



# **POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT**

## **POINT LOMA WASTEWATER TREATMENT PLANT**

NPDES Permit No. CA0107409  
SDRWQCB Order No. R9-2017-0007

## **JANUARY 2018**

Environmental Monitoring and Technical Services  
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**Public Utilities Department**

Environmental Monitoring & Technical Services Division

February 28, 2018

Mr. David W. Gibson, Executive Officer  
California Regional Water Quality Control Board  
San Diego Region  
2375 Northside Drive, Suite 100  
San Diego, CA 92108

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the January 2018 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the Point Loma outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Peter S. Vroom, Ph.D.  
Deputy Director, Public Utilities Department

TS/asb

cc: U.S. Environmental Protection Agency, Region 9



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## INTRODUCTION

Monthly reports of water quality and ocean conditions for the San Diego coastal region surrounding the Point Loma Ocean Outfall are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2017-0007, NPDES Permit No. CA0107409 for the Point Loma Wastewater Treatment Plant (PLWTP), Point Loma Ocean Outfall (PLOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the PLWTP are presented in separate reports.

## MATERIALS AND METHODS

### ***Shore Stations***

Water quality conditions are monitored at eight shore stations (D4, D5, D7–D12). These stations range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). Due to site inaccessibility, station D8 has been temporarily abandoned and replaced with station D8-A. This new location will be sampled until access is restored at the original location. Seawater samples are collected from the surf zone at each station five times during the month. These samples are subsequently transported to the City's Marine Microbiology Laboratory and analyzed for the presence of several types of fecal indicator bacteria (FIBs), including total coliforms, fecal coliforms, and *Enterococcus*. Visual observations of water color and clarity, surf height, human or animal activity, and weather conditions are also recorded at the time of sample collection. Wind speed and direction are measured using a hand-held anemometer with a compass.

### ***Kelp Bed Stations***

The eight kelp stations are sampled four times during the month according to permit specifications in order to monitor water quality conditions within the Point Loma kelp forest. These stations include three sites located along the inshore edge of the kelp bed paralleling the 9-m depth contour (i.e., stations C4, C5 and C6), and five sites located near the offshore edge of the kelp bed along the 18-m depth contour (i.e., stations A1, A6, A7, C7 and C8).

Routine weekly monitoring at each of the kelp bed sites consists primarily of collecting seawater samples at discrete depths to determine concentrations of indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Additional samples for ammonium analysis are collected at these same sites and depths on a quarterly basis in order to correspond to sampling at the offshore stations located within State waters that is typically scheduled during the months of February, May, August and November. Water column profiles of various physical/chemical parameters are also generated during each sampling event, and visual observations of weather and water conditions are recorded at each station.

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for ammonium and bacteriological analyses are then drawn from these bottles into sterile sample bottles for processing at the City's Toxicology Laboratory (ammonium) and Marine Microbiology Laboratory (bacteria), respectively. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data

at a rate of  $\geq$  4 scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. The CTD data are presented in both graphical and tabular form. Additionally, data for depths closest to those where bacteriological samples are collected are extracted from the CTD profiles and presented with the bacteriological data.

### ***Offshore Stations***

Offshore water quality sampling is conducted quarterly typically during the months of February, May, August and November. A total of 36 offshore stations (F01–F36) are sampled during each survey usually over a 3-day period. Three of the stations (F01–F03) are located along the 18-m depth contour, while 11 stations are located along each of the following contours: 60 m (stations F04–F14); 80 m (stations F15–F25); 98 m (stations F26–F36). Of these 36 stations, 15 (F01–F03, F06–F14, F18–F20) are located within State jurisdictional waters (i.e., within 3 nautical miles of shore) and are subject to the California Ocean Plan's compliance standards.

Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomorphic dissolved organic matter (CDOM), and visual observations of weather and water conditions.

Seawater samples for bacteriological analyses at the offshore stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Profiles of the various physical/chemical parameters (listed above) are taken using a Sea-Bird CTD. The CTD profile data are then presented in both graphical and tabular form. Additionally, data for depths closest to those at which bacteriological samples are collected are extracted from the CTD profiles and presented with the bacteriological data.

### ***Bacteriological Reporting and Quality Assurance***

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)<sup>[1]</sup>. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

Results of the bacteriological analysis of seawater samples collected from each of the shore, kelp bed, and offshore stations located within State waters are assessed relative to the geometric mean and single sample maximum water-contact standards specified in the California Ocean Plan. The seven standards are defined as follows:

**30-day Geometric Mean:** The following standards are based on the geometric mean of the five most recent samples from each site.

- (1) Total coliform density shall not exceed 1000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 200 CFU/100 mL;

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<sup>[1]</sup>Bordner, R., J. Winter, and P. Scarpino (eds.). (1978). Microbiological Methods for Monitoring the Environment: Water and Wastes, EPA Research and Development, EPA-600/8-78-017. 337 p.

(3) *Enterococcus* density shall not exceed 35 CFU/100 mL.

Single Sample Maximums:

- (1) Total coliform density shall not exceed 10,000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 400 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 104 CFU/100 mL;
- (4) Total coliform density shall not exceed 1,000 CFU/100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated exactly the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2018 Quality Assurance Report, which will be completed in March 2019.

## SUMMARY OF RESULTS

### *Shore Stations*

- During January, four of the eight shore stations were out of compliance with various California Ocean Plan (Ocean Plan) water-contact standards.
  - o The 30-day geometric mean standard for *Enterococcus* was exceeded at station D11 on one or more days during the month.
  - o The single sample maximum (SSM) standard for total coliform bacteria was exceeded at stations D9, D10, and D11 on multiple days during the month.
  - o The SSM standard for fecal coliform bacteria was exceeded at stations D8-A, D9, D10 and D11 on one or more days during the month.
  - o The SSM standard for *Enterococcus* was exceeded at stations D9, D10, and D11 on one or more days during the month.
  - o The SSM standard that states total coliform densities shall not exceed 1000 CFU/100 mL when the fecal:total ratio exceeds 0.1 was exceeded at station D8-A and D11 on one or more days during the month.
- Per permit requirements, resamples were collected in response to these SSM exceedances (see Table 2.8 for details).
- Over the years, elevated bacteria levels at shore and kelp bed stations have tended to be associated with rainfall events, heavy recreational use, or the presence of seabirds or decaying kelp and surfgrass. See the City of San Diego's most recent *Point Loma Ocean Outfall Annual Receiving Waters Monitoring and Assessment Report* for details (<http://www.sandiego.gov/mwwd/environment/oceanmonitor/reports/index.shtml>).

Notable visual observations for January included: a sewage-like odor at station D9.

#### ***Kelp Bed Stations***

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled five times during the month (i.e. January 3, 11 16, 22, 29).
- During January, all of the kelp bed stations were in compliance with various water-contact standards specified in the Ocean Plan.
- Water column temperatures ranged from 12.06 to 16.56°C during the month. The difference between surface and bottom waters ranged from 0.04 to 2.49°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.33 to 2.29 µg/L during January, suggesting the presence of phytoplankton during the month.
- There were no notable visual observations for January.

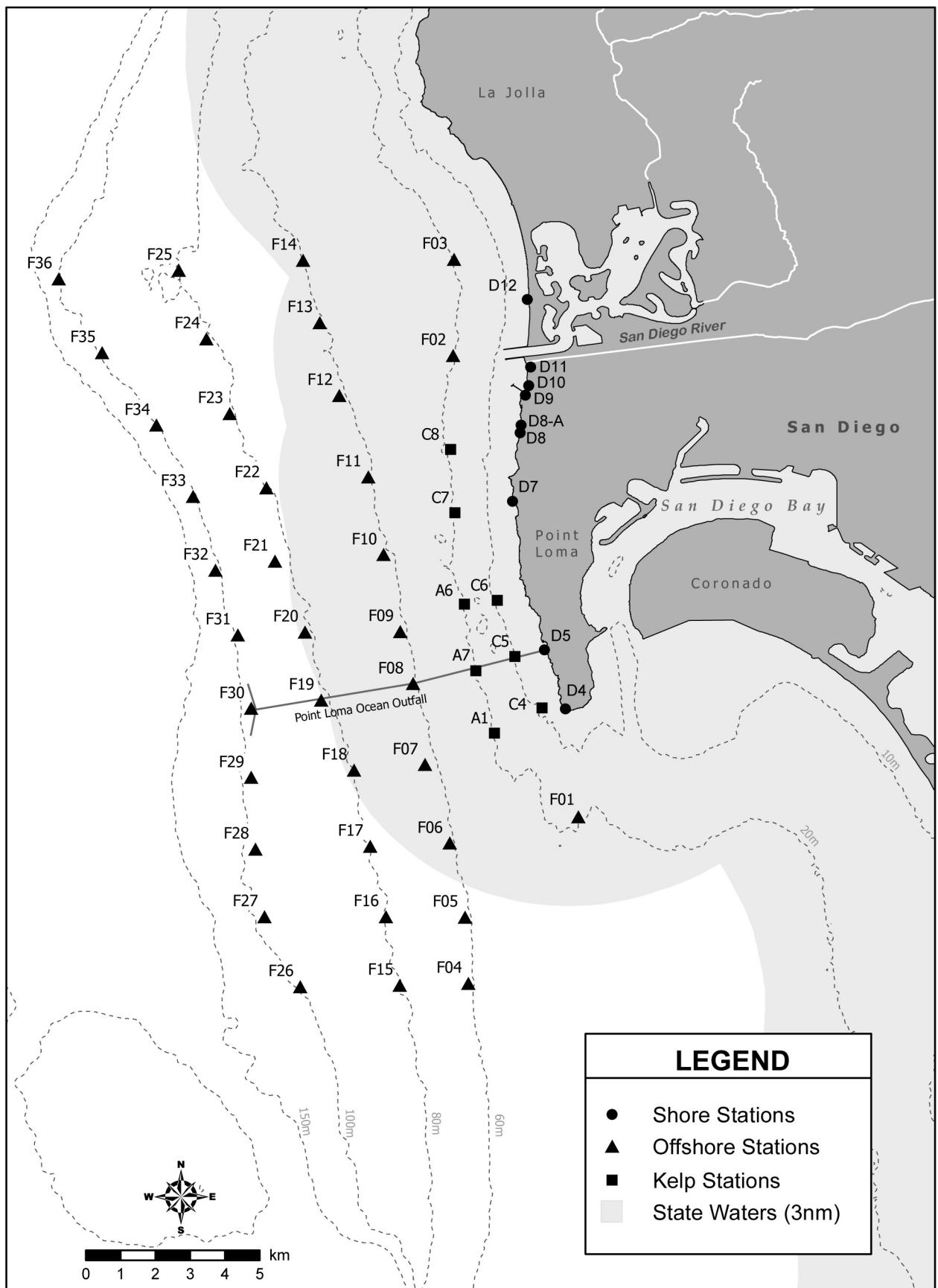
#### ***Offshore Stations***

- Quarterly sampling was not conducted during January at the offshore stations. The next quarterly sampling is scheduled for February 2018.



## TABLES AND FIGURES





## **Figure 1.1 Station Map**



# Shore Stations



**Table 2.1**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >1,000 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
01 Jan 2018	6*	20*	7*	50*	8*	20*	8*	6*
02 Jan 2018	6*	20*	7*	50*	8*	20*	8*	6*
03 Jan 2018	6	20	11	42	19	20	9	6
04 Jan 2018	6	20	11	42	19	20	9	6
05 Jan 2018	5*	20*	14*	50*	23*	20*	11*	7*
06 Jan 2018	5*	20*	14*	50*	23*	20*	11*	7*
07 Jan 2018	5*	20*	14*	50*	23*	20*	11*	7*
08 Jan 2018	5*	20*	14*	50*	23*	20*	11*	7*
09 Jan 2018	5*	20*	14*	50*	23*	20*	11*	7*
10 Jan 2018	10	32	15	66	85	76	46	19
11 Jan 2018	10	32	15	66	85	76	46	19
12 Jan 2018	8*	36*	14*	50*	203	178	130	19*
13 Jan 2018	8*	36*	14*	50*	203	178	130	19*
14 Jan 2018	8*	36*	14*	50*	203	178	130	19*
15 Jan 2018	8*	36*	14*	50*	203	178	130	19*
16 Jan 2018	8*	36*	14*	50*	203	178	130	19*
17 Jan 2018	10	32	15	55	138	149	114	19
18 Jan 2018	10	32	15	55	138	149	114	19
19 Jan 2018	15*	36*	15*	50*	203	222	256	29*
20 Jan 2018	15*	36*	15*	50*	203	222	256	29*
21 Jan 2018	15*	36*	15*	50*	203	222	256	29*
22 Jan 2018	15*	36*	15*	50*	203	222	256	29*
23 Jan 2018	15*	36*	15*	50*	203	222	256	29*
24 Jan 2018	10	20	12	30	113	101	226	22
25 Jan 2018	10	20	12	30	113	101	226	22
26 Jan 2018	15*	20*	19*	34*	253	140	367	40*
27 Jan 2018	15*	20*	19*	34*	253	140	367	40*
28 Jan 2018	15*	20*	19*	34*	253	140	367	40*
29 Jan 2018	15*	20*	19*	34*	253	140	367	40*
30 Jan 2018	15*	20*	19*	34*	253	140	367	40*
31 Jan 2018	16	21	20	80	166	101	271	25

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.2**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >200 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
01 Jan 2018	2*	4*	3*	3*	3*	2*	2*	2*
02 Jan 2018	2*	4*	3*	3*	3*	2*	2*	2*
03 Jan 2018	3	3	3	5	5	3	2	2
04 Jan 2018	3	3	3	5	5	3	2	2
05 Jan 2018	3*	4*	3*	6*	6*	4*	2*	2*
06 Jan 2018	3*	4*	3*	6*	6*	4*	2*	2*
07 Jan 2018	3*	4*	3*	6*	6*	4*	2*	2*
08 Jan 2018	3*	4*	3*	6*	6*	4*	2*	2*
09 Jan 2018	3*	4*	3*	6*	6*	4*	2*	2*
10 Jan 2018	2	3	3	6	17	11	11	3
11 Jan 2018	2	3	3	6	17	11	11	3
12 Jan 2018	3*	4*	3*	7*	31	20	26	4*
13 Jan 2018	3*	4*	3*	7*	31	20	26	4*
14 Jan 2018	3*	4*	3*	7*	31	20	26	4*
15 Jan 2018	3*	4*	3*	7*	31	20	26	4*
16 Jan 2018	3*	4*	3*	7*	31	20	26	4*
17 Jan 2018	2	3	3	7	24	18	19	3
18 Jan 2018	2	3	3	7	24	18	19	3
19 Jan 2018	3*	2*	2*	6*	31	27	30	4*
20 Jan 2018	3*	2*	2*	6*	31	27	30	4*
21 Jan 2018	3*	2*	2*	6*	31	27	30	4*
22 Jan 2018	3*	2*	2*	6*	31	27	30	4*
23 Jan 2018	3*	2*	2*	6*	31	27	30	4*
24 Jan 2018	2	2	2	5	22	18	26	3
25 Jan 2018	2	2	2	5	22	18	26	3
26 Jan 2018	3*	2*	2*	6*	36	27	44	4*
27 Jan 2018	3*	2*	2*	6*	36	27	44	4*
28 Jan 2018	3*	2*	2*	6*	36	27	44	4*
29 Jan 2018	3*	2*	2*	6*	36	27	44	4*
30 Jan 2018	3*	2*	2*	6*	36	27	44	4*
31 Jan 2018	2	2	3	18	22	20	42	4

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.3**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >35 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
01 Jan 2018	2*	2*	2*	5*	3*	2*	5*	2*
02 Jan 2018	2*	2*	2*	5*	3*	2*	5*	2*
03 Jan 2018	3	2	2	8	8	4	5	2
04 Jan 2018	3	2	2	8	7	4	5	2
05 Jan 2018	3*	2*	2*	11*	8	4*	6*	2*
06 Jan 2018	3*	2*	2*	11*	8	4*	6*	2*
07 Jan 2018	3*	2*	2*	11*	8	4*	6*	2*
08 Jan 2018	3*	2*	2*	11*	8	4*	6*	2*
09 Jan 2018	3*	2*	2*	11*	8	4*	6*	2*
10 Jan 2018	3	2	3	11	18	12	29	4
11 Jan 2018	3	2	3	11	18	12	29	4
12 Jan 2018	3*	2*	3*	15*	22	15	54	5*
13 Jan 2018	3*	2*	3*	15*	22	15	54	5*
14 Jan 2018	3*	2*	3*	15*	22	15	54	5*
15 Jan 2018	3*	2*	3*	15*	22	15	54	5*
16 Jan 2018	3*	2*	3*	15*	22	15	54	5*
17 Jan 2018	4	2	3	17	20	17	53	6
18 Jan 2018	4	2	3	17	20	17	53	6
19 Jan 2018	4*	2*	4*	14*	26	26	74	8*
20 Jan 2018	4*	2*	4*	14*	26	26	74	8*
21 Jan 2018	4*	2*	4*	14*	26	26	74	8*
22 Jan 2018	4*	2*	4*	14*	26	26	74	8*
23 Jan 2018	4*	2*	4*	14*	26	26	74	8*
24 Jan 2018	4	2	3	12	18	19	64	6
25 Jan 2018	4	2	3	12	18	19	64	6
26 Jan 2018	4*	2*	4*	18*	21	30	87	8*
27 Jan 2018	4*	2*	4*	18*	21	30	87	8*
28 Jan 2018	4*	2*	4*	18*	21	30	87	8*
29 Jan 2018	4*	2*	4*	18*	21	30	87	8*
30 Jan 2018	4*	2*	4*	18*	21	30	87	8*
31 Jan 2018	4	2	5	21	15	19	105	9

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.4**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
03 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
10 Jan 2018	IC	IC	IC	IC	E	E	E	IC
12 Jan 2018	ns	ns	ns	ns	IC	IC	IC	ns
17 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
24 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
31 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.5**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
03 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
10 Jan 2018	IC	IC	IC	IC	E	E	E	IC
12 Jan 2018	ns	ns	ns	ns	IC	IC	IC	ns
17 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
24 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
31 Jan 2018	IC	IC	IC	E	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.6**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
03 Jan 2018	IC	IC	IC	IC	E	IC	IC	IC
04 Jan 2018	ns	ns	ns	ns	IC	ns	ns	ns
10 Jan 2018	IC	IC	IC	IC	E	E	E	IC
12 Jan 2018	ns	ns	ns	ns	IC	IC	IC	ns
17 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
24 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
31 Jan 2018	IC	IC	IC	IC	IC	IC	E	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.7**

Summary of compliance at the PLOO shore stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	D4	D5	D7	D8-A	D9	D10	D11	D12
03 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
10 Jan 2018	IC	IC	IC	IC	IC	IC	E	IC
12 Jan 2018	ns	ns	ns	ns	IC	IC	IC	ns
17 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
24 Jan 2018	IC	IC	IC	IC	IC	IC	IC	IC
31 Jan 2018	IC	IC	IC	E	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.8**

Summary of water quality parameters at the PLOO shore stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Enter) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D4	03 Jan 2018	800	6e	6e	8e	1.00
	10 Jan 2018	912	<200	<2	2e	0.01
	17 Jan 2018	832	20e	2e	10e	0.10
	24 Jan 2018	753	<2	<2	<2	1.00
	31 Jan 2018	835	20e	2e	2e	0.10
D5	03 Jan 2018	748	20e	<2	2e	0.10
	10 Jan 2018	901	<200	2e	2e	0.01
	17 Jan 2018	813	<20	<2	<2	0.10
	24 Jan 2018	746	2e	2e	<2	1.00
	31 Jan 2018	827	26e	2e	<2	0.08
D7	03 Jan 2018	815	60e	2e	<2	0.03
	10 Jan 2018	947	20e	2e	14e	0.10
	17 Jan 2018	905	20e	4e	4e	0.20
	24 Jan 2018	818	6e	2e	<2	0.33
	31 Jan 2018	856	20e	12e	22e	0.60
D8-A	03 Jan 2018	835	20e	20e	40	1.00
	10 Jan 2018	1000	<200	4e	14e	0.02
	17 Jan 2018	928	80e	6e	34e	0.07
	24 Jan 2018	830	4e	<2	6e	0.50
	31 Jan 2018	908	2600e	1800e	32e	0.69
D9	03 Jan 2018	843	680	68	300e	0.10
	04 Jan 2018	956	ns	ns	2e	ns
	10 Jan 2018	1011	>16000	800	860	0.05
	12 Jan 2018	928	800e	46	6e	0.06
	17 Jan 2018	938	20e	6e	12e	0.30
	24 Jan 2018	844	6e	4e	<2	0.67
	31 Jan 2018	920	20e	<2	2e	0.10
D10	03 Jan 2018	851	20e	30e	38e	1.50
	10 Jan 2018	1024	>16000	580	800	0.04
	12 Jan 2018	936	1400e	52	6e	0.04
	17 Jan 2018	954	60e	8e	32e	0.13
	24 Jan 2018	854	2e	<2	4e	1.00
	31 Jan 2018	931	<20	4e	<2	0.20
D11	03 Jan 2018	900	16e	2e	6e	0.12
	10 Jan 2018	1035	>16000	>12000	>12000	0.75

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enterο</b>	<b>F:T</b>
D11	12 Jan 2018	940	3600e	120	46	0.03
D11	17 Jan 2018	1007	60e	4e	48	0.07
D11	24 Jan 2018	859	120e	14e	32e	0.12
D11	31 Jan 2018	951	60e	36e	260e	0.60
D12	03 Jan 2018	918	12e	2e	<2	0.17
D12	10 Jan 2018	1054	1400e	<20	74	0.01
D12	17 Jan 2018	1042	<20	<2	12e	0.10
D12	24 Jan 2018	926	8e	<2	<2	0.25
D12	31 Jan 2018	1008	4e	4e	18e	1.00

ns = not sampled

ND = no data

**Comments**

Station	Date	Depth	Parameter	Comments
D9	04 Jan 2018			Resample
D9	12 Jan 2018			Resample
D10	12 Jan 2018			Resample
D11	12 Jan 2018			Resample

**Table 2.9**

Summary of visual observations made during the month for each PLOO shore station by sample date.

