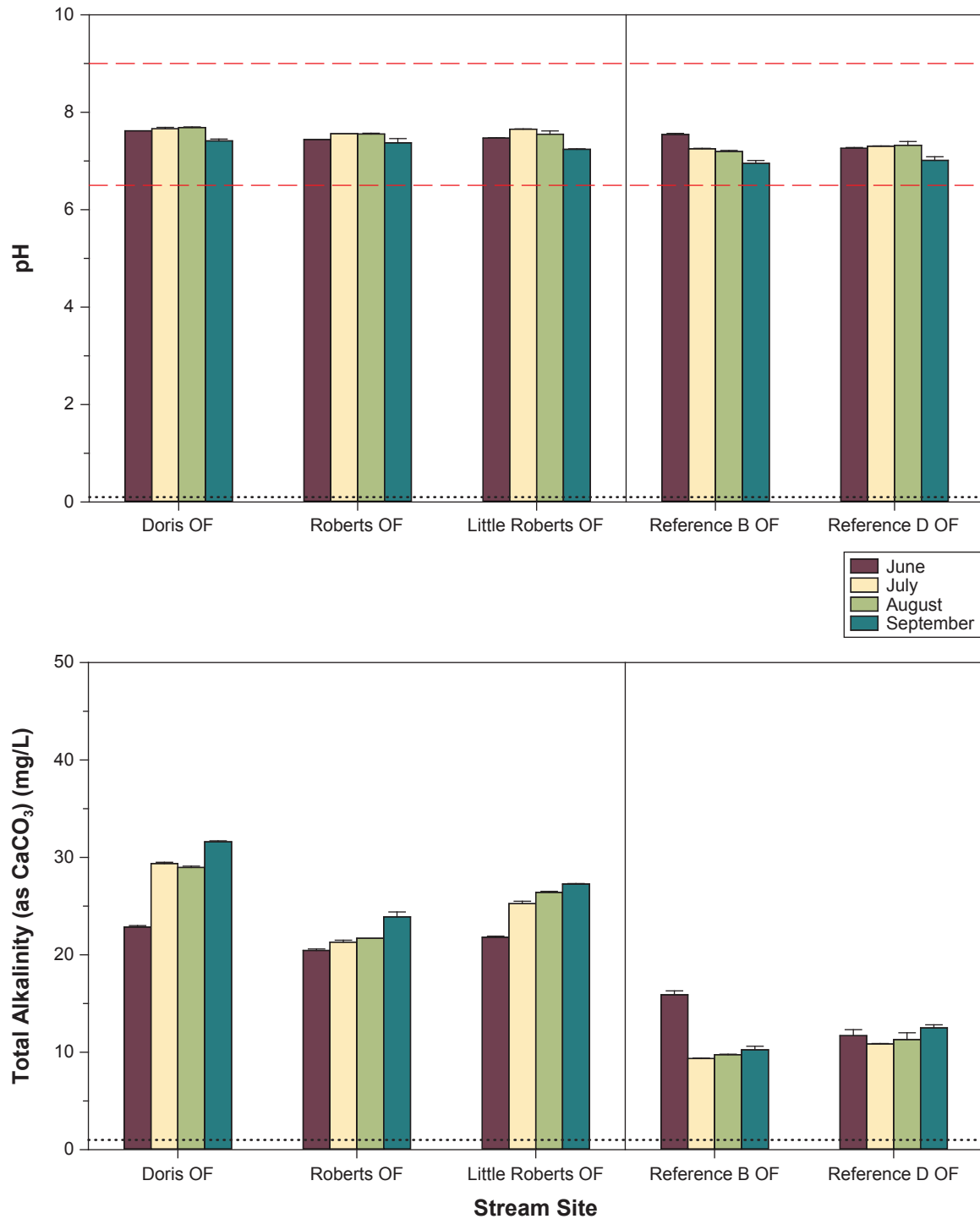
#### **A.3.3 Marine Data**

Marine water quality data were collected in April (under-ice sampling) and monthly from July to September 2014. Figures A.3-19 to A.3-27 show seasonal trends for select water quality variables. Annex A.3-3 presents the full 2014 marine water quality dataset.