Station	Date	Parameter	Value
D4	03 Jan 2018	Arrive Time	800
D4	03 Jan 2018	Weather	Foggy
D4	03 Jan 2018	Wind Speed (kts)	4.1
D4	03 Jan 2018	Wind Dir	N
D4	03 Jan 2018	Animal Life	None
D4	03 Jan 2018	Floatables	None
D4	03 Jan 2018	Water Color	Green
D4	03 Jan 2018	Current Direction	N
D4	03 Jan 2018	Water Temp (C)	13.7
D4	03 Jan 2018	Wave Height Low (ft)	2
D4	03 Jan 2018	High Tide (ft)	6.7
D4	03 Jan 2018	High Tide Time	915
D4	03 Jan 2018	Low Tide (ft)	1.5
D4	03 Jan 2018	Low Tide Time	310
D4	03 Jan 2018	Comments	Water clear
D4	10 Jan 2018	Arrive Time	912
D4	10 Jan 2018	Weather	Moderate Rain
D4	10 Jan 2018	Wind Speed (kts)	6
D4	10 Jan 2018	Wind Dir	N
D4	10 Jan 2018	Animal Life	None
D4	10 Jan 2018	Floatables	None
D4	10 Jan 2018	Water Color	Green
D4	10 Jan 2018	Current Direction	N
D4	10 Jan 2018	Water Temp (C)	11.2
D4	10 Jan 2018	Wave Height Low (ft)	2
D4	10 Jan 2018	High Tide (ft)	4.8
D4	10 Jan 2018	High Tide Time	431
D4	10 Jan 2018	Low Tide (ft)	0.9
D4	10 Jan 2018	Low Tide Time	1143
D4	10 Jan 2018	Comments	Algae; Water clear
D4	17 Jan 2018	Arrive Time	832
D4	17 Jan 2018	Weather	Foggy
D4	17 Jan 2018	Wind Speed (kts)	0.7
D4	17 Jan 2018	Wind Dir	N
D4	17 Jan 2018	Animal Life	None
D4	17 Jan 2018	Floatables	None
D4	17 Jan 2018	Water Color	Green
D4	17 Jan 2018	Current Direction	N
D4	17 Jan 2018	Water Temp (C)	13.2
D4	17 Jan 2018	Wave Height Low (ft)	3
D4	17 Jan 2018	High Tide (ft)	5.7
D4	17 Jan 2018	High Tide Time	837
D4	17 Jan 2018	Low Tide (ft)	1.8
D4	17 Jan 2018	Low Tide Time	233
D4	17 Jan 2018	Comments	Seagrass; Water clear
D4	24 Jan 2018	Arrive Time	753
D4	24 Jan 2018	Weather	Sunny
D4	24 Jan 2018	Wind Speed (kts)	5.1

Station	Date	Parameter	Value
D4	24 Jan 2018	Wind Dir	SE
D4	24 Jan 2018	Animal Life	None
D4	24 Jan 2018	Floatables	None
D4	24 Jan 2018	Water Color	Green
D4	24 Jan 2018	Current Direction	SE
D4	24 Jan 2018	Water Temp (C)	13.6
D4	24 Jan 2018	Wave Height Low (ft)	2
D4	24 Jan 2018	High Tide (ft)	4.3
D4	24 Jan 2018	High Tide Time	208
D4	24 Jan 2018	Low Tide (ft)	1.7
D4	24 Jan 2018	Low Tide Time	854
D4	24 Jan 2018	Comments	Water clear
D4	31 Jan 2018	Arrive Time	835
D4	31 Jan 2018	Weather	Sunny
D4	31 Jan 2018	Wind Speed (kts)	7.9
D4	31 Jan 2018	Wind Dir	E
D4	31 Jan 2018	Animal Life	None
D4	31 Jan 2018	Floatables	None
D4	31 Jan 2018	Water Color	Green
D4	31 Jan 2018	Current Direction	N
D4	31 Jan 2018	Water Temp (C)	14.2
D4	31 Jan 2018	Wave Height Low (ft)	4
D4	31 Jan 2018	High Tide (ft)	6.7
D4	31 Jan 2018	High Tide Time	821
D4	31 Jan 2018	Low Tide (ft)	1.1
D4	31 Jan 2018	Low Tide Time	217
D4	31 Jan 2018	Comments	Kelp; Seagrass; Algae; Water clear
D5	03 Jan 2018	Arrive Time	748
D5	03 Jan 2018	Weather	Foggy
D5	03 Jan 2018	Wind Speed (kts)	0
D5	03 Jan 2018	Wind Dir	
D5	03 Jan 2018	Animal Life	None
D5	03 Jan 2018	Floatables	None
D5	03 Jan 2018	Water Color	Green
D5	03 Jan 2018	Current Direction	
D5	03 Jan 2018	Water Temp (C)	13.4
D5	03 Jan 2018	Wave Height Low (ft)	1
D5	03 Jan 2018	High Tide (ft)	6.7
D5	03 Jan 2018	High Tide Time	915
D5	03 Jan 2018	Low Tide (ft)	1.5
D5	03 Jan 2018	Low Tide Time	310
D5	03 Jan 2018	Comments	Kelp; Water clear
D5	10 Jan 2018	Arrive Time	901
D5	10 Jan 2018	Weather	Sunny
D5	10 Jan 2018	Wind Speed (kts)	2.3
D5	10 Jan 2018	Wind Dir	N
D5	10 Jan 2018	Animal Life	None
D5	10 Jan 2018	Floatables	None
D5	10 Jan 2018	Water Color	Green
D5	10 Jan 2018	Current Direction	N
D5	10 Jan 2018	Water Temp (C)	10.9
D5	10 Jan 2018	Wave Height Low (ft)	2

Station	Date	Parameter	Value
D5	10 Jan 2018	High Tide (ft)	4.8
D5	10 Jan 2018	High Tide Time	431
D5	10 Jan 2018	Low Tide (ft)	0.9
D5	10 Jan 2018	Low Tide Time	1143
D5	10 Jan 2018	Comments	Water clear
D5	17 Jan 2018	Arrive Time	813
D5	17 Jan 2018	Weather	Foggy
D5	17 Jan 2018	Wind Speed (kts)	2.7
D5	17 Jan 2018	Wind Dir	N
D5	17 Jan 2018	Animal Life	None
D5	17 Jan 2018	Floatables	None
D5	17 Jan 2018	Water Color	Green
D5	17 Jan 2018	Current Direction	N
D5	17 Jan 2018	Water Temp (C)	12.6
D5	17 Jan 2018	Wave Height Low (ft)	3
D5	17 Jan 2018	High Tide (ft)	5.7
D5	17 Jan 2018	High Tide Time	837
D5	17 Jan 2018	Low Tide (ft)	1.8
D5	17 Jan 2018	Low Tide Time	233
D5	17 Jan 2018	Comments	Kelp; Seagrass; Algae; Water clear
D5	24 Jan 2018	Arrive Time	746
D5	24 Jan 2018	Weather	Sunny
D5	24 Jan 2018	Wind Speed (kts)	1.5
D5	24 Jan 2018	Wind Dir	N
D5	24 Jan 2018	Animal Life	None
D5	24 Jan 2018	Floatables	None
D5	24 Jan 2018	Water Color	Green
D5	24 Jan 2018	Current Direction	N
D5	24 Jan 2018	Water Temp (C)	12.4
D5	24 Jan 2018	Wave Height Low (ft)	1
D5	24 Jan 2018	High Tide (ft)	4.3
D5	24 Jan 2018	High Tide Time	208
D5	24 Jan 2018	Low Tide (ft)	1.7
D5	24 Jan 2018	Low Tide Time	854
D5	24 Jan 2018	Comments	Kelp; Water clear
D5	31 Jan 2018	Arrive Time	827
D5	31 Jan 2018	Weather	Sunny
D5	31 Jan 2018	Wind Speed (kts)	2.6
D5	31 Jan 2018	Wind Dir	W
D5	31 Jan 2018	Animal Life	None
D5	31 Jan 2018	Floatables	None
D5	31 Jan 2018	Water Color	Green
D5	31 Jan 2018	Current Direction	N
D5	31 Jan 2018	Water Temp (C)	12.4
D5	31 Jan 2018	Wave Height Low (ft)	2
D5	31 Jan 2018	High Tide (ft)	6.7
D5	31 Jan 2018	High Tide Time	821
D5	31 Jan 2018	Low Tide (ft)	1.1
D5	31 Jan 2018	Low Tide Time	217
D5	31 Jan 2018	Comments	Kelp; Seagrass; Algae; Water clear
D7	03 Jan 2018	Arrive Time	815

Station	Date	Parameter	Value
D7	03 Jan 2018	Weather	Foggy
D7	03 Jan 2018	Wind Speed (kts)	5.5
D7	03 Jan 2018	Wind Dir	S
D7	03 Jan 2018	Animal Life	None
D7	03 Jan 2018	Floatables	None
D7	03 Jan 2018	Water Color	Green
D7	03 Jan 2018	Current Direction	S
D7	03 Jan 2018	Water Temp (C)	14
D7	03 Jan 2018	Wave Height Low (ft)	2
D7	03 Jan 2018	High Tide (ft)	6.7
D7	03 Jan 2018	High Tide Time	915
D7	03 Jan 2018	Low Tide (ft)	1.5
D7	03 Jan 2018	Low Tide Time	310
D7	03 Jan 2018	Comments	Water clear
D7	10 Jan 2018	Arrive Time	947
D7	10 Jan 2018	Weather	Partly Cloudy
D7	10 Jan 2018	Wind Speed (kts)	1.5
D7	10 Jan 2018	Wind Dir	W
D7	10 Jan 2018	Animal Life	None
D7	10 Jan 2018	Floatables	None
D7	10 Jan 2018	Water Color	Green
D7	10 Jan 2018	Current Direction	W
D7	10 Jan 2018	Water Temp (C)	12.6
D7	10 Jan 2018	Wave Height Low (ft)	3
D7	10 Jan 2018	High Tide (ft)	4.8
D7	10 Jan 2018	High Tide Time	431
D7	10 Jan 2018	Low Tide (ft)	0.9
D7	10 Jan 2018	Low Tide Time	1143
D7	10 Jan 2018	Comments	Algae; Water clear
D7	17 Jan 2018	Arrive Time	905
D7	17 Jan 2018	Weather	Foggy
D7	17 Jan 2018	Wind Speed (kts)	2.1
D7	17 Jan 2018	Wind Dir	NW
D7	17 Jan 2018	Animal Life	None
D7	17 Jan 2018	Floatables	None
D7	17 Jan 2018	Water Color	Green
D7	17 Jan 2018	Current Direction	NW
D7	17 Jan 2018	Water Temp (C)	12.2
D7	17 Jan 2018	Wave Height Low (ft)	3
D7	17 Jan 2018	High Tide (ft)	5.7
D7	17 Jan 2018	High Tide Time	837
D7	17 Jan 2018	Low Tide (ft)	1.8
D7	17 Jan 2018	Low Tide Time	233
D7	17 Jan 2018	Comments	Kelp; Seagrass; 4 Persons; Water clear
D7	24 Jan 2018	Arrive Time	818
D7	24 Jan 2018	Weather	Sunny
D7	24 Jan 2018	Wind Speed (kts)	5.6
D7	24 Jan 2018	Wind Dir	SE
D7	24 Jan 2018	Animal Life	None
D7	24 Jan 2018	Floatables	None
D7	24 Jan 2018	Water Color	Green
D7	24 Jan 2018	Current Direction	SE

Station	Date	Parameter	Value
D7	24 Jan 2018	Water Temp (C)	10.9
D7	24 Jan 2018	Wave Height Low (ft)	2
D7	24 Jan 2018	High Tide (ft)	3
D7	24 Jan 2018	High Tide Time	1417
D7	24 Jan 2018	Low Tide (ft)	1.7
D7	24 Jan 2018	Low Tide Time	854
D7	24 Jan 2018	Comments	Water clear
D7	31 Jan 2018	Arrive Time	856
D7	31 Jan 2018	Weather	Sunny
D7	31 Jan 2018	Wind Speed (kts)	6.6
D7	31 Jan 2018	Wind Dir	E
D7	31 Jan 2018	Animal Life	None
D7	31 Jan 2018	Floatables	None
D7	31 Jan 2018	Water Color	Green
D7	31 Jan 2018	Current Direction	E
D7	31 Jan 2018	Water Temp (C)	14.1
D7	31 Jan 2018	Wave Height Low (ft)	3
D7	31 Jan 2018	High Tide (ft)	6.7
D7	31 Jan 2018	High Tide Time	821
D7	31 Jan 2018	Low Tide (ft)	1.1
D7	31 Jan 2018	Low Tide Time	217
D7	31 Jan 2018	Comments	Kelp; Seagrass; Algae; Water clear
D8-A	03 Jan 2018	Arrive Time	835
D8-A	03 Jan 2018	Weather	Foggy
D8-A	03 Jan 2018	Wind Speed (kts)	4.5
D8-A	03 Jan 2018	Wind Dir	W
D8-A	03 Jan 2018	Animal Life	None
D8-A	03 Jan 2018	Floatables	None
D8-A	03 Jan 2018	Water Color	Green
D8-A	03 Jan 2018	Current Direction	W
D8-A	03 Jan 2018	Water Temp (C)	14.2
D8-A	03 Jan 2018	Wave Height Low (ft)	2
D8-A	03 Jan 2018	High Tide (ft)	6.7
D8-A	03 Jan 2018	High Tide Time	915
D8-A	03 Jan 2018	Low Tide (ft)	1.5
D8-A	03 Jan 2018	Low Tide Time	310
D8-A	03 Jan 2018	Comments	Water clear
D8-A	10 Jan 2018	Arrive Time	1000
D8-A	10 Jan 2018	Weather	Partly Cloudy
D8-A	10 Jan 2018	Wind Speed (kts)	7
D8-A	10 Jan 2018	Wind Dir	NW
D8-A	10 Jan 2018	Animal Life	None
D8-A	10 Jan 2018	Floatables	None
D8-A	10 Jan 2018	Water Color	Green
D8-A	10 Jan 2018	Current Direction	NW
D8-A	10 Jan 2018	Water Temp (C)	11.1
D8-A	10 Jan 2018	Wave Height Low (ft)	2
D8-A	10 Jan 2018	High Tide (ft)	4.8
D8-A	10 Jan 2018	High Tide Time	431
D8-A	10 Jan 2018	Low Tide (ft)	0.9
D8-A	10 Jan 2018	Low Tide Time	1143
D8-A	10 Jan 2018	Comments	Seagrass; Water clear

Station	Date	Parameter	Value
D8-A	17 Jan 2018	Arrive Time	928
D8-A	17 Jan 2018	Weather	Sunny
D8-A	17 Jan 2018	Wind Speed (kts)	2.3
D8-A	17 Jan 2018	Wind Dir	NW
D8-A	17 Jan 2018	Animal Life	None
D8-A	17 Jan 2018	Floatables	None
D8-A	17 Jan 2018	Water Color	Green
D8-A	17 Jan 2018	Current Direction	NW
D8-A	17 Jan 2018	Water Temp (C)	13
D8-A	17 Jan 2018	Wave Height Low (ft)	3
D8-A	17 Jan 2018	High Tide (ft)	5.7
D8-A	17 Jan 2018	High Tide Time	837
D8-A	17 Jan 2018	Low Tide (ft)	-0.7
D8-A	17 Jan 2018	Low Tide Time	1546
D8-A	17 Jan 2018	Comments	Seagrass; Water clear
D8-A	24 Jan 2018	Arrive Time	830
D8-A	24 Jan 2018	Weather	Sunny
D8-A	24 Jan 2018	Wind Speed (kts)	2.9
D8-A	24 Jan 2018	Wind Dir	N
D8-A	24 Jan 2018	Animal Life	None
D8-A	24 Jan 2018	Floatables	None
D8-A	24 Jan 2018	Water Color	Green
D8-A	24 Jan 2018	Current Direction	N
D8-A	24 Jan 2018	Water Temp (C)	13.1
D8-A	24 Jan 2018	Wave Height Low (ft)	2
D8-A	24 Jan 2018	High Tide (ft)	3
D8-A	24 Jan 2018	High Tide Time	1417
D8-A	24 Jan 2018	Low Tide (ft)	1.7
D8-A	24 Jan 2018	Low Tide Time	854
D8-A	24 Jan 2018	Comments	Water clear
D8-A	31 Jan 2018	Arrive Time	908
D8-A	31 Jan 2018	Weather	Sunny
D8-A	31 Jan 2018	Wind Speed (kts)	5.6
D8-A	31 Jan 2018	Wind Dir	NE
D8-A	31 Jan 2018	Animal Life	None
D8-A	31 Jan 2018	Floatables	None
D8-A	31 Jan 2018	Water Color	Green
D8-A	31 Jan 2018	Current Direction	N
D8-A	31 Jan 2018	Water Temp (C)	13.8
D8-A	31 Jan 2018	Wave Height Low (ft)	3
D8-A	31 Jan 2018	High Tide (ft)	6.7
D8-A	31 Jan 2018	High Tide Time	821
D8-A	31 Jan 2018	Low Tide (ft)	-1.8
D8-A	31 Jan 2018	Low Tide Time	1525
D8-A	31 Jan 2018	Comments	Kelp; Seagrass; Algae; 1 Person; Water clear
D9	03 Jan 2018	Arrive Time	843
D9	03 Jan 2018	Weather	Foggy
D9	03 Jan 2018	Wind Speed (kts)	1.7
D9	03 Jan 2018	Wind Dir	W
D9	03 Jan 2018	Animal Life	None
D9	03 Jan 2018	Floatables	None

Station	Date	Parameter	Value
D9	03 Jan 2018	Water Color	Green
D9	03 Jan 2018	Current Direction	W
D9	03 Jan 2018	Water Temp (C)	13.9
D9	03 Jan 2018	Wave Height Low (ft)	2
D9	03 Jan 2018	High Tide (ft)	6.7
D9	03 Jan 2018	High Tide Time	915
D9	03 Jan 2018	Low Tide (ft)	1.5
D9	03 Jan 2018	Low Tide Time	310
D9	03 Jan 2018	Comments	1 Person; Water clear
D9	04 Jan 2018	Arrive Time	956
D9	04 Jan 2018	Weather	Sunny
D9	04 Jan 2018	Wind Speed (kts)	1.4
D9	04 Jan 2018	Wind Dir	W
D9	04 Jan 2018	Animal Life	None
D9	04 Jan 2018	Floatables	None
D9	04 Jan 2018	Water Color	Green
D9	04 Jan 2018	Current Direction	W
D9	04 Jan 2018	Water Temp (C)	12.1
D9	04 Jan 2018	Wave Height Low (ft)	2
D9	04 Jan 2018	High Tide (ft)	6.3
D9	04 Jan 2018	High Tide Time	1003
D9	04 Jan 2018	Low Tide (ft)	1.6
D9	04 Jan 2018	Low Tide Time	402
D9	04 Jan 2018	Comments	Algae; Water clear
D9	10 Jan 2018	Arrive Time	1011
D9	10 Jan 2018	Weather	Partly Cloudy
D9	10 Jan 2018	Wind Speed (kts)	5.4
D9	10 Jan 2018	Wind Dir	W
D9	10 Jan 2018	Animal Life	None
D9	10 Jan 2018	Floatables	None
D9	10 Jan 2018	Water Color	Green
D9	10 Jan 2018	Current Direction	W
D9	10 Jan 2018	Water Temp (C)	11
D9	10 Jan 2018	Wave Height Low (ft)	2
D9	10 Jan 2018	High Tide (ft)	4.8
D9	10 Jan 2018	High Tide Time	431
D9	10 Jan 2018	Low Tide (ft)	0.9
D9	10 Jan 2018	Low Tide Time	1143
D9	10 Jan 2018	Comments	Algae; Water clear
D9	12 Jan 2018	Arrive Time	928
D9	12 Jan 2018	Weather	Cloudy
D9	12 Jan 2018	Wind Speed (kts)	2.1
D9	12 Jan 2018	Wind Dir	W
D9	12 Jan 2018	Animal Life	None
D9	12 Jan 2018	Floatables	None
D9	12 Jan 2018	Water Color	Green
D9	12 Jan 2018	Current Direction	N
D9	12 Jan 2018	Water Temp (C)	11.4
D9	12 Jan 2018	Wave Height Low (ft)	4
D9	12 Jan 2018	High Tide (ft)	5.3
D9	12 Jan 2018	High Tide Time	555
D9	12 Jan 2018	Low Tide (ft)	0

Station	Date	Parameter	Value
D9	12 Jan 2018	Low Tide Time	1314
D9	12 Jan 2018	Comments	Kelp; Seagrass; Algae; 3 Surfers; Water clear
D9	17 Jan 2018	Arrive Time	938
D9	17 Jan 2018	Weather	Sunny
D9	17 Jan 2018	Wind Speed (kts)	1.1
D9	17 Jan 2018	Wind Dir	NW
D9	17 Jan 2018	Animal Life	None
D9	17 Jan 2018	Floatables	None
D9	17 Jan 2018	Water Color	Green
D9	17 Jan 2018	Current Direction	NW
D9	17 Jan 2018	Water Temp (C)	13.3
D9	17 Jan 2018	Wave Height Low (ft)	2
D9	17 Jan 2018	High Tide (ft)	5.7
D9	17 Jan 2018	High Tide Time	837
D9	17 Jan 2018	Low Tide (ft)	-0.7
D9	17 Jan 2018	Low Tide Time	1546
D9	17 Jan 2018	Comments	Kelp; Seagrass; Algae; 2 Persons; Water clear
D9	24 Jan 2018	Arrive Time	844
D9	24 Jan 2018	Weather	Sunny
D9	24 Jan 2018	Wind Speed (kts)	5.3
D9	24 Jan 2018	Wind Dir	SW
D9	24 Jan 2018	Animal Life	None
D9	24 Jan 2018	Floatables	None
D9	24 Jan 2018	Water Color	Green
D9	24 Jan 2018	Current Direction	SW
D9	24 Jan 2018	Water Temp (C)	14.1
D9	24 Jan 2018	Wave Height Low (ft)	3
D9	24 Jan 2018	High Tide (ft)	3
D9	24 Jan 2018	High Tide Time	1417
D9	24 Jan 2018	Low Tide (ft)	1.7
D9	24 Jan 2018	Low Tide Time	854
D9	24 Jan 2018	Comments	Sewage-like odor; Water clear
D9	31 Jan 2018	Arrive Time	920
D9	31 Jan 2018	Weather	Sunny
D9	31 Jan 2018	Wind Speed (kts)	2.2
D9	31 Jan 2018	Wind Dir	E
D9	31 Jan 2018	Animal Life	None
D9	31 Jan 2018	Floatables	None
D9	31 Jan 2018	Water Color	Green
D9	31 Jan 2018	Current Direction	N
D9	31 Jan 2018	Water Temp (C)	13.5
D9	31 Jan 2018	Wave Height Low (ft)	3
D9	31 Jan 2018	High Tide (ft)	6.7
D9	31 Jan 2018	High Tide Time	821
D9	31 Jan 2018	Low Tide (ft)	-1.8
D9	31 Jan 2018	Low Tide Time	1525
D9	31 Jan 2018	Comments	Kelp; Seagrass; Algae; 3 Persons; Water clear
D10	03 Jan 2018	Arrive Time	851
D10	03 Jan 2018	Weather	Foggy
D10	03 Jan 2018	Wind Speed (kts)	4.3
D10	03 Jan 2018	Wind Dir	W

Station	Date	Parameter	Value
D10	03 Jan 2018	Animal Life	None
D10	03 Jan 2018	Floatables	None
D10	03 Jan 2018	Water Color	Green
D10	03 Jan 2018	Current Direction	W
D10	03 Jan 2018	Water Temp (C)	15.1
D10	03 Jan 2018	Wave Height Low (ft)	2
D10	03 Jan 2018	High Tide (ft)	6.7
D10	03 Jan 2018	High Tide Time	915
D10	03 Jan 2018	Low Tide (ft)	1.5
D10	03 Jan 2018	Low Tide Time	310
D10	03 Jan 2018	Comments	2 Persons; 20 Surfers; Water clear
D10	10 Jan 2018	Arrive Time	1024
D10	10 Jan 2018	Weather	Partly Cloudy
D10	10 Jan 2018	Wind Speed (kts)	6.1
D10	10 Jan 2018	Wind Dir	W
D10	10 Jan 2018	Animal Life	None
D10	10 Jan 2018	Floatables	None
D10	10 Jan 2018	Water Color	Green
D10	10 Jan 2018	Current Direction	W
D10	10 Jan 2018	Water Temp (C)	12.1
D10	10 Jan 2018	Wave Height Low (ft)	3
D10	10 Jan 2018	High Tide (ft)	4.8
D10	10 Jan 2018	High Tide Time	431
D10	10 Jan 2018	Low Tide (ft)	0.9
D10	10 Jan 2018	Low Tide Time	1143
D10	10 Jan 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
D10	12 Jan 2018	Arrive Time	936
D10	12 Jan 2018	Weather	Drizzle
D10	12 Jan 2018	Wind Speed (kts)	2.3
D10	12 Jan 2018	Wind Dir	W
D10	12 Jan 2018	Animal Life	None
D10	12 Jan 2018	Floatables	None
D10	12 Jan 2018	Water Color	Green
D10	12 Jan 2018	Current Direction	N
D10	12 Jan 2018	Water Temp (C)	11.2
D10	12 Jan 2018	Wave Height Low (ft)	4
D10	12 Jan 2018	High Tide (ft)	5.3
D10	12 Jan 2018	High Tide Time	555
D10	12 Jan 2018	Low Tide (ft)	0
D10	12 Jan 2018	Low Tide Time	1314
D10	12 Jan 2018	Comments	Kelp; Seagrass; 7 Surfers; Water clear
D10	17 Jan 2018	Arrive Time	954
D10	17 Jan 2018	Weather	Sunny
D10	17 Jan 2018	Wind Speed (kts)	2.7
D10	17 Jan 2018	Wind Dir	NW
D10	17 Jan 2018	Animal Life	None
D10	17 Jan 2018	Floatables	None
D10	17 Jan 2018	Water Color	Green
D10	17 Jan 2018	Current Direction	NW
D10	17 Jan 2018	Water Temp (C)	13.8
D10	17 Jan 2018	Wave Height Low (ft)	4
D10	17 Jan 2018	High Tide (ft)	5.7

Station	Date	Parameter	Value
D10	17 Jan 2018	High Tide Time	837
D10	17 Jan 2018	Low Tide (ft)	-0.7
D10	17 Jan 2018	Low Tide Time	1546
D10	17 Jan 2018	Comments	Seagrass; 8 Persons; 2 Surfers; Water clear
D10	24 Jan 2018	Arrive Time	854
D10	24 Jan 2018	Weather	Sunny
D10	24 Jan 2018	Wind Speed (kts)	0.5
D10	24 Jan 2018	Wind Dir	N
D10	24 Jan 2018	Animal Life	None
D10	24 Jan 2018	Floatables	None
D10	24 Jan 2018	Water Color	Green
D10	24 Jan 2018	Current Direction	N
D10	24 Jan 2018	Water Temp (C)	13.3
D10	24 Jan 2018	Wave Height Low (ft)	3
D10	24 Jan 2018	High Tide (ft)	3
D10	24 Jan 2018	High Tide Time	1417
D10	24 Jan 2018	Low Tide (ft)	1.7
D10	24 Jan 2018	Low Tide Time	854
D10	24 Jan 2018	Comments	Kelp; 16 Surfers; Water clear
D10	31 Jan 2018	Arrive Time	931
D10	31 Jan 2018	Weather	Sunny
D10	31 Jan 2018	Wind Speed (kts)	3.2
D10	31 Jan 2018	Wind Dir	E
D10	31 Jan 2018	Animal Life	None
D10	31 Jan 2018	Floatables	None
D10	31 Jan 2018	Water Color	Green
D10	31 Jan 2018	Current Direction	N
D10	31 Jan 2018	Water Temp (C)	10.2
D10	31 Jan 2018	Wave Height Low (ft)	4
D10	31 Jan 2018	High Tide (ft)	6.7
D10	31 Jan 2018	High Tide Time	821
D10	31 Jan 2018	Low Tide (ft)	-1.8
D10	31 Jan 2018	Low Tide Time	1525
D10	31 Jan 2018	Comments	Kelp; 4 Persons; 5 Surfers; Water clear
D11	03 Jan 2018	Arrive Time	900
D11	03 Jan 2018	Weather	Hazy
D11	03 Jan 2018	Wind Speed (kts)	4.1
D11	03 Jan 2018	Wind Dir	NW
D11	03 Jan 2018	Animal Life	None
D11	03 Jan 2018	Floatables	None
D11	03 Jan 2018	Water Color	Green
D11	03 Jan 2018	Current Direction	NW
D11	03 Jan 2018	Water Temp (C)	15.1
D11	03 Jan 2018	Wave Height Low (ft)	3
D11	03 Jan 2018	High Tide (ft)	6.7
D11	03 Jan 2018	High Tide Time	915
D11	03 Jan 2018	Low Tide (ft)	1.5
D11	03 Jan 2018	Low Tide Time	310
D11	03 Jan 2018	Comments	6 Persons; 15 Surfers; Water clear
D11	10 Jan 2018	Arrive Time	1035
D11	10 Jan 2018	Weather	Moderate Rain

Station	Date	Parameter	Value
D11	10 Jan 2018	Wind Speed (kts)	4.3
D11	10 Jan 2018	Wind Dir	W
D11	10 Jan 2018	Animal Life	None
D11	10 Jan 2018	Floatables	Foam
D11	10 Jan 2018	Water Color	Green
D11	10 Jan 2018	Current Direction	W
D11	10 Jan 2018	Water Temp (C)	
D11	10 Jan 2018	Wave Height Low (ft)	2
D11	10 Jan 2018	High Tide (ft)	4.8
D11	10 Jan 2018	High Tide Time	431
D11	10 Jan 2018	Low Tide (ft)	0.9
D11	10 Jan 2018	Low Tide Time	1143
D11	10 Jan 2018	Comments	3 Persons; Water clear
D11	12 Jan 2018	Arrive Time	940
D11	12 Jan 2018	Weather	Foggy
D11	12 Jan 2018	Wind Speed (kts)	1.5
D11	12 Jan 2018	Wind Dir	W
D11	12 Jan 2018	Animal Life	None
D11	12 Jan 2018	Floatables	None
D11	12 Jan 2018	Water Color	Green
D11	12 Jan 2018	Current Direction	N
D11	12 Jan 2018	Water Temp (C)	11.5
D11	12 Jan 2018	Wave Height Low (ft)	3
D11	12 Jan 2018	High Tide (ft)	5.3
D11	12 Jan 2018	High Tide Time	555
D11	12 Jan 2018	Low Tide (ft)	0
D11	12 Jan 2018	Low Tide Time	1314
D11	12 Jan 2018	Comments	Kelp; Seagrass; 3 Persons; Water clear
D11	17 Jan 2018	Arrive Time	1007
D11	17 Jan 2018	Weather	Sunny
D11	17 Jan 2018	Wind Speed (kts)	3.1
D11	17 Jan 2018	Wind Dir	W
D11	17 Jan 2018	Animal Life	None
D11	17 Jan 2018	Floatables	None
D11	17 Jan 2018	Water Color	Green
D11	17 Jan 2018	Current Direction	W
D11	17 Jan 2018	Water Temp (C)	13.9
D11	17 Jan 2018	Wave Height Low (ft)	4
D11	17 Jan 2018	High Tide (ft)	5.7
D11	17 Jan 2018	High Tide Time	837
D11	17 Jan 2018	Low Tide (ft)	-0.7
D11	17 Jan 2018	Low Tide Time	1546
D11	17 Jan 2018	Comments	Kelp; Seagrass; Algae; 8 Persons; 4 Surfers; Water clear
D11	24 Jan 2018	Arrive Time	859
D11	24 Jan 2018	Weather	Sunny
D11	24 Jan 2018	Wind Speed (kts)	0
D11	24 Jan 2018	Wind Dir	
D11	24 Jan 2018	Animal Life	None
D11	24 Jan 2018	Floatables	None
D11	24 Jan 2018	Water Color	Green
D11	24 Jan 2018	Current Direction	
D11	24 Jan 2018	Water Temp (C)	10.7

Station	Date	Parameter	Value
D11	24 Jan 2018	Wave Height Low (ft)	3
D11	24 Jan 2018	High Tide (ft)	3
D11	24 Jan 2018	High Tide Time	1417
D11	24 Jan 2018	Low Tide (ft)	1.7
D11	24 Jan 2018	Low Tide Time	854
D11	24 Jan 2018	Comments	5 Persons; 8 Surfers; Water clear
D11	31 Jan 2018	Arrive Time	951
D11	31 Jan 2018	Weather	Sunny
D11	31 Jan 2018	Wind Speed (kts)	4.5
D11	31 Jan 2018	Wind Dir	E
D11	31 Jan 2018	Animal Life	None
D11	31 Jan 2018	Floatables	None
D11	31 Jan 2018	Water Color	Green
D11	31 Jan 2018	Current Direction	N
D11	31 Jan 2018	Water Temp (C)	11.1
D11	31 Jan 2018	Wave Height Low (ft)	4
D11	31 Jan 2018	High Tide (ft)	6.7
D11	31 Jan 2018	High Tide Time	821
D11	31 Jan 2018	Low Tide (ft)	-1.8
D11	31 Jan 2018	Low Tide Time	1525
D11	31 Jan 2018	Comments	Kelp; 3 Persons; Water clear
D12	03 Jan 2018	Arrive Time	918
D12	03 Jan 2018	Weather	Hazy
D12	03 Jan 2018	Wind Speed (kts)	4.1
D12	03 Jan 2018	Wind Dir	NW
D12	03 Jan 2018	Animal Life	None
D12	03 Jan 2018	Floatables	None
D12	03 Jan 2018	Water Color	Green
D12	03 Jan 2018	Current Direction	NW
D12	03 Jan 2018	Water Temp (C)	13
D12	03 Jan 2018	Wave Height Low (ft)	3
D12	03 Jan 2018	High Tide (ft)	6.7
D12	03 Jan 2018	High Tide Time	915
D12	03 Jan 2018	Low Tide (ft)	1.5
D12	03 Jan 2018	Low Tide Time	310
D12	03 Jan 2018	Comments	5 Persons; Water clear
D12	10 Jan 2018	Arrive Time	1054
D12	10 Jan 2018	Weather	Moderate Rain
D12	10 Jan 2018	Wind Speed (kts)	4
D12	10 Jan 2018	Wind Dir	W
D12	10 Jan 2018	Animal Life	None
D12	10 Jan 2018	Floatables	None
D12	10 Jan 2018	Water Color	Colorless
D12	10 Jan 2018	Current Direction	W
D12	10 Jan 2018	Water Temp (C)	10.9
D12	10 Jan 2018	Wave Height Low (ft)	2
D12	10 Jan 2018	High Tide (ft)	4.8
D12	10 Jan 2018	High Tide Time	431
D12	10 Jan 2018	Low Tide (ft)	0.9
D12	10 Jan 2018	Low Tide Time	1143
D12	10 Jan 2018	Comments	5 Persons; Water clear

Station	Date	Parameter	Value
D12	17 Jan 2018	Arrive Time	1042
D12	17 Jan 2018	Weather	Sunny
D12	17 Jan 2018	Wind Speed (kts)	3.4
D12	17 Jan 2018	Wind Dir	W
D12	17 Jan 2018	Animal Life	None
D12	17 Jan 2018	Floatables	None
D12	17 Jan 2018	Water Color	Green
D12	17 Jan 2018	Current Direction	W
D12	17 Jan 2018	Water Temp (C)	14
D12	17 Jan 2018	Wave Height Low (ft)	3
D12	17 Jan 2018	High Tide (ft)	5.7
D12	17 Jan 2018	High Tide Time	837
D12	17 Jan 2018	Low Tide (ft)	-0.7
D12	17 Jan 2018	Low Tide Time	1546
D12	17 Jan 2018	Comments	Kelp; Seagrass; 16 Persons; Water clear
D12	24 Jan 2018	Arrive Time	926
D12	24 Jan 2018	Weather	Sunny
D12	24 Jan 2018	Wind Speed (kts)	0
D12	24 Jan 2018	Wind Dir	
D12	24 Jan 2018	Animal Life	None
D12	24 Jan 2018	Floatables	None
D12	24 Jan 2018	Water Color	Green
D12	24 Jan 2018	Current Direction	
D12	24 Jan 2018	Water Temp (C)	12
D12	24 Jan 2018	Wave Height Low (ft)	3
D12	24 Jan 2018	High Tide (ft)	3
D12	24 Jan 2018	High Tide Time	1417
D12	24 Jan 2018	Low Tide (ft)	1.7
D12	24 Jan 2018	Low Tide Time	854
D12	24 Jan 2018	Comments	5 Persons; 4 Surfers; Water clear
D12	31 Jan 2018	Arrive Time	1008
D12	31 Jan 2018	Weather	Sunny
D12	31 Jan 2018	Wind Speed (kts)	3.8
D12	31 Jan 2018	Wind Dir	E
D12	31 Jan 2018	Animal Life	None
D12	31 Jan 2018	Floatables	None
D12	31 Jan 2018	Water Color	Green
D12	31 Jan 2018	Current Direction	N
D12	31 Jan 2018	Water Temp (C)	11.3
D12	31 Jan 2018	Wave Height Low (ft)	3
D12	31 Jan 2018	High Tide (ft)	6.7
D12	31 Jan 2018	High Tide Time	821
D12	31 Jan 2018	Low Tide (ft)	-1.8
D12	31 Jan 2018	Low Tide Time	1525
D12	31 Jan 2018	Comments	Kelp; 3 Persons; Water clear