#### **A.3.4 Quality Assurance/Quality Control (QA/QC) Data**

Annex A.3-4 presents the results of the QA/QC blank data (equipment, field, and travel blanks) collected to identify possible sources of contamination to water quality samples. A subset of blanks contained values above detection limits for select nutrients and metals; however, there was no obvious contamination of water quality samples that can be attributed to sampling equipment, sample collection, or sample transportation.

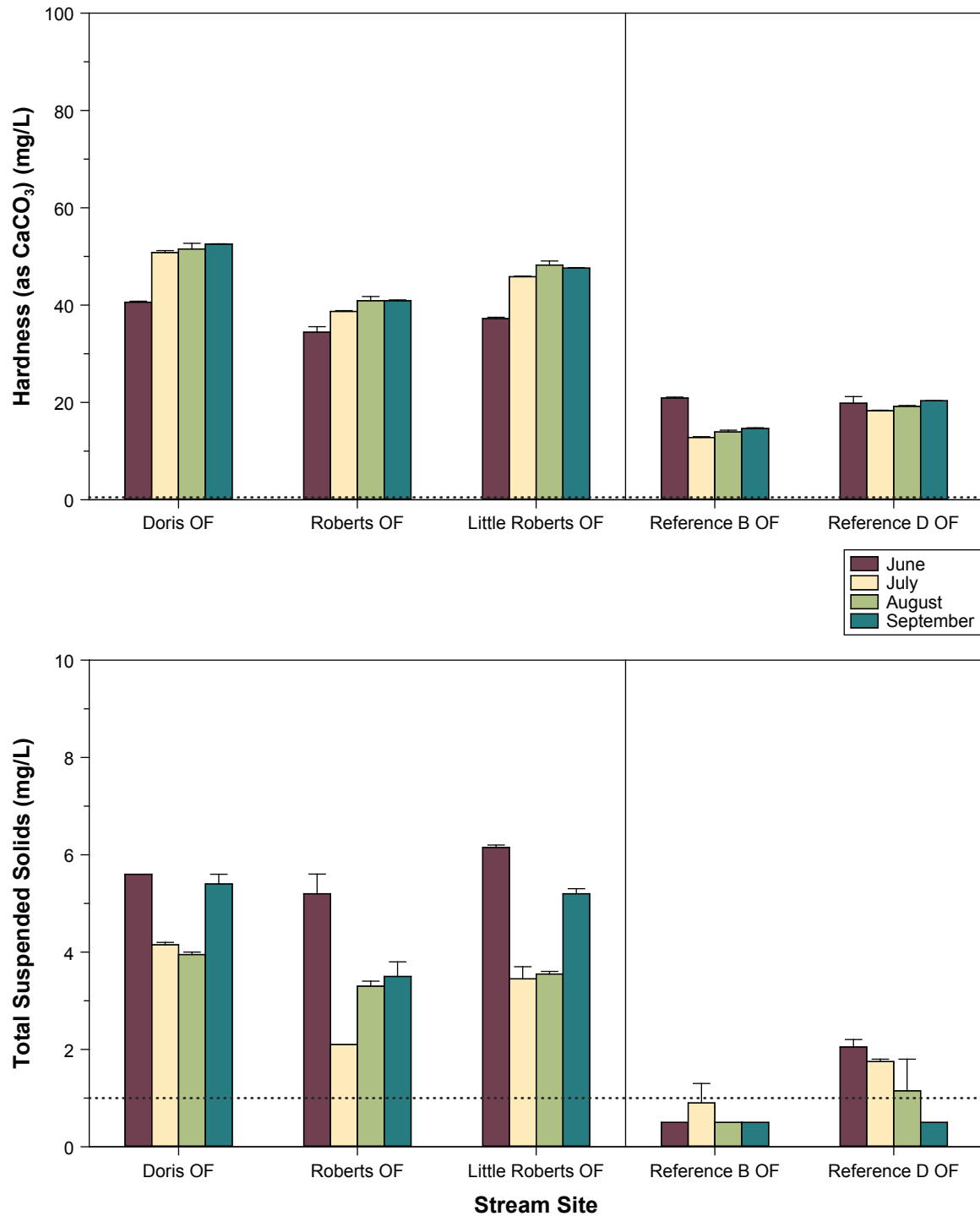
**Figure A.3-1**  
**pH and Total Alkalinity in**  
**Stream Sites, Doris North Project, 2014**