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# Kelp Stations



**Table 3.1**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >1,000 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jan 2018	7*	4*	12*	8*	5*	4*	4*	3*
02 Jan 2018	7*	4*	12*	8*	5*	4*	4*	3*
03 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
04 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
05 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
06 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
07 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
08 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
09 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
10 Jan 2018	3*	4*	11*	5*	4*	4*	4*	2*
11 Jan 2018	4	5	12	7	6	5	8	6
12 Jan 2018	4	5	12	7	6	5	8	6
13 Jan 2018	5*	7*	18*	7*	8*	3*	9*	7*
14 Jan 2018	5*	7*	18*	7*	8*	3*	9*	7*
15 Jan 2018	5*	7*	18*	7*	8*	3*	9*	7*
16 Jan 2018	4	5	13	7	10	4	9	8
17 Jan 2018	4	5	13	7	10	4	9	8
18 Jan 2018	4	5	13	7	10	4	9	8
19 Jan 2018	4	5	13	7	10	4	9	8
20 Jan 2018	4	5	13	7	10	4	9	8
21 Jan 2018	3*	5*	9*	5*	11*	5*	13*	11*
22 Jan 2018	4	4	8	4	8	4	11	11
23 Jan 2018	4	4	8	4	8	4	11	11
24 Jan 2018	4	4	8	4	8	4	11	11
25 Jan 2018	5*	5*	8*	5*	10*	5*	17*	16*
26 Jan 2018	5*	5*	8*	5*	10*	5*	17*	16*
27 Jan 2018	5*	5*	8*	5*	10*	5*	17*	16*
28 Jan 2018	5*	5*	8*	5*	10*	5*	17*	16*
29 Jan 2018	6	6	8	4	7	4	16	13
30 Jan 2018	6	6	8	4	7	4	16	13
31 Jan 2018	6	6	8	4	7	4	16	13

\* Geometric mean calculated using n<5

**Table 3.2**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >200 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jan 2018	3*	2*	3*	2*	2*	2*	2*	2*
02 Jan 2018	3*	2*	3*	2*	2*	2*	2*	2*
03 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
04 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
05 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
06 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
07 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
08 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
09 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
10 Jan 2018	2*	2*	3*	2*	2*	2*	2*	2*
11 Jan 2018	2	2	3	2	2	2	3	3
12 Jan 2018	2	2	3	2	2	2	3	3
13 Jan 2018	2*	2*	3*	2*	2*	2*	4*	3*
14 Jan 2018	2*	2*	3*	2*	2*	2*	4*	3*
15 Jan 2018	2*	2*	3*	2*	2*	2*	4*	3*
16 Jan 2018	2	2	3	2	2	2	3	3
17 Jan 2018	2	2	3	2	2	2	3	3
18 Jan 2018	2	2	3	2	2	2	3	3
19 Jan 2018	2	2	3	2	2	2	3	3
20 Jan 2018	2	2	3	2	2	2	3	3
21 Jan 2018	2*	2*	2*	2*	2*	2*	4*	3*
22 Jan 2018	2	2	2	2	2	2	3	3
23 Jan 2018	2	2	2	2	2	2	3	3
24 Jan 2018	2	2	2	2	2	2	3	3
25 Jan 2018	2*	2*	2*	2*	2*	2*	4*	3*
26 Jan 2018	2*	2*	2*	2*	2*	2*	4*	3*
27 Jan 2018	2*	2*	2*	2*	2*	2*	4*	3*
28 Jan 2018	2*	2*	2*	2*	2*	2*	4*	3*
29 Jan 2018	2	2	2	2	2	2	3	3
30 Jan 2018	2	2	2	2	2	2	3	3
31 Jan 2018	2	2	2	2	2	2	3	3

\* Geometric mean calculated using n<5

**Table 3.3**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO kelp stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (\*). Values >35 CFU/100 mL exceed the standard.

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Jan 2018	2*	2*	2*	2*	2*	2*	2*	2*
02 Jan 2018	2*	2*	2*	2*	2*	2*	2*	2*
03 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
04 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
05 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
06 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
07 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
08 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
09 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
10 Jan 2018	4*	2*	4*	2*	2*	2*	2*	4*
11 Jan 2018	4	2	4	2	2	2	3	5
12 Jan 2018	4	2	4	2	2	2	3	5
13 Jan 2018	4*	2*	4*	2*	2*	2*	3*	6*
14 Jan 2018	4*	2*	4*	2*	2*	2*	3*	6*
15 Jan 2018	4*	2*	4*	2*	2*	2*	3*	6*
16 Jan 2018	4	2	4	2	2	2	3	5
17 Jan 2018	4	2	4	2	2	2	3	5
18 Jan 2018	4	2	4	2	2	2	3	5
19 Jan 2018	4	2	4	2	2	2	3	5
20 Jan 2018	4	2	4	2	2	2	3	5
21 Jan 2018	4*	2*	4*	2*	2*	2*	3*	7*
22 Jan 2018	4	2	3	2	2	2	3	5
23 Jan 2018	4	2	3	2	2	2	3	5
24 Jan 2018	4	2	3	2	2	2	3	5
25 Jan 2018	4*	2*	4*	2*	2*	2*	3*	7*
26 Jan 2018	4*	2*	4*	2*	2*	2*	3*	7*
27 Jan 2018	4*	2*	4*	2*	2*	2*	3*	7*
28 Jan 2018	4*	2*	4*	2*	2*	2*	3*	7*
29 Jan 2018	4	2	3	2	2	2	3	5
30 Jan 2018	4	2	3	2	2	2	3	5
31 Jan 2018	4	2	3	2	2	2	3	5

\* Geometric mean calculated using n<5

**Table 3.4**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
03 Jan 2018	IC							
11 Jan 2018	IC							
16 Jan 2018	IC							
22 Jan 2018	IC							
29 Jan 2018	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.5**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
03 Jan 2018	IC							
11 Jan 2018	IC							
16 Jan 2018	IC							
22 Jan 2018	IC							
29 Jan 2018	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.6**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
03 Jan 2018	IC							
11 Jan 2018	IC							
16 Jan 2018	IC							
22 Jan 2018	IC							
29 Jan 2018	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.7**

Summary of compliance at the PLOO kelp stations with the Ocean Plan's Single Sample Maximum standard for total coliform bacteria and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	A1	A6	A7	C4	C5	C6	C7	C8
03 Jan 2018	IC							
11 Jan 2018	IC							
16 Jan 2018	IC							
22 Jan 2018	IC							
29 Jan 2018	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.8**

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal) and *Enterococcus* (Enter) bacteria are reported as CFU/100 mL; the fecal:total coliform ratio (F:T) is unitless; values for temperature (Temp, °C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
A1	03 Jan 2018	845	1	2e	<2	<2	1.00	15.9	88.43	7.6	33.50	8.2
A1	03 Jan 2018	845	12	2e	<2	88	1.00	15.8	88.42	7.6	33.50	8.2
A1	03 Jan 2018	845	18	2e	<2	58	1.00	15.8	88.02	7.5	33.50	8.2
A1	11 Jan 2018	814	1	<20	<2	<2	0.10	15.8	82.33	7.3	33.45	8.1
A1	11 Jan 2018	814	12	6e	<2	<2	0.33	15.7	81.77	7.3	33.45	8.1
A1	11 Jan 2018	814	18	24e	2e	<2	0.08	15.6	84.20	7.2	33.46	8.1
A1	16 Jan 2018	857	1	<2	<2	2e	1.00	16.1	84.28	7.6	33.43	8.1
A1	16 Jan 2018	857	12	2e	<2	2e	1.00	15.8	83.93	7.3	33.45	8.1
A1	16 Jan 2018	857	18	2e	<2	<2	1.00	14.9	77.37	6.8	33.44	8.1
A1	22 Jan 2018	757	1	<20	2e	<2	0.10	14.9	84.56	7.6	33.45	8.1
A1	22 Jan 2018	757	12	2e	<2	<2	1.00	14.7	83.58	7.5	33.45	8.1
A1	22 Jan 2018	757	18	<2	<2	<2	1.00	14.4	83.35	7.3	33.43	8.1
A1	29 Jan 2018	758	1	10e	<2	<2	0.20	14.6	80.85	7.6	33.47	8.0
A1	29 Jan 2018	758	12	2e	<2	<2	1.00	13.9	85.11	7.1	33.45	8.0
A1	29 Jan 2018	758	18	28e	<2	<2	0.07	12.6	86.17	6.0	33.47	7.9
C4	03 Jan 2018	1035	1	<2	<2	4e	1.00	15.9	86.04	7.7	33.52	8.2
C4	03 Jan 2018	1035	3	<2	<2	<2	1.00	15.9	86.21	7.7	33.52	8.2
C4	03 Jan 2018	1035	9	<2	<2	2e	1.00	15.9	85.65	7.6	33.52	8.2
C4	11 Jan 2018	945	1	20e	4e	<2	0.20	16.0	51.22	7.5	33.47	8.1
C4	11 Jan 2018	945	3	<20	<2	<2	0.10	16.0	50.54	7.5	33.47	8.1
C4	11 Jan 2018	945	9	40e	4e	<2	0.10	15.8	52.80	6.8	33.46	8.1
C4	16 Jan 2018	1038	1	<2	<2	<2	1.00	16.1	84.36	7.9	33.43	8.2
C4	16 Jan 2018	1038	3	<2	<2	2e	1.00	15.9	82.92	7.8	33.44	8.2
C4	16 Jan 2018	1038	9	<20	2e	<2	0.10	15.3	50.43	6.8	33.44	8.1
C4	22 Jan 2018	924	1	<2	<2	<2	1.00	14.6	66.82	7.8	33.46	8.1
C4	22 Jan 2018	924	3	2e	<2	<2	1.00	14.6	66.29	7.8	33.46	8.1
C4	22 Jan 2018	924	9	<2	<2	<2	1.00	13.8	79.97	6.9	33.43	8.1
C4	29 Jan 2018	934	1	2e	<2	<2	1.00	14.7	80.47	7.6	33.47	8.1
C4	29 Jan 2018	934	3	<2	<2	<2	1.00	14.7	80.38	7.6	33.47	8.1
C4	29 Jan 2018	934	9	<2	<2	<2	1.00	14.4	83.02	7.4	33.46	8.0
C5	03 Jan 2018	1022	1	2e	<2	<2	1.00	16.2	75.94	7.7	33.55	8.2
C5	03 Jan 2018	1022	3	<2	<2	<2	1.00	16.1	75.78	7.5	33.55	8.2
C5	03 Jan 2018	1022	9	<20	<2	<2	0.10	16.0	63.99	6.9	33.55	8.1
C5	11 Jan 2018	940	1	20e	4e	<2	0.20	16.1	50.50	7.3	33.44	8.1
C5	11 Jan 2018	940	3	20e	<2	<2	0.10	16.1	50.78	7.2	33.47	8.1
C5	11 Jan 2018	940	9	40e	<2	<2	0.05	15.9	51.60	6.8	33.46	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C5	16 Jan 2018	1025	1	<20	<2	<2	0.10	16.3	36.76	7.6	33.39	8.1
C5	16 Jan 2018	1025	3	<20	2e	2e	0.10	16.1	23.15	7.5	33.39	8.1
C5	16 Jan 2018	1025	9	<20	<2	<2	0.10	15.8	30.38	6.7	33.41	8.1
C5	22 Jan 2018	914	1	2e	<2	<2	1.00	14.7	79.21	7.5	33.45	8.1
C5	22 Jan 2018	914	3	<2	<2	<2	1.00	14.7	78.58	7.4	33.45	8.1
C5	22 Jan 2018	914	9	2e	<2	<2	1.00	14.5	76.01	6.9	33.45	8.1
C5	29 Jan 2018	922	1	<2	<2	<2	1.00	14.6	81.12	7.8	33.47	8.1
C5	29 Jan 2018	922	3	<2	<2	<2	1.00	14.6	81.07	7.8	33.46	8.1
C5	29 Jan 2018	922	9	<2	<2	<2	1.00	14.5	81.31	7.8	33.46	8.1
A6	03 Jan 2018	917	1	2e	<2	2e	1.00	15.9	85.75	7.8	33.52	8.2
A6	03 Jan 2018	917	12	4e	<2	<2	0.50	15.8	86.08	7.6	33.52	8.2
A6	03 Jan 2018	917	18	16e	<2	<2	0.12	15.6	86.22	7.3	33.51	8.2
A6	11 Jan 2018	840	1	24e	<2	<2	0.08	16.0	75.01	7.3	33.45	8.1
A6	11 Jan 2018	840	12	14e	<2	<2	0.14	15.8	74.97	7.2	33.45	8.1
A6	11 Jan 2018	840	18	20e	4e	<2	0.20	15.6	68.08	7.0	33.45	8.1
A6	16 Jan 2018	924	1	2e	<2	<2	1.00	16.0	77.33	7.4	33.41	8.1
A6	16 Jan 2018	924	12	2e	<2	<2	1.00	15.3	77.89	7.0	33.43	8.1
A6	16 Jan 2018	924	18	2e	<2	2e	1.00	15.0	69.69	6.8	33.44	8.1
A6	22 Jan 2018	821	1	<2	<2	<2	1.00	15.0	81.39	7.7	33.45	8.2
A6	22 Jan 2018	821	12	<2	<2	<2	1.00	14.9	81.11	7.6	33.45	8.2
A6	22 Jan 2018	821	18	2e	<2	<2	1.00	14.7	80.96	7.4	33.45	8.1
A6	29 Jan 2018	825	1	<2	<2	<2	1.00	14.8	82.08	8.5	33.45	8.1
A6	29 Jan 2018	825	12	<2	<2	<2	1.00	14.4	82.45	7.7	33.46	8.0
A6	29 Jan 2018	825	18	28e	4e	<2	0.14	13.5	83.97	6.8	33.47	8.0
C6	03 Jan 2018	1008	1	<2	<2	<2	1.00	16.0	83.57	7.7	33.53	8.2
C6	03 Jan 2018	1008	3	<2	<2	2e	1.00	16.0	83.66	7.7	33.53	8.2
C6	03 Jan 2018	1008	9	<2	<2	4e	1.00	15.8	84.36	7.2	33.52	8.2
C6	11 Jan 2018	924	1	<20	<2	<2	0.10	16.1	67.79	7.4	33.46	8.1
C6	11 Jan 2018	924	3	<20	<2	<2	0.10	16.0	67.41	7.2	33.46	8.1
C6	11 Jan 2018	924	9	2e	<2	<2	1.00	16.0	67.18	7.1	33.46	8.1
C6	16 Jan 2018	1016	1	<2	<2	<2	1.00	16.3	75.41	7.6	33.41	8.1
C6	16 Jan 2018	1016	3	2e	<2	<2	1.00	16.2	71.62	7.6	33.42	8.1
C6	16 Jan 2018	1016	9	<20	<2	<2	0.10	15.8	57.48	7.1	33.44	8.1
C6	22 Jan 2018	903	1	2e	<2	<2	1.00	14.8	78.70	5.9	33.42	8.1
C6	22 Jan 2018	903	3	2e	<2	<2	1.00	14.8	78.32	7.2	33.45	8.1
C6	22 Jan 2018	903	9	2e	<2	2e	1.00	13.8	73.03	6.5	33.71	8.1
C6	29 Jan 2018	910	1	<2	<2	<2	1.00	14.8	76.46	7.7	33.47	8.0
C6	29 Jan 2018	910	3	<2	<2	<2	1.00	14.8	76.73	7.7	33.47	8.1
C6	29 Jan 2018	910	9	<2	<2	<2	1.00	14.0	84.58	7.0	33.45	8.0
A7	03 Jan 2018	903	1	20e	2e	82	0.10	15.8	86.31	7.7	33.52	8.2
A7	03 Jan 2018	903	12	<2	<2	<2	1.00	15.8	85.77	7.6	33.52	8.2

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
A7	03 Jan 2018	903	18	18e	<2	12e	0.11	15.7	85.93	7.4	33.52	8.2
A7	11 Jan 2018	827	1	8e	<2	<2	0.25	15.9	75.04	7.3	33.46	8.1
A7	11 Jan 2018	827	12	14e	4e	<2	0.29	15.6	77.42	7.1	33.46	8.1
A7	11 Jan 2018	827	18	48	<2	<2	0.04	15.5	76.90	7.1	33.46	8.1
A7	16 Jan 2018	910	1	<2	<2	<2	1.00	15.8	70.38	7.1	33.41	8.1
A7	16 Jan 2018	910	12	6e	2e	<2	0.33	15.6	74.15	7.0	33.42	8.1
A7	16 Jan 2018	910	18	<2	<2	2e	1.00	14.8	71.00	6.7	33.43	8.1
A7	22 Jan 2018	809	1	<2	<2	<2	1.00	15.1	84.37	7.8	33.45	8.2
A7	22 Jan 2018	809	12	6e	2e	<2	0.33	14.9	83.83	7.6	33.44	8.1
A7	22 Jan 2018	809	18	6e	<2	<2	0.33	14.3	82.41	7.2	33.44	8.1
A7	29 Jan 2018	814	1	<2	<2	<2	1.00	14.6	81.23	7.8	33.46	8.0
A7	29 Jan 2018	814	12	2e	<2	<2	1.00	14.2	83.34	7.2	33.46	8.0
A7	29 Jan 2018	814	18	14e	<2	2e	0.14	12.9	85.10	6.2	33.46	7.9
C7	03 Jan 2018	932	1	<2	<2	<2	1.00	16.0	86.54	7.7	33.51	8.2
C7	03 Jan 2018	932	12	<2	<2	<2	1.00	15.7	85.66	7.5	33.50	8.2
C7	03 Jan 2018	932	18	14e	<2	<2	0.14	15.6	85.66	7.4	33.50	8.2
C7	11 Jan 2018	854	1	200e	50	14e	0.25	16.1	64.80	7.6	33.30	8.1
C7	11 Jan 2018	854	12	200e	6e	4e	0.03	15.8	70.43	7.2	33.45	8.1
C7	11 Jan 2018	854	18	180e	<2	<2	0.01	15.5	68.75	7.1	33.46	8.1
C7	16 Jan 2018	942	1	<2	<2	<2	1.00	16.2	80.84	7.8	33.43	8.2
C7	16 Jan 2018	942	12	2e	<2	<2	1.00	15.2	83.05	7.2	33.45	8.1
C7	16 Jan 2018	942	18	20e	<2	<2	0.10	14.4	68.58	6.7	33.44	8.1
C7	22 Jan 2018	835	1	4e	<2	<2	0.50	15.0	79.44	7.2	33.43	8.1
C7	22 Jan 2018	835	12	4e	<2	<2	0.50	14.9	78.98	7.4	33.45	8.1
C7	22 Jan 2018	835	18	16e	<2	2e	0.12	14.0	76.30	6.9	33.45	8.1
C7	29 Jan 2018	841	1	2e	<2	<2	1.00	14.7	82.23	8.4	33.46	8.1
C7	29 Jan 2018	841	12	<2	<2	<2	1.00	14.3	83.31	7.6	33.45	8.1
C7	29 Jan 2018	841	18	42	4e	2e	0.10	12.3	84.77	5.8	33.46	7.9
C8	03 Jan 2018	946	1	<2	<2	<2	1.00	16.0	87.04	7.8	33.51	8.2
C8	03 Jan 2018	946	12	<2	<2	<2	1.00	15.7	85.18	7.6	33.50	8.2
C8	03 Jan 2018	946	18	2e	2e	98	1.00	15.5	85.32	7.4	33.49	8.2
C8	11 Jan 2018	905	1	400e	20e	28e	0.05	16.4	71.19	7.6	33.36	8.1
C8	11 Jan 2018	905	12	140e	10e	6e	0.07	16.1	64.33	7.3	33.47	8.2
C8	11 Jan 2018	905	18	120e	<2	2e	0.02	15.5	43.97	7.1	33.44	8.1
C8	16 Jan 2018	954	1	<20	2e	<2	0.10	16.3	71.08	7.7	33.41	8.2
C8	16 Jan 2018	954	12	<2	<2	<2	1.00	14.9	83.14	7.2	33.44	8.1
C8	16 Jan 2018	954	18	20e	<2	4e	0.10	14.1	57.06	6.6	33.42	8.1
C8	22 Jan 2018	846	1	<2	<2	<2	1.00	15.0	73.86	6.0	33.37	8.1
C8	22 Jan 2018	846	12	10e	<2	<2	0.20	14.3	76.50	6.7	33.54	8.1
C8	22 Jan 2018	846	18	24e	2e	<2	0.08	14.0	74.83	6.6	33.52	8.1
C8	29 Jan 2018	852	1	<2	<2	<2	1.00	14.8	74.01	7.3	33.45	8.1

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
C8	29 Jan 2018	852	12	<2	<2	<2	1.00	14.4	83.04	7.7	33.47	8.1
C8	29 Jan 2018	852	18	14e	<2	2e	0.14	12.4	84.73	6.0	33.46	7.9

ns = not sampled

ND = no data

**Table 3.9**

Summary of visual observations made during the month for each PLOO kelp bed station by sample date.