Notes: Error bars represent the standard error of the mean of replicates.  
 Black dotted lines represent the analytical detection limits.  
 Red dashed lines represent the CCME freshwater guideline pH range (6.5–9.0).  
 pH is a required parameter for water quality monitoring as per Schedule 5, s. 7(1)(c) of the MMER.  
 Total alkalinity is a required parameter for effluent characterization and water quality monitoring as per Schedule 5, s. 4(1) and s. 7(1)(c) of the MMER.

Figure A.3-2

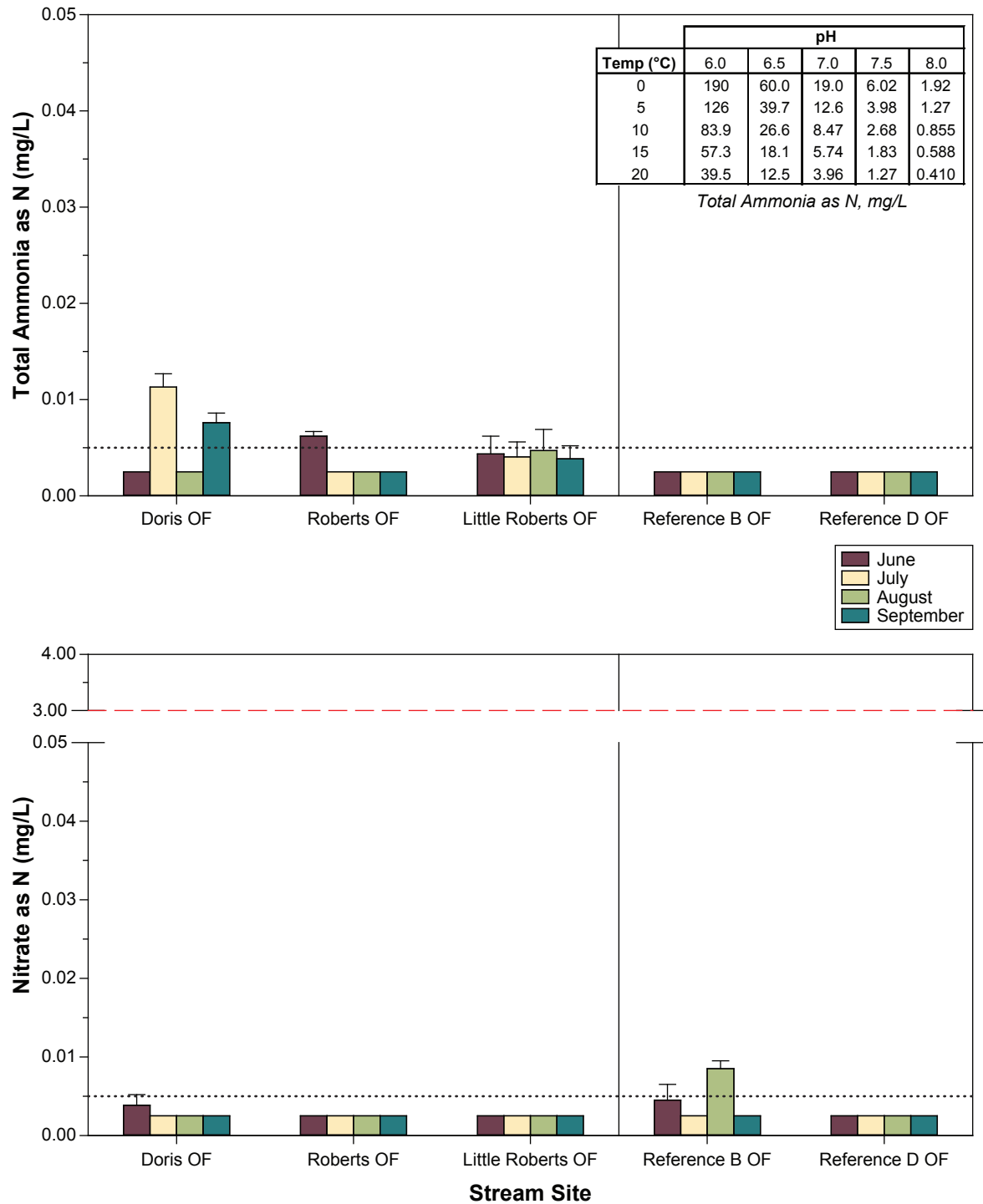
# Hardness and Total Suspended Solids in Stream Sites, Doris North Project, 2014



Notes: Error bars represent the standard error of the mean of replicates.  
 Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.  
 The CCME freshwater guideline for total suspended solids is dependent upon background levels.  
 Hardness is a required parameter for effluent characterization and water quality monitoring as per Schedule 5, s. 4(1) and s. 7(1)(c) of the MMER.  
 Total suspended solids are regulated as deleterious substances in effluents as per Schedule 4 of the MMER.

Figure A.3-3

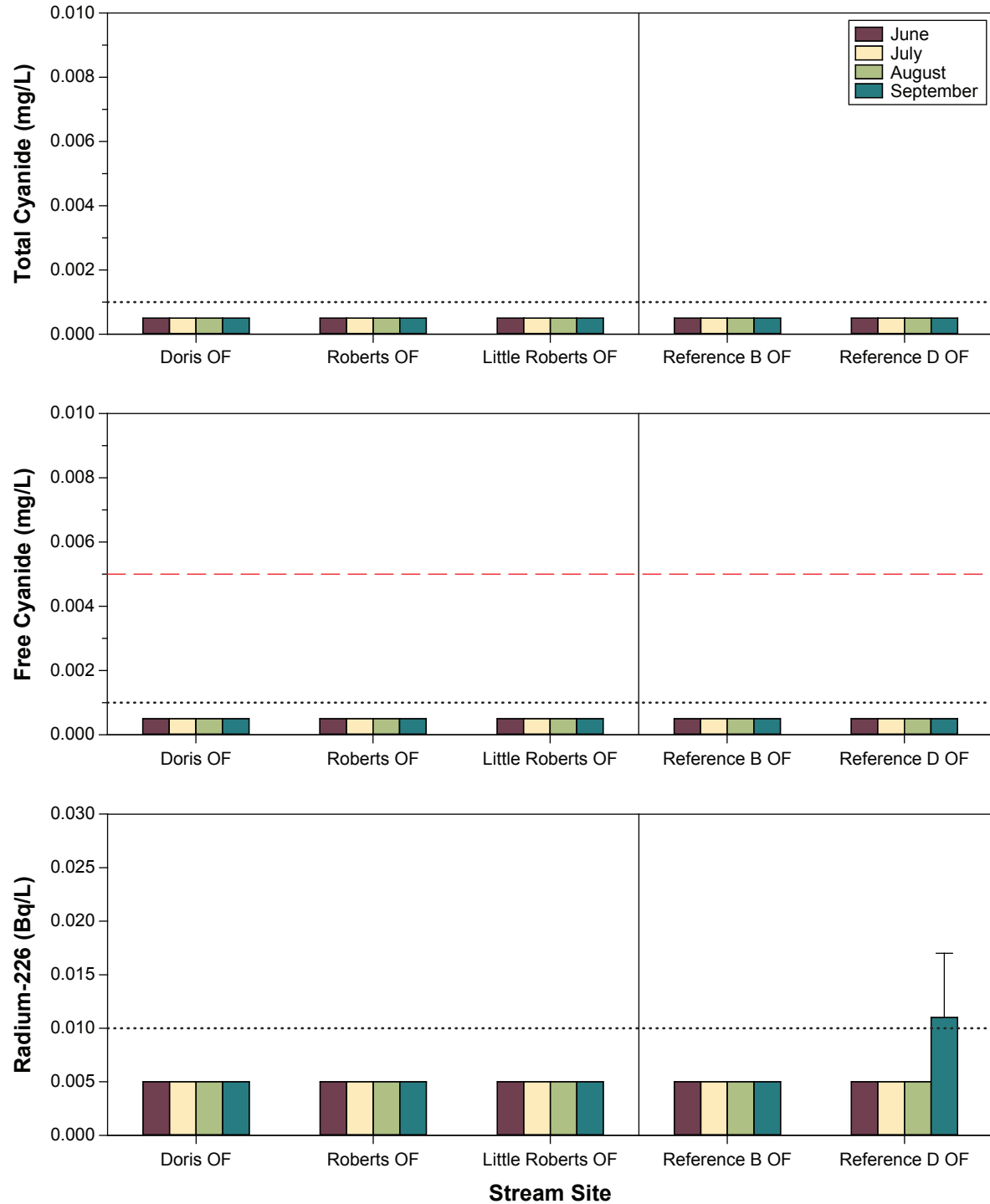
**Total Ammonia and Nitrate Concentrations  
in Stream Sites, Doris North Project, 2014**