Station	Date	Parameter	Value
A1	03 Jan 2018	Depth (m)	18
A1	03 Jan 2018	Arrive Time	845
A1	03 Jan 2018	Depart Time	853
A1	03 Jan 2018	Air Temp (C)	15
A1	03 Jan 2018	Weather	Continuous layer of clouds
A1	03 Jan 2018	Visibility (mi)	5
A1	03 Jan 2018	Wind Speed (kts)	6
A1	03 Jan 2018	Wind Dir	W
A1	03 Jan 2018	Water Color	Greenish-Blue
A1	03 Jan 2018	Wave Ht Low (ft)	3
A1	03 Jan 2018	Wave Period (sec)	13
A1	03 Jan 2018	Sea State	Calm
A1	03 Jan 2018	High Tide (ft)	6.73
A1	03 Jan 2018	High Tide Time	915
A1	03 Jan 2018	Low Tide (ft)	-1.64
A1	03 Jan 2018	Low Tide Time	1628
A1	03 Jan 2018	Comments	none
A1	11 Jan 2018	Depth (m)	20
A1	11 Jan 2018	Arrive Time	814
A1	11 Jan 2018	Depart Time	820
A1	11 Jan 2018	Air Temp (C)	13
A1	11 Jan 2018	Weather	Haze
A1	11 Jan 2018	Visibility (mi)	8
A1	11 Jan 2018	Wind Speed (kts)	7
A1	11 Jan 2018	Wind Dir	N
A1	11 Jan 2018	Water Color	Green
A1	11 Jan 2018	Wave Ht Low (ft)	5
A1	11 Jan 2018	Wave Period (sec)	11
A1	11 Jan 2018	Sea State	Confused swell
A1	11 Jan 2018	High Tide (ft)	5.06
A1	11 Jan 2018	High Tide Time	516
A1	11 Jan 2018	Low Tide (ft)	0.41
A1	11 Jan 2018	Low Tide Time	34
A1	11 Jan 2018	Comments	none
A1	16 Jan 2018	Depth (m)	19
A1	16 Jan 2018	Arrive Time	857
A1	16 Jan 2018	Depart Time	902
A1	16 Jan 2018	Air Temp (C)	15
A1	16 Jan 2018	Weather	Haze
A1	16 Jan 2018	Visibility (mi)	4
A1	16 Jan 2018	Wind Speed (kts)	4
A1	16 Jan 2018	Wind Dir	N
A1	16 Jan 2018	Water Color	Green
A1	16 Jan 2018	Wave Ht Low (ft)	7
A1	16 Jan 2018	Wave Period (sec)	16
A1	16 Jan 2018	Sea State	Calm
A1	16 Jan 2018	High Tide (ft)	5.73
A1	16 Jan 2018	High Tide Time	806
A1	16 Jan 2018	Low Tide (ft)	-0.71

Station	Date	Parameter	Value
A1	16 Jan 2018	Low Tide Time	1517
A1	16 Jan 2018	Comments	Kelp; Lobster floats
A1	22 Jan 2018	Depth (m)	19
A1	22 Jan 2018	Arrive Time	757
A1	22 Jan 2018	Depart Time	801
A1	22 Jan 2018	Air Temp (C)	13
A1	22 Jan 2018	Weather	Haze
A1	22 Jan 2018	Visibility (mi)	10
A1	22 Jan 2018	Wind Speed (kts)	1
A1	22 Jan 2018	Wind Dir	SW
A1	22 Jan 2018	Water Color	Bluish-Green
A1	22 Jan 2018	Wave Ht Low (ft)	4
A1	22 Jan 2018	Wave Period (sec)	13
A1	22 Jan 2018	Sea State	Wind ripples
A1	22 Jan 2018	High Tide (ft)	4.07
A1	22 Jan 2018	High Tide Time	1132
A1	22 Jan 2018	Low Tide (ft)	2.02
A1	22 Jan 2018	Low Tide Time	559
A1	22 Jan 2018	Comments	Lobster floats
A1	29 Jan 2018	Depth (m)	21
A1	29 Jan 2018	Arrive Time	758
A1	29 Jan 2018	Depart Time	809
A1	29 Jan 2018	Air Temp (C)	18
A1	29 Jan 2018	Weather	Haze
A1	29 Jan 2018	Visibility (mi)	12
A1	29 Jan 2018	Wind Speed (kts)	1
A1	29 Jan 2018	Wind Dir	NE
A1	29 Jan 2018	Water Color	Greenish-Blue
A1	29 Jan 2018	Wave Ht Low (ft)	3
A1	29 Jan 2018	Wave Period (sec)	11
A1	29 Jan 2018	Sea State	Calm
A1	29 Jan 2018	High Tide (ft)	6.43
A1	29 Jan 2018	High Tide Time	648
A1	29 Jan 2018	Low Tide (ft)	1.5
A1	29 Jan 2018	Low Tide Time	1238
A1	29 Jan 2018	Comments	none
C4	03 Jan 2018	Depth (m)	12
C4	03 Jan 2018	Arrive Time	1035
C4	03 Jan 2018	Depart Time	1037
C4	03 Jan 2018	Air Temp (C)	16
C4	03 Jan 2018	Weather	Fog
C4	03 Jan 2018	Visibility (mi)	2
C4	03 Jan 2018	Wind Speed (kts)	3
C4	03 Jan 2018	Wind Dir	W
C4	03 Jan 2018	Water Color	Bluish-Green
C4	03 Jan 2018	Wave Ht Low (ft)	3
C4	03 Jan 2018	Wave Period (sec)	13
C4	03 Jan 2018	Sea State	Calm
C4	03 Jan 2018	High Tide (ft)	6.73
C4	03 Jan 2018	High Tide Time	915
C4	03 Jan 2018	Low Tide (ft)	-1.64
C4	03 Jan 2018	Low Tide Time	1628

Station	Date	Parameter	Value
C4	03 Jan 2018	Comments	Kelp
C4	11 Jan 2018	Depth (m)	11
C4	11 Jan 2018	Arrive Time	945
C4	11 Jan 2018	Depart Time	949
C4	11 Jan 2018	Air Temp (C)	15
C4	11 Jan 2018	Weather	Clear
C4	11 Jan 2018	Visibility (mi)	8
C4	11 Jan 2018	Wind Speed (kts)	6
C4	11 Jan 2018	Wind Dir	E
C4	11 Jan 2018	Water Color	Brown
C4	11 Jan 2018	Wave Ht Low (ft)	5
C4	11 Jan 2018	Wave Period (sec)	11
C4	11 Jan 2018	Sea State	Confused swell
C4	11 Jan 2018	High Tide (ft)	5.06
C4	11 Jan 2018	High Tide Time	516
C4	11 Jan 2018	Low Tide (ft)	0.41
C4	11 Jan 2018	Low Tide Time	34
C4	11 Jan 2018	Comments	Kelp
C4	16 Jan 2018	Depth (m)	13
C4	16 Jan 2018	Arrive Time	1038
C4	16 Jan 2018	Depart Time	1041
C4	16 Jan 2018	Air Temp (C)	15
C4	16 Jan 2018	Weather	Partly Cloudy
C4	16 Jan 2018	Visibility (mi)	6
C4	16 Jan 2018	Wind Speed (kts)	4
C4	16 Jan 2018	Wind Dir	N
C4	16 Jan 2018	Water Color	Green
C4	16 Jan 2018	Wave Ht Low (ft)	8
C4	16 Jan 2018	Wave Period (sec)	16
C4	16 Jan 2018	Sea State	Calm
C4	16 Jan 2018	High Tide (ft)	5.73
C4	16 Jan 2018	High Tide Time	806
C4	16 Jan 2018	Low Tide (ft)	-0.71
C4	16 Jan 2018	Low Tide Time	1517
C4	16 Jan 2018	Comments	Kelp; Boats
C4	22 Jan 2018	Depth (m)	10
C4	22 Jan 2018	Arrive Time	924
C4	22 Jan 2018	Depart Time	927
C4	22 Jan 2018	Air Temp (C)	14
C4	22 Jan 2018	Weather	Haze
C4	22 Jan 2018	Visibility (mi)	14
C4	22 Jan 2018	Wind Speed (kts)	4
C4	22 Jan 2018	Wind Dir	NW
C4	22 Jan 2018	Water Color	Green
C4	22 Jan 2018	Wave Ht Low (ft)	4
C4	22 Jan 2018	Wave Period (sec)	13
C4	22 Jan 2018	Sea State	Wind ripples
C4	22 Jan 2018	High Tide (ft)	4.07
C4	22 Jan 2018	High Tide Time	1132
C4	22 Jan 2018	Low Tide (ft)	2.02
C4	22 Jan 2018	Low Tide Time	559
C4	22 Jan 2018	Comments	Lobster floats; Kelp

Station	Date	Parameter	Value
C4	29 Jan 2018	Depth (m)	10
C4	29 Jan 2018	Arrive Time	934
C4	29 Jan 2018	Depart Time	940
C4	29 Jan 2018	Air Temp (C)	20
C4	29 Jan 2018	Weather	Haze
C4	29 Jan 2018	Visibility (mi)	12
C4	29 Jan 2018	Wind Speed (kts)	0
C4	29 Jan 2018	Wind Dir	
C4	29 Jan 2018	Water Color	Greenish-Blue
C4	29 Jan 2018	Wave Ht Low (ft)	3
C4	29 Jan 2018	Wave Period (sec)	11
C4	29 Jan 2018	Sea State	Calm
C4	29 Jan 2018	High Tide (ft)	6.43
C4	29 Jan 2018	High Tide Time	648
C4	29 Jan 2018	Low Tide (ft)	1.5
C4	29 Jan 2018	Low Tide Time	1238
C4	29 Jan 2018	Comments	Kelp; Lobster floats
C5	03 Jan 2018	Depth (m)	12
C5	03 Jan 2018	Arrive Time	1022
C5	03 Jan 2018	Depart Time	1025
C5	03 Jan 2018	Air Temp (C)	16
C5	03 Jan 2018	Weather	Fog
C5	03 Jan 2018	Visibility (mi)	< 1
C5	03 Jan 2018	Wind Speed (kts)	4
C5	03 Jan 2018	Wind Dir	S
C5	03 Jan 2018	Water Color	Green
C5	03 Jan 2018	Wave Ht Low (ft)	3
C5	03 Jan 2018	Wave Period (sec)	13
C5	03 Jan 2018	Sea State	Calm
C5	03 Jan 2018	High Tide (ft)	6.73
C5	03 Jan 2018	High Tide Time	915
C5	03 Jan 2018	Low Tide (ft)	-1.64
C5	03 Jan 2018	Low Tide Time	1628
C5	03 Jan 2018	Comments	Kelp
C5	11 Jan 2018	Depth (m)	10
C5	11 Jan 2018	Arrive Time	940
C5	11 Jan 2018	Depart Time	941
C5	11 Jan 2018	Air Temp (C)	15
C5	11 Jan 2018	Weather	Clear
C5	11 Jan 2018	Visibility (mi)	8
C5	11 Jan 2018	Wind Speed (kts)	12
C5	11 Jan 2018	Wind Dir	N
C5	11 Jan 2018	Water Color	Brown
C5	11 Jan 2018	Wave Ht Low (ft)	5
C5	11 Jan 2018	Wave Period (sec)	11
C5	11 Jan 2018	Sea State	Confused swell
C5	11 Jan 2018	High Tide (ft)	5.06
C5	11 Jan 2018	High Tide Time	516
C5	11 Jan 2018	Low Tide (ft)	0.41
C5	11 Jan 2018	Low Tide Time	34
C5	11 Jan 2018	Comments	none

Station	Date	Parameter	Value
C5	16 Jan 2018	Depth (m)	13
C5	16 Jan 2018	Arrive Time	1025
C5	16 Jan 2018	Depart Time	1031
C5	16 Jan 2018	Air Temp (C)	15
C5	16 Jan 2018	Weather	Partly Cloudy
C5	16 Jan 2018	Visibility (mi)	6
C5	16 Jan 2018	Wind Speed (kts)	4
C5	16 Jan 2018	Wind Dir	N
C5	16 Jan 2018	Water Color	Green
C5	16 Jan 2018	Wave Ht Low (ft)	8
C5	16 Jan 2018	Wave Period (sec)	16
C5	16 Jan 2018	Sea State	Calm
C5	16 Jan 2018	High Tide (ft)	5.73
C5	16 Jan 2018	High Tide Time	806
C5	16 Jan 2018	Low Tide (ft)	-0.71
C5	16 Jan 2018	Low Tide Time	1517
C5	16 Jan 2018	Comments	Kelp; Lobster floats
C5	22 Jan 2018	Depth (m)	11
C5	22 Jan 2018	Arrive Time	914
C5	22 Jan 2018	Depart Time	919
C5	22 Jan 2018	Air Temp (C)	14
C5	22 Jan 2018	Weather	Haze
C5	22 Jan 2018	Visibility (mi)	14
C5	22 Jan 2018	Wind Speed (kts)	4
C5	22 Jan 2018	Wind Dir	N
C5	22 Jan 2018	Water Color	Bluish-Green
C5	22 Jan 2018	Wave Ht Low (ft)	4
C5	22 Jan 2018	Wave Period (sec)	13
C5	22 Jan 2018	Sea State	Wind ripples
C5	22 Jan 2018	High Tide (ft)	4.07
C5	22 Jan 2018	High Tide Time	1132
C5	22 Jan 2018	Low Tide (ft)	2.02
C5	22 Jan 2018	Low Tide Time	559
C5	22 Jan 2018	Comments	Lobster floats; Kelp
C5	29 Jan 2018	Depth (m)	9
C5	29 Jan 2018	Arrive Time	922
C5	29 Jan 2018	Depart Time	927
C5	29 Jan 2018	Air Temp (C)	19
C5	29 Jan 2018	Weather	Haze
C5	29 Jan 2018	Visibility (mi)	12
C5	29 Jan 2018	Wind Speed (kts)	1
C5	29 Jan 2018	Wind Dir	N
C5	29 Jan 2018	Water Color	Greenish-Blue
C5	29 Jan 2018	Wave Ht Low (ft)	3
C5	29 Jan 2018	Wave Period (sec)	11
C5	29 Jan 2018	Sea State	Calm
C5	29 Jan 2018	High Tide (ft)	6.43
C5	29 Jan 2018	High Tide Time	648
C5	29 Jan 2018	Low Tide (ft)	1.5
C5	29 Jan 2018	Low Tide Time	1238
C5	29 Jan 2018	Comments	Kelp; Lobster floats
A6	03 Jan 2018	Depth (m)	20

Station	Date	Parameter	Value
A6	03 Jan 2018	Arrive Time	917
A6	03 Jan 2018	Depart Time	921
A6	03 Jan 2018	Air Temp (C)	15
A6	03 Jan 2018	Weather	Fog
A6	03 Jan 2018	Visibility (mi)	3
A6	03 Jan 2018	Wind Speed (kts)	3
A6	03 Jan 2018	Wind Dir	W
A6	03 Jan 2018	Water Color	Greenish-Blue
A6	03 Jan 2018	Wave Ht Low (ft)	3
A6	03 Jan 2018	Wave Period (sec)	13
A6	03 Jan 2018	Sea State	Calm
A6	03 Jan 2018	High Tide (ft)	6.73
A6	03 Jan 2018	High Tide Time	915
A6	03 Jan 2018	Low Tide (ft)	-1.64
A6	03 Jan 2018	Low Tide Time	1628
A6	03 Jan 2018	Comments	Kelp; Kelp debris
A6	11 Jan 2018	Depth (m)	18
A6	11 Jan 2018	Arrive Time	840
A6	11 Jan 2018	Depart Time	845
A6	11 Jan 2018	Air Temp (C)	14
A6	11 Jan 2018	Weather	Haze
A6	11 Jan 2018	Visibility (mi)	8
A6	11 Jan 2018	Wind Speed (kts)	4
A6	11 Jan 2018	Wind Dir	SE
A6	11 Jan 2018	Water Color	Green
A6	11 Jan 2018	Wave Ht Low (ft)	5
A6	11 Jan 2018	Wave Period (sec)	11
A6	11 Jan 2018	Sea State	Confused swell
A6	11 Jan 2018	High Tide (ft)	5.06
A6	11 Jan 2018	High Tide Time	516
A6	11 Jan 2018	Low Tide (ft)	0.41
A6	11 Jan 2018	Low Tide Time	34
A6	11 Jan 2018	Comments	none
A6	16 Jan 2018	Depth (m)	18
A6	16 Jan 2018	Arrive Time	924
A6	16 Jan 2018	Depart Time	930
A6	16 Jan 2018	Air Temp (C)	15
A6	16 Jan 2018	Weather	Haze
A6	16 Jan 2018	Visibility (mi)	4
A6	16 Jan 2018	Wind Speed (kts)	4
A6	16 Jan 2018	Wind Dir	N
A6	16 Jan 2018	Water Color	Green
A6	16 Jan 2018	Wave Ht Low (ft)	7
A6	16 Jan 2018	Wave Period (sec)	16
A6	16 Jan 2018	Sea State	Calm
A6	16 Jan 2018	High Tide (ft)	5.73
A6	16 Jan 2018	High Tide Time	806
A6	16 Jan 2018	Low Tide (ft)	-0.71
A6	16 Jan 2018	Low Tide Time	1517
A6	16 Jan 2018	Comments	Kelp; Lobster floats
A6	22 Jan 2018	Depth (m)	20
A6	22 Jan 2018	Arrive Time	821