Notes: Error bars represent the standard error of the mean of replicates.  
 Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.  
 Inset table shows the pH- and temperature-dependent CCME freshwater guideline for total ammonia.  
 Red dashed line represents the CCME freshwater guideline for nitrate as N (3.0 mg/L; long-term concentration).  
 Total ammonia and nitrate are required parameters for effluent characterization as per Schedule 5, s. 4(1) of the MMER.

Figure A.3-4

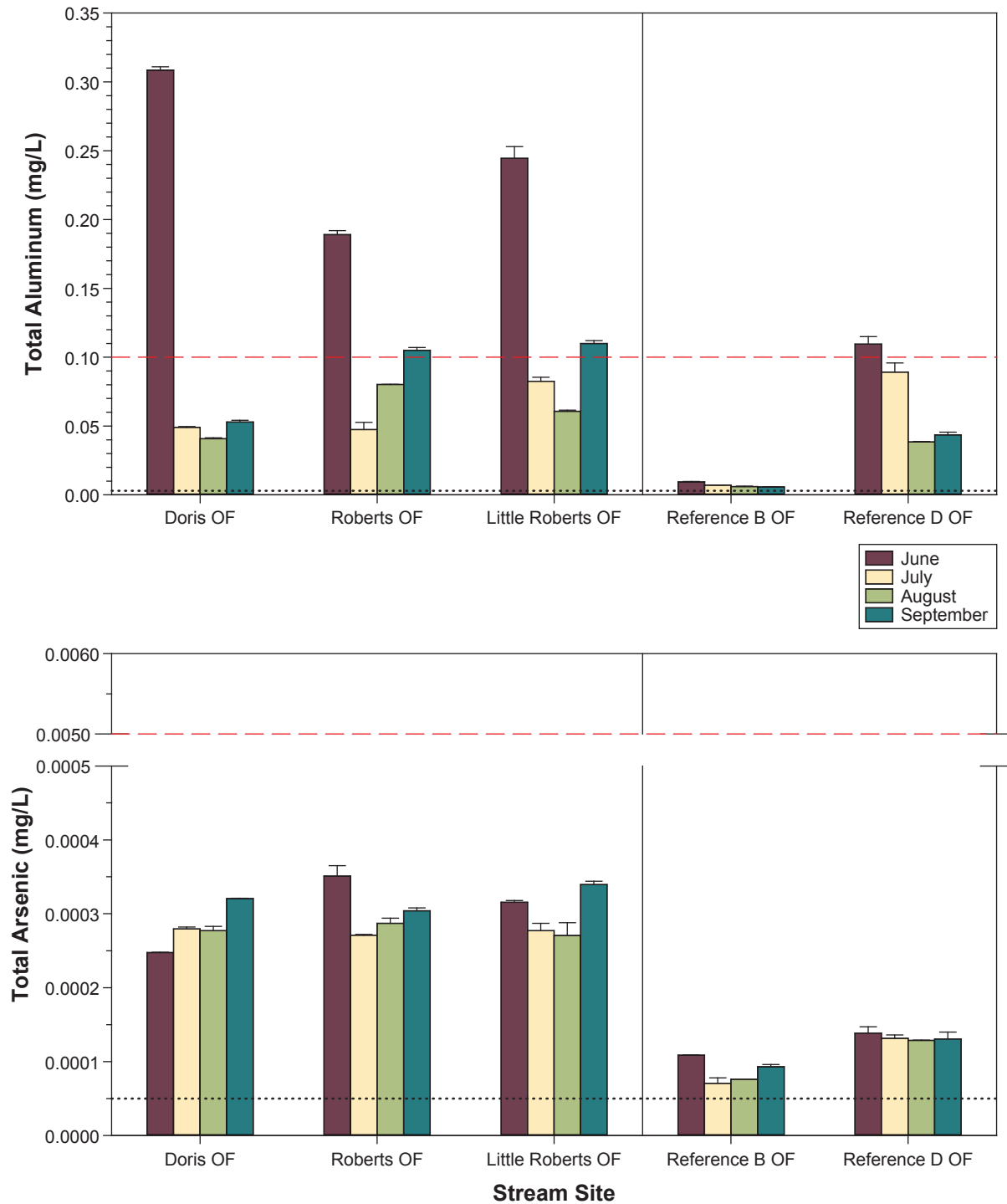
Total Cyanide, Free Cyanide, and Radium-226  
Concentrations in Stream Sites, Doris North Project, 2014



Notes: Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.  
All total cyanide, free cyanide, and radium-226 concentrations in stream samples were below the detection limit.  
Red dashed line represents the CCME freshwater guideline for free cyanide (0.005 mg/L).  
Total cyanide and radium-226 are regulated as deleterious substances in effluents as per Schedule 4 of the MMER.

Figure A.3-5

**Total Aluminum and Total Arsenic Concentrations  
in Stream Sites, Doris North Project, 2014**



Notes: Error bars represent the standard error of the mean of replicates.

Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.

Red dashed lines represent the pH-dependent CCME freshwater guideline for aluminum (0.005 mg/L at pH < 6.5; 0.1 mg/L at pH ≥ 6.5) and the CCME freshwater guideline for arsenic (0.005 mg/L).

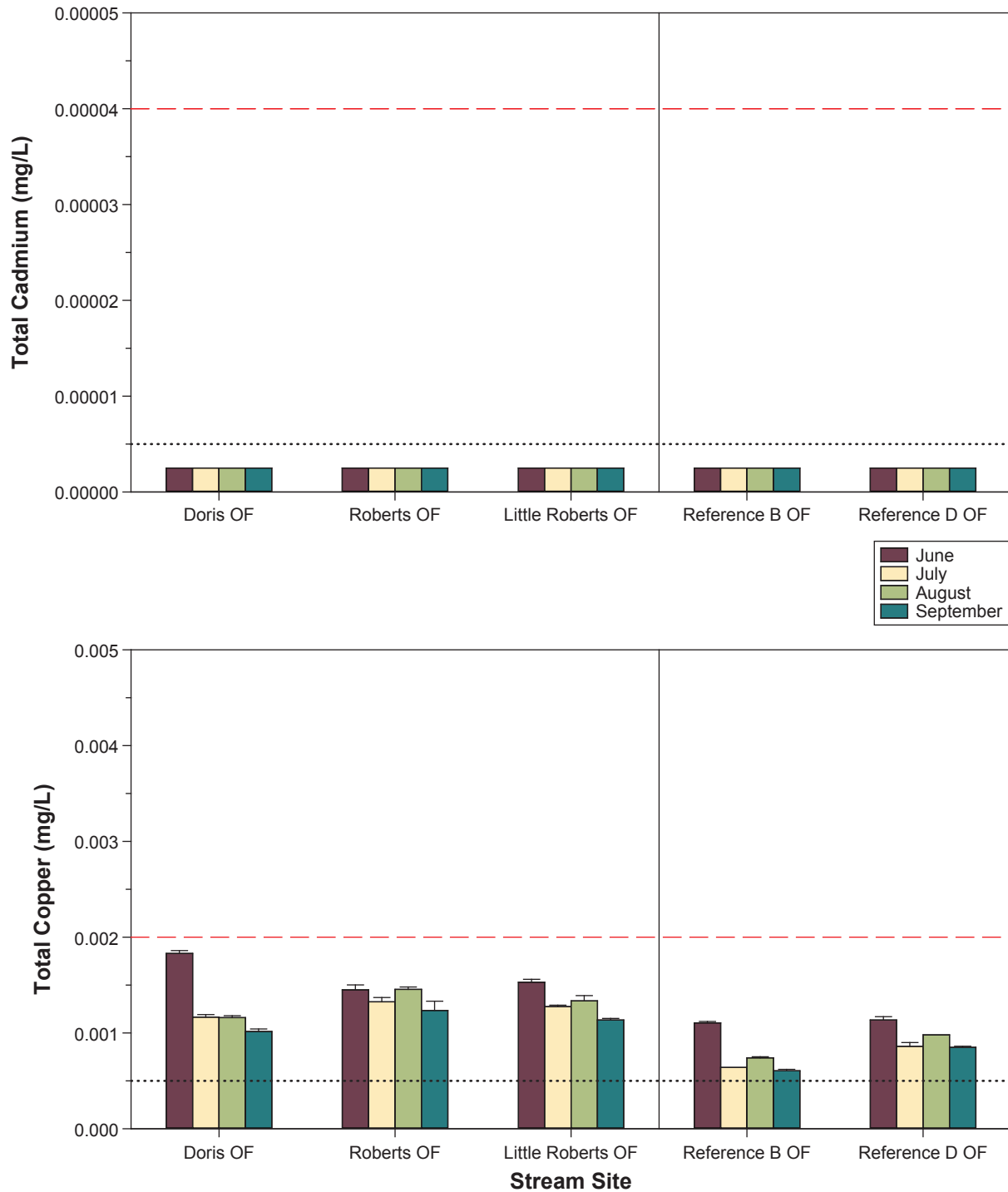
pH was greater than 6.5 in all stream samples.

Total aluminum is a required parameter for effluent characterization as per Schedule 5, s. 4(1) of the MMER.

Total arsenic is regulated as a deleterious substance in effluents as per Schedule 4 of the MMER.