Station	Date	Parameter	Value
A6	22 Jan 2018	Depart Time	827
A6	22 Jan 2018	Air Temp (C)	13
A6	22 Jan 2018	Weather	Haze
A6	22 Jan 2018	Visibility (mi)	10
A6	22 Jan 2018	Wind Speed (kts)	4
A6	22 Jan 2018	Wind Dir	W
A6	22 Jan 2018	Water Color	Bluish-Green
A6	22 Jan 2018	Wave Ht Low (ft)	4
A6	22 Jan 2018	Wave Period (sec)	13
A6	22 Jan 2018	Sea State	Wind ripples
A6	22 Jan 2018	High Tide (ft)	4.07
A6	22 Jan 2018	High Tide Time	1132
A6	22 Jan 2018	Low Tide (ft)	2.02
A6	22 Jan 2018	Low Tide Time	559
A6	22 Jan 2018	Comments	Lobster floats; Kelp
A6	29 Jan 2018	Depth (m)	20
A6	29 Jan 2018	Arrive Time	825
A6	29 Jan 2018	Depart Time	834
A6	29 Jan 2018	Air Temp (C)	19
A6	29 Jan 2018	Weather	Haze
A6	29 Jan 2018	Visibility (mi)	12
A6	29 Jan 2018	Wind Speed (kts)	3
A6	29 Jan 2018	Wind Dir	SE
A6	29 Jan 2018	Water Color	Greenish-Blue
A6	29 Jan 2018	Wave Ht Low (ft)	3
A6	29 Jan 2018	Wave Period (sec)	11
A6	29 Jan 2018	Sea State	Calm
A6	29 Jan 2018	High Tide (ft)	6.43
A6	29 Jan 2018	High Tide Time	648
A6	29 Jan 2018	Low Tide (ft)	1.5
A6	29 Jan 2018	Low Tide Time	1238
A6	29 Jan 2018	Comments	Lobster floats
C6	03 Jan 2018	Depth (m)	10
C6	03 Jan 2018	Arrive Time	1008
C6	03 Jan 2018	Depart Time	1011
C6	03 Jan 2018	Air Temp (C)	15
C6	03 Jan 2018	Weather	Fog
C6	03 Jan 2018	Visibility (mi)	< 1
C6	03 Jan 2018	Wind Speed (kts)	3
C6	03 Jan 2018	Wind Dir	S
C6	03 Jan 2018	Water Color	Greenish-Blue
C6	03 Jan 2018	Wave Ht Low (ft)	3
C6	03 Jan 2018	Wave Period (sec)	13
C6	03 Jan 2018	Sea State	Calm
C6	03 Jan 2018	High Tide (ft)	6.73
C6	03 Jan 2018	High Tide Time	915
C6	03 Jan 2018	Low Tide (ft)	-1.64
C6	03 Jan 2018	Low Tide Time	1628
C6	03 Jan 2018	Comments	Seagrass; Kelp; Kelp debris; Lobster traps
C6	11 Jan 2018	Depth (m)	9
C6	11 Jan 2018	Arrive Time	924
C6	11 Jan 2018	Depart Time	928

Station	Date	Parameter	Value
C6	11 Jan 2018	Air Temp (C)	15
C6	11 Jan 2018	Weather	Haze
C6	11 Jan 2018	Visibility (mi)	8
C6	11 Jan 2018	Wind Speed (kts)	3
C6	11 Jan 2018	Wind Dir	NE
C6	11 Jan 2018	Water Color	Green
C6	11 Jan 2018	Wave Ht Low (ft)	5
C6	11 Jan 2018	Wave Period (sec)	11
C6	11 Jan 2018	Sea State	Confused swell
C6	11 Jan 2018	High Tide (ft)	5.06
C6	11 Jan 2018	High Tide Time	516
C6	11 Jan 2018	Low Tide (ft)	0.41
C6	11 Jan 2018	Low Tide Time	34
C6	11 Jan 2018	Comments	Kelp
C6	16 Jan 2018	Depth (m)	10
C6	16 Jan 2018	Arrive Time	1016
C6	16 Jan 2018	Depart Time	1018
C6	16 Jan 2018	Air Temp (C)	15
C6	16 Jan 2018	Weather	Partly Cloudy
C6	16 Jan 2018	Visibility (mi)	6
C6	16 Jan 2018	Wind Speed (kts)	4
C6	16 Jan 2018	Wind Dir	N
C6	16 Jan 2018	Water Color	Green
C6	16 Jan 2018	Wave Ht Low (ft)	7
C6	16 Jan 2018	Wave Period (sec)	16
C6	16 Jan 2018	Sea State	Calm
C6	16 Jan 2018	High Tide (ft)	5.73
C6	16 Jan 2018	High Tide Time	806
C6	16 Jan 2018	Low Tide (ft)	-0.71
C6	16 Jan 2018	Low Tide Time	1517
C6	16 Jan 2018	Comments	Kelp; Lobster floats
C6	22 Jan 2018	Depth (m)	10
C6	22 Jan 2018	Arrive Time	903
C6	22 Jan 2018	Depart Time	909
C6	22 Jan 2018	Air Temp (C)	14
C6	22 Jan 2018	Weather	Haze
C6	22 Jan 2018	Visibility (mi)	14
C6	22 Jan 2018	Wind Speed (kts)	3
C6	22 Jan 2018	Wind Dir	N
C6	22 Jan 2018	Water Color	Bluish-Green
C6	22 Jan 2018	Wave Ht Low (ft)	4
C6	22 Jan 2018	Wave Period (sec)	13
C6	22 Jan 2018	Sea State	Wind ripples
C6	22 Jan 2018	High Tide (ft)	4.07
C6	22 Jan 2018	High Tide Time	1132
C6	22 Jan 2018	Low Tide (ft)	2.02
C6	22 Jan 2018	Low Tide Time	559
C6	22 Jan 2018	Comments	Lobster floats; High CDOM has been validated on upcast.; Kelp
C6	29 Jan 2018	Depth (m)	10
C6	29 Jan 2018	Arrive Time	910
C6	29 Jan 2018	Depart Time	915
C6	29 Jan 2018	Air Temp (C)	17

Station	Date	Parameter	Value
C6	29 Jan 2018	Weather	Haze
C6	29 Jan 2018	Visibility (mi)	12
C6	29 Jan 2018	Wind Speed (kts)	5
C6	29 Jan 2018	Wind Dir	NW
C6	29 Jan 2018	Water Color	Greenish-Blue
C6	29 Jan 2018	Wave Ht Low (ft)	3
C6	29 Jan 2018	Wave Period (sec)	11
C6	29 Jan 2018	Sea State	Calm
C6	29 Jan 2018	High Tide (ft)	6.43
C6	29 Jan 2018	High Tide Time	648
C6	29 Jan 2018	Low Tide (ft)	1.5
C6	29 Jan 2018	Low Tide Time	1238
C6	29 Jan 2018	Comments	Kelp; Lobster floats
A7	03 Jan 2018	Depth (m)	20
A7	03 Jan 2018	Arrive Time	903
A7	03 Jan 2018	Depart Time	908
A7	03 Jan 2018	Air Temp (C)	16
A7	03 Jan 2018	Weather	Continuous layer of clouds
A7	03 Jan 2018	Visibility (mi)	5
A7	03 Jan 2018	Wind Speed (kts)	2
A7	03 Jan 2018	Wind Dir	NE
A7	03 Jan 2018	Water Color	Greenish-Blue
A7	03 Jan 2018	Wave Ht Low (ft)	3
A7	03 Jan 2018	Wave Period (sec)	13
A7	03 Jan 2018	Sea State	Calm
A7	03 Jan 2018	High Tide (ft)	6.73
A7	03 Jan 2018	High Tide Time	915
A7	03 Jan 2018	Low Tide (ft)	-1.64
A7	03 Jan 2018	Low Tide Time	1628
A7	03 Jan 2018	Comments	Kelp debris
A7	11 Jan 2018	Depth (m)	20
A7	11 Jan 2018	Arrive Time	827
A7	11 Jan 2018	Depart Time	833
A7	11 Jan 2018	Air Temp (C)	14
A7	11 Jan 2018	Weather	Haze
A7	11 Jan 2018	Visibility (mi)	8
A7	11 Jan 2018	Wind Speed (kts)	5
A7	11 Jan 2018	Wind Dir	N
A7	11 Jan 2018	Water Color	Green
A7	11 Jan 2018	Wave Ht Low (ft)	5
A7	11 Jan 2018	Wave Period (sec)	11
A7	11 Jan 2018	Sea State	Confused swell
A7	11 Jan 2018	High Tide (ft)	5.06
A7	11 Jan 2018	High Tide Time	516
A7	11 Jan 2018	Low Tide (ft)	0.41
A7	11 Jan 2018	Low Tide Time	34
A7	11 Jan 2018	Comments	none
A7	16 Jan 2018	Depth (m)	19
A7	16 Jan 2018	Arrive Time	910
A7	16 Jan 2018	Depart Time	916
A7	16 Jan 2018	Air Temp (C)	15
A7	16 Jan 2018	Weather	Haze

Station	Date	Parameter	Value
A7	16 Jan 2018	Visibility (mi)	4
A7	16 Jan 2018	Wind Speed (kts)	4
A7	16 Jan 2018	Wind Dir	N
A7	16 Jan 2018	Water Color	Green
A7	16 Jan 2018	Wave Ht Low (ft)	7
A7	16 Jan 2018	Wave Period (sec)	16
A7	16 Jan 2018	Sea State	Calm
A7	16 Jan 2018	High Tide (ft)	5.73
A7	16 Jan 2018	High Tide Time	806
A7	16 Jan 2018	Low Tide (ft)	-0.71
A7	16 Jan 2018	Low Tide Time	1517
A7	16 Jan 2018	Comments	Kelp; Lobster floats
A7	22 Jan 2018	Depth (m)	19
A7	22 Jan 2018	Arrive Time	809
A7	22 Jan 2018	Depart Time	814
A7	22 Jan 2018	Air Temp (C)	14
A7	22 Jan 2018	Weather	Haze
A7	22 Jan 2018	Visibility (mi)	10
A7	22 Jan 2018	Wind Speed (kts)	2
A7	22 Jan 2018	Wind Dir	W
A7	22 Jan 2018	Water Color	Bluish-Green
A7	22 Jan 2018	Wave Ht Low (ft)	4
A7	22 Jan 2018	Wave Period (sec)	13
A7	22 Jan 2018	Sea State	Wind ripples
A7	22 Jan 2018	High Tide (ft)	4.07
A7	22 Jan 2018	High Tide Time	1132
A7	22 Jan 2018	Low Tide (ft)	2.02
A7	22 Jan 2018	Low Tide Time	559
A7	22 Jan 2018	Comments	Lobster floats
A7	29 Jan 2018	Depth (m)	20
A7	29 Jan 2018	Arrive Time	814
A7	29 Jan 2018	Depart Time	820
A7	29 Jan 2018	Air Temp (C)	18
A7	29 Jan 2018	Weather	Haze
A7	29 Jan 2018	Visibility (mi)	12
A7	29 Jan 2018	Wind Speed (kts)	2
A7	29 Jan 2018	Wind Dir	NE
A7	29 Jan 2018	Water Color	Greenish-Blue
A7	29 Jan 2018	Wave Ht Low (ft)	3
A7	29 Jan 2018	Wave Period (sec)	11
A7	29 Jan 2018	Sea State	Calm
A7	29 Jan 2018	High Tide (ft)	6.43
A7	29 Jan 2018	High Tide Time	648
A7	29 Jan 2018	Low Tide (ft)	1.5
A7	29 Jan 2018	Low Tide Time	1238
A7	29 Jan 2018	Comments	none
C7	03 Jan 2018	Depth (m)	20
C7	03 Jan 2018	Arrive Time	932
C7	03 Jan 2018	Depart Time	936
C7	03 Jan 2018	Air Temp (C)	15
C7	03 Jan 2018	Weather	Fog
C7	03 Jan 2018	Visibility (mi)	2

Station	Date	Parameter	Value
C7	03 Jan 2018	Wind Speed (kts)	1
C7	03 Jan 2018	Wind Dir	E
C7	03 Jan 2018	Water Color	Greenish-Blue
C7	03 Jan 2018	Wave Ht Low (ft)	3
C7	03 Jan 2018	Wave Period (sec)	13
C7	03 Jan 2018	Sea State	Calm
C7	03 Jan 2018	High Tide (ft)	6.73
C7	03 Jan 2018	High Tide Time	915
C7	03 Jan 2018	Low Tide (ft)	-1.64
C7	03 Jan 2018	Low Tide Time	1628
C7	03 Jan 2018	Comments	none
C7	11 Jan 2018	Depth (m)	18
C7	11 Jan 2018	Arrive Time	854
C7	11 Jan 2018	Depart Time	859
C7	11 Jan 2018	Air Temp (C)	14
C7	11 Jan 2018	Weather	Haze
C7	11 Jan 2018	Visibility (mi)	8
C7	11 Jan 2018	Wind Speed (kts)	5
C7	11 Jan 2018	Wind Dir	N
C7	11 Jan 2018	Water Color	Green
C7	11 Jan 2018	Wave Ht Low (ft)	5
C7	11 Jan 2018	Wave Period (sec)	11
C7	11 Jan 2018	Sea State	Confused swell
C7	11 Jan 2018	High Tide (ft)	5.06
C7	11 Jan 2018	High Tide Time	516
C7	11 Jan 2018	Low Tide (ft)	0.41
C7	11 Jan 2018	Low Tide Time	34
C7	11 Jan 2018	Comments	Kelp
C7	16 Jan 2018	Depth (m)	19
C7	16 Jan 2018	Arrive Time	942
C7	16 Jan 2018	Depart Time	946
C7	16 Jan 2018	Air Temp (C)	15
C7	16 Jan 2018	Weather	Haze
C7	16 Jan 2018	Visibility (mi)	4
C7	16 Jan 2018	Wind Speed (kts)	4
C7	16 Jan 2018	Wind Dir	N
C7	16 Jan 2018	Water Color	Green
C7	16 Jan 2018	Wave Ht Low (ft)	7
C7	16 Jan 2018	Wave Period (sec)	16
C7	16 Jan 2018	Sea State	Calm
C7	16 Jan 2018	High Tide (ft)	5.73
C7	16 Jan 2018	High Tide Time	806
C7	16 Jan 2018	Low Tide (ft)	-0.71
C7	16 Jan 2018	Low Tide Time	1517
C7	16 Jan 2018	Comments	Kelp; Lobster floats
C7	22 Jan 2018	Depth (m)	18
C7	22 Jan 2018	Arrive Time	835
C7	22 Jan 2018	Depart Time	839
C7	22 Jan 2018	Air Temp (C)	13
C7	22 Jan 2018	Weather	Haze
C7	22 Jan 2018	Visibility (mi)	10
C7	22 Jan 2018	Wind Speed (kts)	3

Station	Date	Parameter	Value
C7	22 Jan 2018	Wind Dir	W
C7	22 Jan 2018	Water Color	Bluish-Green
C7	22 Jan 2018	Wave Ht Low (ft)	4
C7	22 Jan 2018	Wave Period (sec)	13
C7	22 Jan 2018	Sea State	Wind ripples
C7	22 Jan 2018	High Tide (ft)	4.07
C7	22 Jan 2018	High Tide Time	1132
C7	22 Jan 2018	Low Tide (ft)	2.02
C7	22 Jan 2018	Low Tide Time	559
C7	22 Jan 2018	Comments	Lobster floats; Kelp debris
C7	29 Jan 2018	Depth (m)	20
C7	29 Jan 2018	Arrive Time	841
C7	29 Jan 2018	Depart Time	845
C7	29 Jan 2018	Air Temp (C)	16
C7	29 Jan 2018	Weather	Haze
C7	29 Jan 2018	Visibility (mi)	12
C7	29 Jan 2018	Wind Speed (kts)	3
C7	29 Jan 2018	Wind Dir	SW
C7	29 Jan 2018	Water Color	Brownish-Green
C7	29 Jan 2018	Wave Ht Low (ft)	3
C7	29 Jan 2018	Wave Period (sec)	11
C7	29 Jan 2018	Sea State	Calm
C7	29 Jan 2018	High Tide (ft)	6.43
C7	29 Jan 2018	High Tide Time	648
C7	29 Jan 2018	Low Tide (ft)	1.5
C7	29 Jan 2018	Low Tide Time	1238
C7	29 Jan 2018	Comments	Kelp
C8	03 Jan 2018	Depth (m)	21
C8	03 Jan 2018	Arrive Time	946
C8	03 Jan 2018	Depart Time	950
C8	03 Jan 2018	Air Temp (C)	15
C8	03 Jan 2018	Weather	Fog
C8	03 Jan 2018	Visibility (mi)	< 1
C8	03 Jan 2018	Wind Speed (kts)	2
C8	03 Jan 2018	Wind Dir	W
C8	03 Jan 2018	Water Color	Greenish-Blue
C8	03 Jan 2018	Wave Ht Low (ft)	3
C8	03 Jan 2018	Wave Period (sec)	13
C8	03 Jan 2018	Sea State	Calm
C8	03 Jan 2018	High Tide (ft)	6.73
C8	03 Jan 2018	High Tide Time	915
C8	03 Jan 2018	Low Tide (ft)	-1.64
C8	03 Jan 2018	Low Tide Time	1628
C8	03 Jan 2018	Comments	Kelp debris
C8	11 Jan 2018	Depth (m)	19
C8	11 Jan 2018	Arrive Time	905
C8	11 Jan 2018	Depart Time	910
C8	11 Jan 2018	Air Temp (C)	14
C8	11 Jan 2018	Weather	Haze
C8	11 Jan 2018	Visibility (mi)	8
C8	11 Jan 2018	Wind Speed (kts)	2
C8	11 Jan 2018	Wind Dir	N

Station	Date	Parameter	Value
C8	11 Jan 2018	Water Color	Green
C8	11 Jan 2018	Wave Ht Low (ft)	5
C8	11 Jan 2018	Wave Period (sec)	11
C8	11 Jan 2018	Sea State	Confused swell
C8	11 Jan 2018	High Tide (ft)	5.06
C8	11 Jan 2018	High Tide Time	516
C8	11 Jan 2018	Low Tide (ft)	0.41
C8	11 Jan 2018	Low Tide Time	34
C8	11 Jan 2018	Comments	none
C8	16 Jan 2018	Depth (m)	20
C8	16 Jan 2018	Arrive Time	954
C8	16 Jan 2018	Depart Time	958
C8	16 Jan 2018	Air Temp (C)	15
C8	16 Jan 2018	Weather	Haze
C8	16 Jan 2018	Visibility (mi)	4
C8	16 Jan 2018	Wind Speed (kts)	4
C8	16 Jan 2018	Wind Dir	N
C8	16 Jan 2018	Water Color	Green
C8	16 Jan 2018	Wave Ht Low (ft)	7
C8	16 Jan 2018	Wave Period (sec)	16
C8	16 Jan 2018	Sea State	Calm
C8	16 Jan 2018	High Tide (ft)	5.73
C8	16 Jan 2018	High Tide Time	806
C8	16 Jan 2018	Low Tide (ft)	-0.71
C8	16 Jan 2018	Low Tide Time	1517
C8	16 Jan 2018	Comments	Kelp debris
C8	22 Jan 2018	Depth (m)	19
C8	22 Jan 2018	Arrive Time	846
C8	22 Jan 2018	Depart Time	851
C8	22 Jan 2018	Air Temp (C)	12
C8	22 Jan 2018	Weather	Haze
C8	22 Jan 2018	Visibility (mi)	10
C8	22 Jan 2018	Wind Speed (kts)	8
C8	22 Jan 2018	Wind Dir	NW
C8	22 Jan 2018	Water Color	Bluish-Green
C8	22 Jan 2018	Wave Ht Low (ft)	4
C8	22 Jan 2018	Wave Period (sec)	13
C8	22 Jan 2018	Sea State	Wind ripples
C8	22 Jan 2018	High Tide (ft)	4.07
C8	22 Jan 2018	High Tide Time	1132
C8	22 Jan 2018	Low Tide (ft)	2.02
C8	22 Jan 2018	Low Tide Time	559
C8	22 Jan 2018	Comments	Lobster floats; High CDOM has been validated on upcast.; Kelp debris
C8	29 Jan 2018	Depth (m)	20
C8	29 Jan 2018	Arrive Time	852
C8	29 Jan 2018	Depart Time	857
C8	29 Jan 2018	Air Temp (C)	16
C8	29 Jan 2018	Weather	Haze
C8	29 Jan 2018	Visibility (mi)	12
C8	29 Jan 2018	Wind Speed (kts)	2
C8	29 Jan 2018	Wind Dir	E

Station	Date	Parameter	Value
C8	29 Jan 2018	Water Color	Greenish-Blue
C8	29 Jan 2018	Wave Ht Low (ft)	3
C8	29 Jan 2018	Wave Period (sec)	11
C8	29 Jan 2018	Sea State	Calm
C8	29 Jan 2018	High Tide (ft)	6.43
C8	29 Jan 2018	High Tide Time	648
C8	29 Jan 2018	Low Tide (ft)	1.5
C8	29 Jan 2018	Low Tide Time	1238
C8	29 Jan 2018	Comments	none

**Table 3.10**

Summary of CTD profile data from the PLOO kelp stations for each sample date.