Figure A.3-6

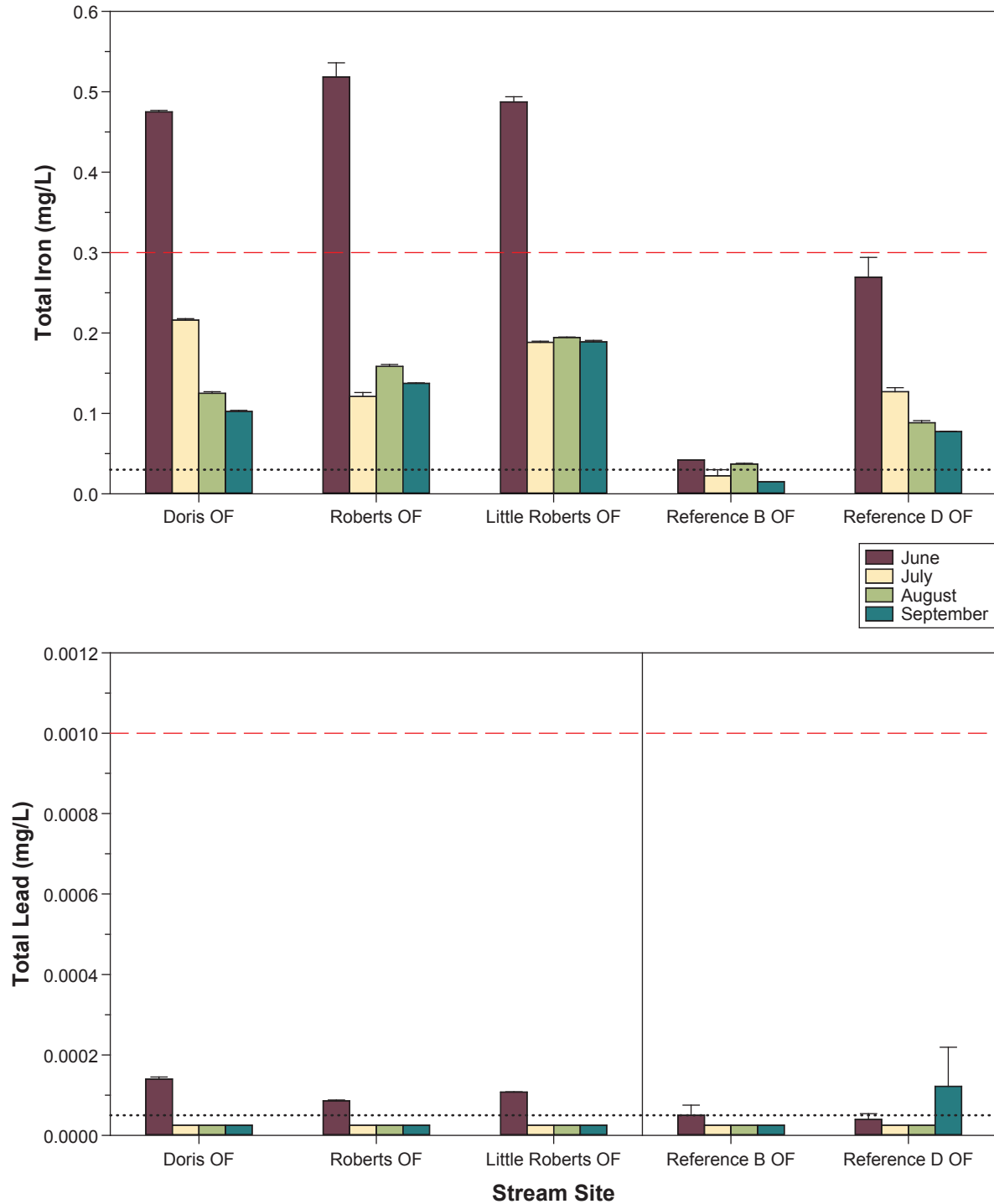
**Total Cadmium and Total Copper Concentrations  
in Stream Sites, Doris North Project, 2014**



Notes: Error bars represent the standard error of the mean of replicates.  
 Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.  
 The CCME freshwater guidelines for cadmium and copper are hardness dependent.  
 Red dashed lines represent the minimum long-term site-specific CCME freshwater guidelines for cadmium (0.00004 mg/L) and for copper (0.002 mg/L) based on the hardness (as CaCO<sub>3</sub>) range in streams of 12.6 to 52.7 mg/L.  
 Mean total cadmium and total copper concentrations were always lower than applicable CCME guidelines.  
 Total cadmium is a required parameter for effluent characterization as per Schedule 5, s. 4(1) of the MMER.  
 Total copper is regulated as a deleterious substance in effluents as per Schedule 4 of the MMER.

Figure A.3-7

**Total Iron and Total Lead Concentrations  
in Stream Sites, Doris North Project, 2014**



Notes: Error bars represent the standard error of the mean of replicates  
 Black dotted lines represent the analytical detection limits; values below the detection limit are plotted at half the applicable detection limit.  
 The CCME freshwater guideline for lead is hardness dependent.  
 Red dashed lines represent the CCME freshwater guideline for iron (0.3 mg/L) and the site-specific CCME freshwater guideline for lead (0.001 mg/L) based on the hardness (as CaCO<sub>3</sub>) range in streams of 12.6 to 52.7 mg/L.  
 Total iron is a required parameter for effluent characterization as per Schedule 5, s. 4(1) of the MMER.  
 Total lead is regulated as a deleterious substance in effluents as per Schedule 4 of the MMER.