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A1	03 Jan 2018	1	15.88	88.43	7.6	33.50	8.2	24.6	0.89
A1	03 Jan 2018	2	15.88	88.32	7.6	33.50	8.2	24.6	0.80
A1	03 Jan 2018	3	15.87	88.41	7.6	33.50	8.2	24.6	0.89
A1	03 Jan 2018	4	15.87	88.32	7.6	33.50	8.2	24.6	0.86
A1	03 Jan 2018	5	15.87	88.45	7.6	33.50	8.2	24.6	0.91
A1	03 Jan 2018	6	15.87	88.26	7.6	33.50	8.2	24.6	0.88
A1	03 Jan 2018	7	15.87	88.43	7.6	33.50	8.2	24.6	0.85
A1	03 Jan 2018	8	15.87	88.37	7.6	33.50	8.2	24.6	0.87
A1	03 Jan 2018	9	15.87	88.33	7.6	33.50	8.2	24.6	0.89
A1	03 Jan 2018	10	15.87	88.23	7.6	33.50	8.2	24.6	0.91
A1	03 Jan 2018	11	15.86	88.46	7.6	33.50	8.2	24.6	0.92
A1	03 Jan 2018	12	15.85	88.42	7.6	33.50	8.2	24.6	0.82
A1	03 Jan 2018	13	15.83	88.31	7.6	33.50	8.2	24.6	0.88
A1	03 Jan 2018	14	15.80	88.12	7.6	33.50	8.2	24.6	0.91
A1	03 Jan 2018	15	15.77	87.75	7.5	33.50	8.2	24.6	0.90
A1	03 Jan 2018	16	15.76	87.98	7.5	33.50	8.2	24.6	0.81
A1	03 Jan 2018	17	15.76	88.03	7.5	33.50	8.2	24.6	0.85
A1	03 Jan 2018	18	15.76	88.02	7.5	33.50	8.2	24.6	0.81
A1	03 Jan 2018	19	15.75	87.88	7.5	33.50	8.2	24.6	0.81
A1	03 Jan 2018	20	15.75	87.81	7.5	33.50	8.2	24.6	0.86
A1	11 Jan 2018	1	15.76	82.33	7.3	33.45	8.1	24.6	0.53
A1	11 Jan 2018	2	15.76	82.34	7.3	33.45	8.1	24.6	0.52
A1	11 Jan 2018	3	15.76	82.22	7.3	33.45	8.1	24.6	0.56
A1	11 Jan 2018	4	15.77	82.06	7.3	33.45	8.1	24.6	0.63
A1	11 Jan 2018	5	15.77	82.06	7.3	33.45	8.1	24.6	0.72
A1	11 Jan 2018	6	15.77	82.09	7.3	33.45	8.1	24.6	0.73
A1	11 Jan 2018	7	15.77	82.10	7.3	33.45	8.1	24.6	0.77
A1	11 Jan 2018	8	15.77	82.19	7.3	33.45	8.1	24.6	0.80
A1	11 Jan 2018	9	15.77	82.05	7.3	33.45	8.1	24.6	0.81
A1	11 Jan 2018	10	15.76	82.14	7.3	33.45	8.1	24.6	0.83
A1	11 Jan 2018	11	15.74	81.90	7.3	33.45	8.1	24.6	0.85
A1	11 Jan 2018	12	15.72	81.77	7.3	33.45	8.1	24.6	0.83
A1	11 Jan 2018	13	15.71	82.54	7.3	33.45	8.1	24.6	0.79
A1	11 Jan 2018	14	15.70	83.79	7.3	33.46	8.1	24.6	0.80
A1	11 Jan 2018	15	15.68	84.38	7.2	33.46	8.1	24.6	0.80
A1	11 Jan 2018	16	15.66	84.69	7.2	33.46	8.1	24.6	0.80
A1	11 Jan 2018	17	15.64	84.59	7.2	33.46	8.1	24.6	0.79
A1	11 Jan 2018	18	15.63	84.20	7.2	33.46	8.1	24.6	0.78
A1	11 Jan 2018	19	15.61	84.00	7.2	33.46	8.1	24.7	0.75
A1	11 Jan 2018	20	15.59	83.14	7.2	33.47	8.1	24.7	0.69
A1	16 Jan 2018	1	16.05	84.28	7.6	33.43	8.1	24.5	1.06
A1	16 Jan 2018	2	16.05	84.06	7.6	33.43	8.1	24.5	1.09
A1	16 Jan 2018	3	16.04	84.27	7.6	33.43	8.1	24.5	1.15
A1	16 Jan 2018	4	16.02	84.30	7.6	33.43	8.1	24.5	1.30
A1	16 Jan 2018	5	16.01	84.14	7.6	33.43	8.1	24.5	1.52
A1	16 Jan 2018	6	16.00	84.12	7.6	33.43	8.1	24.5	1.48
A1	16 Jan 2018	7	15.95	83.89	7.6	33.44	8.1	24.6	1.64
A1	16 Jan 2018	8	15.92	83.45	7.6	33.44	8.1	24.6	1.69

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A1	16 Jan 2018	9	15.91	83.06	7.6	33.44	8.1	24.6	1.75
A1	16 Jan 2018	10	15.91	82.96	7.5	33.44	8.1	24.6	1.68
A1	16 Jan 2018	11	15.87	83.71	7.4	33.45	8.1	24.6	1.58
A1	16 Jan 2018	12	15.83	83.93	7.3	33.45	8.1	24.6	1.54
A1	16 Jan 2018	13	15.48	84.07	7.2	33.46	8.1	24.7	1.36
A1	16 Jan 2018	14	15.18	82.50	7.0	33.45	8.1	24.7	1.18
A1	16 Jan 2018	15	15.07	81.72	6.9	33.45	8.1	24.8	1.08
A1	16 Jan 2018	16	14.99	78.31	6.9	33.44	8.1	24.8	1.02
A1	16 Jan 2018	17	15.01	78.28	6.9	33.44	8.1	24.8	1.06
A1	16 Jan 2018	18	14.93	77.37	6.8	33.44	8.1	24.8	1.01
A1	16 Jan 2018	19	14.88	76.31	6.8	33.44	8.1	24.8	0.97
A1	16 Jan 2018	20	14.87	75.39	6.8	33.44	8.1	24.8	0.99
A1	22 Jan 2018	1	14.86	84.56	7.6	33.45	8.1	24.8	0.90
A1	22 Jan 2018	2	14.86	85.32	7.6	33.45	8.1	24.8	0.93
A1	22 Jan 2018	3	14.86	85.57	7.6	33.45	8.1	24.8	0.95
A1	22 Jan 2018	4	14.85	84.88	7.6	33.45	8.1	24.8	0.96
A1	22 Jan 2018	5	14.85	85.24	7.6	33.45	8.1	24.8	1.01
A1	22 Jan 2018	6	14.85	85.48	7.6	33.45	8.1	24.8	1.12
A1	22 Jan 2018	7	14.83	85.24	7.6	33.45	8.1	24.8	1.09
A1	22 Jan 2018	8	14.82	84.85	7.6	33.45	8.1	24.8	1.09
A1	22 Jan 2018	9	14.83	84.92	7.6	33.45	8.1	24.8	1.09
A1	22 Jan 2018	10	14.82	84.95	7.6	33.45	8.1	24.8	1.11
A1	22 Jan 2018	11	14.80	84.78	7.5	33.45	8.1	24.8	1.17
A1	22 Jan 2018	12	14.73	83.58	7.5	33.45	8.1	24.8	1.12
A1	22 Jan 2018	13	14.68	82.83	7.5	33.45	8.1	24.8	1.12
A1	22 Jan 2018	14	14.67	82.67	7.5	33.44	8.1	24.8	1.15
A1	22 Jan 2018	15	14.63	82.40	7.5	33.45	8.1	24.9	1.15
A1	22 Jan 2018	16	14.53	81.48	7.4	33.44	8.1	24.9	1.16
A1	22 Jan 2018	17	14.29	82.07	7.3	33.44	8.1	24.9	1.10
A1	22 Jan 2018	18	14.42	83.35	7.3	33.43	8.1	24.9	1.05
A1	29 Jan 2018	1	14.55	80.85	7.6	33.47	8.0	24.9	1.29
A1	29 Jan 2018	2	14.55	80.73	7.6	33.47	8.0	24.9	1.28
A1	29 Jan 2018	3	14.55	80.77	7.6	33.47	8.0	24.9	1.42
A1	29 Jan 2018	4	14.54	80.81	7.6	33.47	8.0	24.9	1.75
A1	29 Jan 2018	5	14.50	81.33	7.6	33.47	8.0	24.9	1.67
A1	29 Jan 2018	6	14.49	81.74	7.6	33.46	8.0	24.9	1.57
A1	29 Jan 2018	7	14.49	81.96	7.6	33.46	8.0	24.9	1.53
A1	29 Jan 2018	8	14.32	83.18	7.5	33.47	8.0	24.9	1.42
A1	29 Jan 2018	9	14.13	84.09	7.3	33.46	8.0	25.0	1.39
A1	29 Jan 2018	10	14.02	84.36	7.2	33.45	8.0	25.0	1.25
A1	29 Jan 2018	11	13.99	84.58	7.1	33.45	8.0	25.0	1.19
A1	29 Jan 2018	12	13.90	85.11	7.1	33.45	8.0	25.0	1.13
A1	29 Jan 2018	13	13.83	85.33	7.0	33.45	8.0	25.0	1.06
A1	29 Jan 2018	14	13.63	85.78	6.8	33.46	8.0	25.1	0.90
A1	29 Jan 2018	15	13.49	86.07	6.6	33.45	8.0	25.1	0.84
A1	29 Jan 2018	16	13.20	86.10	6.4	33.47	8.0	25.2	0.81
A1	29 Jan 2018	17	12.79	86.14	6.2	33.48	7.9	25.3	0.75
A1	29 Jan 2018	18	12.61	86.17	6.0	33.47	7.9	25.3	0.65
A1	29 Jan 2018	19	12.34	86.20	5.8	33.48	7.9	25.3	0.65
A1	29 Jan 2018	20	12.06	86.18	5.6	33.49	7.9	25.4	0.57
C4	03 Jan 2018	1	15.90	86.04	7.7	33.52	8.2	24.6	0.90
C4	03 Jan 2018	2	15.89	85.84	7.7	33.52	8.2	24.6	0.92

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C4	03 Jan 2018	3	15.88	86.21	7.7	33.52	8.2	24.6	1.15
C4	03 Jan 2018	4	15.87	86.03	7.7	33.52	8.2	24.6	1.25
C4	03 Jan 2018	5	15.87	85.86	7.7	33.52	8.2	24.6	1.23
C4	03 Jan 2018	6	15.86	85.82	7.7	33.52	8.2	24.6	1.22
C4	03 Jan 2018	7	15.86	85.74	7.7	33.52	8.2	24.6	1.21
C4	03 Jan 2018	8	15.86	85.66	7.7	33.52	8.2	24.6	1.28
C4	03 Jan 2018	9	15.86	85.65	7.6	33.52	8.2	24.6	1.31
C4	03 Jan 2018	10	15.87	84.91	7.6	33.52	8.2	24.6	1.06
C4	03 Jan 2018	11	15.87	83.60	7.6	33.52	8.2	24.6	0.98
C4	03 Jan 2018	12	15.87	82.92	7.6	33.52	8.2	24.6	1.00
C4	11 Jan 2018	1	16.04	51.22	7.5	33.47	8.1	24.6	0.42
C4	11 Jan 2018	2	16.04	50.41	7.5	33.47	8.1	24.6	0.44
C4	11 Jan 2018	3	16.01	50.54	7.5	33.47	8.1	24.6	0.53
C4	11 Jan 2018	4	15.99	50.33	7.4	33.47	8.1	24.6	0.56
C4	11 Jan 2018	5	15.97	52.24	7.3	33.47	8.1	24.6	0.54
C4	11 Jan 2018	6	15.96	53.09	7.3	33.47	8.1	24.6	0.55
C4	11 Jan 2018	7	15.92	54.28	7.2	33.46	8.1	24.6	0.55
C4	11 Jan 2018	8	15.84	52.63	6.9	33.46	8.1	24.6	0.54
C4	11 Jan 2018	9	15.76	52.80	6.8	33.46	8.1	24.6	0.53
C4	11 Jan 2018	10	15.70	53.60	6.7	33.46	8.1	24.6	0.54
C4	11 Jan 2018	11	15.68	50.84	6.7	33.46	8.1	24.6	0.53
C4	16 Jan 2018	1	16.11	84.36	7.9	33.43	8.2	24.5	0.66
C4	16 Jan 2018	2	16.06	84.36	7.9	33.44	8.2	24.5	0.69
C4	16 Jan 2018	3	15.88	82.92	7.8	33.44	8.2	24.6	0.80
C4	16 Jan 2018	4	15.74	80.58	7.6	33.44	8.2	24.6	0.88
C4	16 Jan 2018	5	15.66	78.10	7.5	33.44	8.1	24.6	0.97
C4	16 Jan 2018	6	15.57	75.66	7.4	33.44	8.1	24.6	1.02
C4	16 Jan 2018	7	15.39	61.46	7.1	33.45	8.1	24.7	1.16
C4	16 Jan 2018	8	15.36	54.43	7.0	33.44	8.1	24.7	1.14
C4	16 Jan 2018	9	15.31	50.43	6.8	33.44	8.1	24.7	1.12
C4	16 Jan 2018	10	15.29	40.04	6.7	33.44	8.1	24.7	1.06
C4	16 Jan 2018	11	15.28	27.24	6.7	33.44	8.1	24.7	1.03
C4	16 Jan 2018	12	15.26	17.37	6.7	33.44	8.1	24.7	1.02
C4	22 Jan 2018	1	14.57	66.82	7.8	33.46	8.1	24.9	0.38
C4	22 Jan 2018	2	14.57	66.49	7.8	33.46	8.1	24.9	0.39
C4	22 Jan 2018	3	14.57	66.29	7.8	33.46	8.1	24.9	0.40
C4	22 Jan 2018	4	14.56	66.28	7.8	33.46	8.1	24.9	0.41
C4	22 Jan 2018	5	14.53	65.94	7.6	33.47	8.1	24.9	0.40
C4	22 Jan 2018	6	14.25	67.60	7.3	33.48	8.1	25.0	0.44
C4	22 Jan 2018	7	14.07	74.00	7.1	33.45	8.1	25.0	0.51
C4	22 Jan 2018	8	13.91	78.55	7.0	33.44	8.1	25.0	0.67
C4	22 Jan 2018	9	13.77	79.97	6.9	33.43	8.1	25.0	0.76
C4	22 Jan 2018	10	13.70	77.01	6.8	33.42	8.1	25.0	0.83
C4	22 Jan 2018	11	13.75	75.74	6.8	33.41	8.1	25.0	0.75
C4	29 Jan 2018	1	14.71	80.47	7.6	33.47	8.1	24.9	0.92
C4	29 Jan 2018	2	14.71	80.53	7.6	33.47	8.1	24.9	0.89
C4	29 Jan 2018	3	14.71	80.38	7.6	33.47	8.1	24.9	0.88
C4	29 Jan 2018	4	14.65	80.36	7.6	33.47	8.1	24.9	0.95
C4	29 Jan 2018	5	14.62	80.27	7.6	33.47	8.1	24.9	1.09
C4	29 Jan 2018	6	14.56	80.51	7.6	33.47	8.1	24.9	1.23
C4	29 Jan 2018	7	14.52	81.36	7.5	33.47	8.0	24.9	1.21

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C4	29 Jan 2018	8	14.46	82.57	7.5	33.47	8.0	24.9	1.27
C4	29 Jan 2018	9	14.44	83.02	7.4	33.46	8.0	24.9	1.03
C4	29 Jan 2018	10	14.36	83.49	7.3	33.46	8.0	24.9	0.85
C4	29 Jan 2018	11	14.32	83.82	7.3	33.46	8.0	24.9	0.61
C5	03 Jan 2018	1	16.17	75.94	7.7	33.55	8.2	24.6	0.79
C5	03 Jan 2018	2	16.15	75.89	7.6	33.55	8.2	24.6	0.86
C5	03 Jan 2018	3	16.11	75.78	7.5	33.55	8.2	24.6	0.89
C5	03 Jan 2018	4	16.09	75.47	7.5	33.55	8.2	24.6	0.83
C5	03 Jan 2018	5	16.08	74.78	7.4	33.55	8.2	24.6	0.80
C5	03 Jan 2018	6	16.06	73.63	7.2	33.55	8.2	24.6	0.73
C5	03 Jan 2018	7	16.05	71.37	7.1	33.55	8.2	24.6	0.69
C5	03 Jan 2018	8	16.04	67.36	7.0	33.55	8.2	24.6	0.65
C5	03 Jan 2018	9	16.03	63.99	6.9	33.55	8.1	24.6	0.64
C5	03 Jan 2018	10	16.03	61.87	6.9	33.55	8.1	24.6	0.63
C5	03 Jan 2018	11	16.01	55.51	6.8	33.55	8.1	24.6	0.62
C5	11 Jan 2018	1	16.14	50.50	7.3	33.44	8.1	24.5	0.47
C5	11 Jan 2018	2	16.14	49.95	7.3	33.46	8.1	24.5	0.49
C5	11 Jan 2018	3	16.12	50.78	7.2	33.47	8.1	24.5	0.55
C5	11 Jan 2018	4	16.10	53.65	7.2	33.47	8.1	24.5	0.56
C5	11 Jan 2018	5	16.09	55.14	7.2	33.47	8.1	24.5	0.55
C5	11 Jan 2018	6	16.07	57.13	7.2	33.47	8.1	24.6	0.55
C5	11 Jan 2018	7	16.03	58.96	7.1	33.47	8.1	24.6	0.55
C5	11 Jan 2018	8	15.92	57.40	6.9	33.46	8.1	24.6	0.62
C5	11 Jan 2018	9	15.89	51.60	6.8	33.46	8.1	24.6	0.63
C5	11 Jan 2018	10	15.84	36.39	6.8	33.46	8.1	24.6	0.68
C5	11 Jan 2018	11	15.83	32.07	6.8	33.46	8.1	24.6	0.75
C5	16 Jan 2018	1	16.27	36.76	7.6	33.39	8.1	24.4	0.56
C5	16 Jan 2018	2	16.22	32.92	7.6	33.40	8.1	24.5	0.58
C5	16 Jan 2018	3	16.12	23.15	7.5	33.39	8.1	24.5	0.66
C5	16 Jan 2018	4	16.09	23.74	7.4	33.39	8.1	24.5	0.73
C5	16 Jan 2018	5	16.03	17.82	7.3	33.40	8.1	24.5	0.75
C5	16 Jan 2018	6	15.97	18.58	7.1	33.40	8.0	24.5	0.75
C5	16 Jan 2018	7	15.90	23.27	6.9	33.40	8.0	24.5	0.72
C5	16 Jan 2018	8	15.83	28.54	6.8	33.41	8.0	24.6	0.69
C5	16 Jan 2018	9	15.76	30.38	6.7	33.41	8.1	24.6	0.67
C5	16 Jan 2018	10	15.65	24.65	6.6	33.42	8.1	24.6	0.72
C5	16 Jan 2018	11	15.61	22.08	6.6	33.42	8.1	24.6	0.75
C5	22 Jan 2018	1	14.73	79.21	7.5	33.45	8.1	24.8	0.33
C5	22 Jan 2018	2	14.73	78.54	7.5	33.45	8.1	24.8	0.36
C5	22 Jan 2018	3	14.72	78.58	7.4	33.45	8.1	24.8	0.44
C5	22 Jan 2018	4	14.71	78.66	7.4	33.45	8.1	24.8	0.48
C5	22 Jan 2018	5	14.70	78.42	7.4	33.45	8.1	24.8	0.50
C5	22 Jan 2018	6	14.67	76.05	7.3	33.45	8.1	24.9	0.50
C5	22 Jan 2018	7	14.60	75.94	7.2	33.45	8.1	24.9	0.47
C5	22 Jan 2018	8	14.54	76.61	7.1	33.45	8.1	24.9	0.44
C5	22 Jan 2018	9	14.46	76.01	6.9	33.45	8.1	24.9	0.41
C5	22 Jan 2018	10	14.40	71.66	6.8	33.44	8.1	24.9	0.41
C5	22 Jan 2018	11	14.27	67.18	6.8	33.45	8.1	24.9	0.43
C5	29 Jan 2018	1	14.60	81.12	7.8	33.47	8.1	24.9	1.05
C5	29 Jan 2018	2	14.61	81.09	7.8	33.46	8.1	24.9	1.05

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C5	29 Jan 2018	3	14.59	81.07	7.8	33.46	8.1	24.9	0.98
C5	29 Jan 2018	4	14.58	81.07	7.8	33.46	8.1	24.9	1.06
C5	29 Jan 2018	5	14.57	80.76	7.8	33.46	8.1	24.9	1.23
C5	29 Jan 2018	6	14.56	80.63	7.8	33.46	8.1	24.9	1.51
C5	29 Jan 2018	7	14.55	80.76	7.8	33.46	8.1	24.9	1.71
C5	29 Jan 2018	8	14.55	81.06	7.8	33.46	8.1	24.9	1.76
C5	29 Jan 2018	9	14.54	81.31	7.8	33.46	8.1	24.9	1.55
C5	29 Jan 2018	10	14.54	81.51	7.8	33.46	8.1	24.9	1.42
C5	29 Jan 2018	11	14.54	81.60	7.8	33.46	8.1	24.9	1.38
A6	03 Jan 2018	1	15.89	85.75	7.8	33.52	8.2	24.6	1.76
A6	03 Jan 2018	2	15.88	85.32	7.8	33.52	8.2	24.6	1.70
A6	03 Jan 2018	3	15.88	85.63	7.8	33.52	8.2	24.6	1.70
A6	03 Jan 2018	4	15.88	85.41	7.8	33.52	8.2	24.6	1.83
A6	03 Jan 2018	5	15.88	85.48	7.8	33.52	8.2	24.6	1.72
A6	03 Jan 2018	6	15.88	85.66	7.8	33.52	8.2	24.6	1.88
A6	03 Jan 2018	7	15.87	85.66	7.8	33.52	8.2	24.6	1.68
A6	03 Jan 2018	8	15.88	85.63	7.8	33.52	8.2	24.6	1.80
A6	03 Jan 2018	9	15.88	85.62	7.8	33.52	8.2	24.6	1.85
A6	03 Jan 2018	10	15.87	85.86	7.7	33.52	8.2	24.6	1.62
A6	03 Jan 2018	11	15.84	86.11	7.6	33.52	8.2	24.6	1.58
A6	03 Jan 2018	12	15.84	86.08	7.6	33.52	8.2	24.6	1.61
A6	03 Jan 2018	13	15.82	85.91	7.6	33.52	8.2	24.6	1.72
A6	03 Jan 2018	14	15.80	85.88	7.6	33.52	8.2	24.7	1.81
A6	03 Jan 2018	15	15.77	85.81	7.5	33.52	8.2	24.7	1.77
A6	03 Jan 2018	16	15.73	85.70	7.5	33.51	8.2	24.7	1.46
A6	03 Jan 2018	17	15.71	86.01	7.4	33.51	8.2	24.7	1.35
A6	03 Jan 2018	18	15.64	86.22	7.3	33.51	8.2	24.7	1.29
A6	11 Jan 2018	1	16.02	75.01	7.3	33.45	8.1	24.6	0.56
A6	11 Jan 2018	2	16.02	75.63	7.3	33.45	8.1	24.6	0.60
A6	11 Jan 2018	3	16.02	75.56	7.3	33.45	8.1	24.6	0.66
A6	11 Jan 2018	4	16.01	75.42	7.3	33.45	8.1	24.6	0.72
A6	11 Jan 2018	5	15.99	74.77	7.2	33.45	8.1	24.6	0.75
A6	11 Jan 2018	6	15.98	74.80	7.3	33.45	8.1	24.6	0.75
A6	11 Jan 2018	7	15.95	74.82	7.3	33.45	8.1	24.6	0.75
A6	11 Jan 2018	8	15.93	74.58	7.2	33.46	8.1	24.6	0.73
A6	11 Jan 2018	9	15.89	74.37	7.2	33.46	8.1	24.6	0.71
A6	11 Jan 2018	10	15.85	74.41	7.2	33.46	8.1	24.6	0.64
A6	11 Jan 2018	11	15.79	74.69	7.2	33.46	8.1	24.6	0.66
A6	11 Jan 2018	12	15.77	74.97	7.2	33.45	8.1	24.6	0.68
A6	11 Jan 2018	13	15.76	75.24	7.2	33.45	8.1	24.6	0.68
A6	11 Jan 2018	14	15.70	74.57	7.2	33.46	8.1	24.6	0.66
A6	11 Jan 2018	15	15.66	73.95	7.1	33.46	8.1	24.6	0.62
A6	11 Jan 2018	16	15.61	70.92	7.1	33.45	8.1	24.6	0.59
A6	11 Jan 2018	17	15.62	69.60	7.1	33.45	8.1	24.6	0.57
A6	11 Jan 2018	18	15.58	68.08	7.0	33.45	8.1	24.7	0.58
A6	16 Jan 2018	1	16.01	77.33	7.4	33.41	8.1	24.5	0.75
A6	16 Jan 2018	2	16.00	75.53	7.4	33.42	8.1	24.5	0.79
A6	16 Jan 2018	3	15.97	78.43	7.3	33.42	8.1	24.5	0.82
A6	16 Jan 2018	4	15.90	78.87	7.3	33.42	8.1	24.6	0.84
A6	16 Jan 2018	5	15.84	79.23	7.3	33.43	8.1	24.6	0.88
A6	16 Jan 2018	6	15.78	79.37	7.3	33.43	8.1	24.6	0.88
A6	16 Jan 2018	7	15.83	79.42	7.3	33.42	8.1	24.6	0.86

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A6	16 Jan 2018	8	15.81	79.31	7.3	33.43	8.1	24.6	0.85
A6	16 Jan 2018	9	15.64	79.46	7.3	33.43	8.1	24.6	0.86
A6	16 Jan 2018	10	15.63	79.92	7.2	33.43	8.1	24.6	0.84
A6	16 Jan 2018	11	15.57	79.71	7.1	33.43	8.1	24.6	0.82
A6	16 Jan 2018	12	15.34	77.89	7.0	33.43	8.1	24.7	0.78
A6	16 Jan 2018	13	15.14	75.58	6.9	33.44	8.1	24.7	0.77
A6	16 Jan 2018	14	15.08	71.76	6.8	33.43	8.1	24.7	0.77
A6	16 Jan 2018	15	15.10	72.48	6.9	33.43	8.1	24.7	0.77
A6	16 Jan 2018	16	15.07	71.13	6.9	33.43	8.1	24.7	0.77
A6	16 Jan 2018	17	15.02	70.56	6.8	33.43	8.1	24.8	0.76
A6	16 Jan 2018	18	14.99	69.69	6.8	33.44	8.1	24.8	0.77
A6	22 Jan 2018	1	15.02	81.39	7.7	33.45	8.2	24.8	0.85
A6	22 Jan 2018	2	15.02	81.32	7.7	33.45	8.2	24.8	0.84
A6	22 Jan 2018	3	15.03	81.10	7.7	33.45	8.2	24.8	0.93
A6	22 Jan 2018	4	15.03	81.22	7.7	33.45	8.2	24.8	1.03
A6	22 Jan 2018	5	15.03	81.28	7.7	33.45	8.2	24.8	1.10
A6	22 Jan 2018	6	15.02	81.19	7.7	33.45	8.2	24.8	1.20
A6	22 Jan 2018	7	15.00	81.07	7.6	33.45	8.2	24.8	1.18
A6	22 Jan 2018	8	14.94	81.05	7.6	33.45	8.2	24.8	1.18
A6	22 Jan 2018	9	14.91	81.06	7.6	33.45	8.1	24.8	1.09
A6	22 Jan 2018	10	14.91	81.02	7.5	33.45	8.1	24.8	1.11
A6	22 Jan 2018	11	14.92	80.98	7.5	33.45	8.1	24.8	1.11
A6	22 Jan 2018	12	14.91	81.11	7.6	33.45	8.2	24.8	1.12
A6	22 Jan 2018	13	14.90	81.13	7.6	33.45	8.1	24.8	1.07
A6	22 Jan 2018	14	14.89	81.22	7.5	33.45	8.1	24.8	1.10
A6	22 Jan 2018	15	14.76	81.05	7.4	33.45	8.1	24.8	0.98
A6	22 Jan 2018	16	14.73	81.00	7.4	33.45	8.1	24.8	0.96
A6	22 Jan 2018	17	14.72	81.04	7.4	33.45	8.1	24.8	0.91
A6	22 Jan 2018	18	14.72	80.96	7.4	33.45	8.1	24.8	0.90
A6	29 Jan 2018	1	14.78	82.08	8.5	33.45	8.1	24.8	1.11
A6	29 Jan 2018	2	14.78	81.97	8.5	33.45	8.1	24.8	1.07
A6	29 Jan 2018	3	14.77	81.94	8.5	33.45	8.1	24.8	1.13
A6	29 Jan 2018	4	14.71	82.02	8.3	33.46	8.1	24.8	1.32
A6	29 Jan 2018	5	14.65	81.89	8.2	33.46	8.1	24.9	1.50
A6	29 Jan 2018	6	14.59	82.40	8.1	33.46	8.1	24.9	1.74
A6	29 Jan 2018	7	14.60	82.35	8.0	33.45	8.1	24.9	1.71
A6	29 Jan 2018	8	14.58	82.42	8.0	33.46	8.1	24.9	1.60
A6	29 Jan 2018	9	14.55	82.47	7.9	33.46	8.1	24.9	1.64
A6	29 Jan 2018	10	14.48	82.23	7.8	33.46	8.1	24.9	1.61
A6	29 Jan 2018	11	14.43	82.44	7.7	33.46	8.0	24.9	1.49
A6	29 Jan 2018	12	14.39	82.45	7.7	33.46	8.0	24.9	1.52
A6	29 Jan 2018	13	14.39	82.54	7.6	33.46	8.0	24.9	1.56
A6	29 Jan 2018	14	14.39	82.58	7.5	33.46	8.0	24.9	1.49
A6	29 Jan 2018	15	14.04	82.84	7.3	33.47	8.0	25.0	1.40
A6	29 Jan 2018	16	13.99	83.41	7.2	33.46	8.0	25.0	1.27
A6	29 Jan 2018	17	13.80	83.65	7.0	33.47	8.0	25.0	1.20
A6	29 Jan 2018	18	13.53	83.97	6.8	33.47	8.0	25.1	1.06
A6	29 Jan 2018	19	12.95	84.98	6.3	33.48	8.0	25.2	0.84
C6	03 Jan 2018	1	16.02	83.57	7.7	33.53	8.2	24.6	0.86
C6	03 Jan 2018	2	16.01	83.73	7.7	33.53	8.2	24.6	0.93
C6	03 Jan 2018	3	15.99	83.66	7.7	33.53	8.2	24.6	1.05
C6	03 Jan 2018	4	15.98	83.59	7.7	33.53	8.2	24.6	1.07

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C6	03 Jan 2018	5	15.97	83.72	7.7	33.53	8.2	24.6	1.02
C6	03 Jan 2018	6	15.96	83.91	7.6	33.53	8.2	24.6	0.98
C6	03 Jan 2018	7	15.95	84.15	7.5	33.52	8.2	24.6	0.89
C6	03 Jan 2018	8	15.88	84.29	7.3	33.52	8.2	24.6	0.72
C6	03 Jan 2018	9	15.82	84.36	7.2	33.52	8.2	24.6	0.62
C6	03 Jan 2018	10	15.82	83.87	7.1	33.52	8.1	24.6	0.55
C6	11 Jan 2018	1	16.05	67.79	7.4	33.46	8.1	24.6	0.35
C6	11 Jan 2018	2	16.04	67.20	7.3	33.47	8.1	24.6	0.37
C6	11 Jan 2018	3	16.00	67.41	7.2	33.46	8.1	24.6	0.45
C6	11 Jan 2018	4	15.99	67.97	7.2	33.46	8.1	24.6	0.49
C6	11 Jan 2018	5	15.97	68.44	7.1	33.46	8.1	24.6	0.52
C6	11 Jan 2018	6	15.97	68.83	7.1	33.46	8.1	24.6	0.53
C6	11 Jan 2018	7	15.97	67.90	7.0	33.46	8.1	24.6	0.53
C6	11 Jan 2018	8	15.97	67.32	7.1	33.46	8.1	24.6	0.52
C6	11 Jan 2018	9	15.97	67.18	7.1	33.46	8.1	24.6	0.54
C6	11 Jan 2018	10	15.97	65.07	7.0	33.46	8.1	24.6	0.53
C6	16 Jan 2018	1	16.28	75.41	7.6	33.41	8.1	24.5	0.58
C6	16 Jan 2018	2	16.24	74.66	7.6	33.42	8.1	24.5	0.59
C6	16 Jan 2018	3	16.18	71.62	7.6	33.42	8.1	24.5	0.67
C6	16 Jan 2018	4	16.14	67.56	7.6	33.42	8.1	24.5	0.77
C6	16 Jan 2018	5	16.10	65.48	7.5	33.42	8.1	24.5	0.79
C6	16 Jan 2018	6	16.00	65.61	7.4	33.43	8.1	24.5	0.74
C6	16 Jan 2018	7	15.84	63.54	7.2	33.44	8.1	24.6	0.70
C6	16 Jan 2018	8	15.83	59.61	7.2	33.43	8.1	24.6	0.69
C6	16 Jan 2018	9	15.79	57.48	7.1	33.44	8.1	24.6	0.69
C6	16 Jan 2018	10	15.78	57.49	7.1	33.43	8.1	24.6	0.73
C6	22 Jan 2018	1	14.76	78.70	5.9	33.42	8.1	24.8	0.49
C6	22 Jan 2018	2	14.77	78.25	7.0	33.44	8.1	24.8	0.61
C6	22 Jan 2018	3	14.77	78.32	7.2	33.45	8.1	24.8	0.48
C6	22 Jan 2018	4	14.74	78.72	7.3	33.46	8.1	24.8	0.44
C6	22 Jan 2018	5	14.65	77.74	7.2	33.47	8.1	24.9	0.46
C6	22 Jan 2018	6	14.53	74.87	7.0	33.51	8.1	24.9	0.42
C6	22 Jan 2018	7	14.39	73.50	6.9	33.57	8.1	25.0	0.44
C6	22 Jan 2018	8	14.23	73.28	6.8	33.59	8.1	25.1	0.46
C6	22 Jan 2018	9	13.84	73.03	6.5	33.71	8.1	25.2	0.48
C6	22 Jan 2018	10	13.80	72.80	6.3	33.57	8.1	25.1	0.46
C6	29 Jan 2018	1	14.83	76.46	7.7	33.47	8.0	24.8	0.42
C6	29 Jan 2018	2	14.86	76.43	7.7	33.47	8.1	24.8	0.38
C6	29 Jan 2018	3	14.84	76.73	7.7	33.47	8.1	24.8	0.41
C6	29 Jan 2018	4	14.83	77.12	7.6	33.47	8.0	24.8	0.43
C6	29 Jan 2018	5	14.81	77.57	7.7	33.47	8.0	24.8	0.44
C6	29 Jan 2018	6	14.61	78.74	7.5	33.48	8.0	24.9	0.48
C6	29 Jan 2018	7	14.30	81.87	7.3	33.46	8.0	24.9	0.57
C6	29 Jan 2018	8	14.13	82.80	7.1	33.45	8.0	25.0	0.60
C6	29 Jan 2018	9	14.02	84.58	7.0	33.45	8.0	25.0	0.51
C6	29 Jan 2018	10	14.00	84.62	6.9	33.45	8.0	25.0	0.41
A7	03 Jan 2018	1	15.82	86.31	7.7	33.52	8.2	24.6	1.16
A7	03 Jan 2018	2	15.83	86.22	7.7	33.52	8.2	24.6	1.28
A7	03 Jan 2018	3	15.83	85.92	7.7	33.52	8.2	24.6	1.43
A7	03 Jan 2018	4	15.83	85.87	7.7	33.52	8.2	24.6	1.39

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A7	03 Jan 2018	5	15.83	85.93	7.7	33.52	8.2	24.6	1.46
A7	03 Jan 2018	6	15.83	85.89	7.6	33.52	8.2	24.6	1.49
A7	03 Jan 2018	7	15.83	85.90	7.6	33.52	8.2	24.6	1.54
A7	03 Jan 2018	8	15.83	85.94	7.6	33.52	8.2	24.6	1.55
A7	03 Jan 2018	9	15.83	85.79	7.6	33.52	8.2	24.6	1.60
A7	03 Jan 2018	10	15.83	85.89	7.6	33.52	8.2	24.6	1.54
A7	03 Jan 2018	11	15.83	85.78	7.6	33.52	8.2	24.6	1.52
A7	03 Jan 2018	12	15.83	85.77	7.6	33.52	8.2	24.6	1.51
A7	03 Jan 2018	13	15.82	85.79	7.6	33.52	8.2	24.6	1.51
A7	03 Jan 2018	14	15.82	85.72	7.6	33.52	8.2	24.7	1.46
A7	03 Jan 2018	15	15.80	85.68	7.6	33.52	8.2	24.7	1.36
A7	03 Jan 2018	16	15.75	85.65	7.5	33.52	8.2	24.7	1.33
A7	03 Jan 2018	17	15.74	85.87	7.4	33.52	8.2	24.7	1.23
A7	03 Jan 2018	18	15.72	85.93	7.4	33.52	8.2	24.7	1.16
A7	03 Jan 2018	19	15.71	86.04	7.4	33.52	8.2	24.7	1.10
A7	03 Jan 2018	20	15.60	85.81	7.2	33.52	8.2	24.7	1.06
A7	03 Jan 2018	21	15.22	85.78	7.1	33.50	8.1	24.8	0.93
A7	11 Jan 2018	1	15.95	75.04	7.3	33.46	8.1	24.6	0.59
A7	11 Jan 2018	2	15.95	75.49	7.3	33.46	8.1	24.6	0.58
A7	11 Jan 2018	3	15.91	75.75	7.3	33.46	8.1	24.6	0.61
A7	11 Jan 2018	4	15.88	76.45	7.3	33.46	8.1	24.6	0.74
A7	11 Jan 2018	5	15.84	76.80	7.3	33.46	8.1	24.6	0.81
A7	11 Jan 2018	6	15.82	77.49	7.3	33.46	8.1	24.6	0.86
A7	11 Jan 2018	7	15.79	77.80	7.2	33.46	8.1	24.6	0.82
A7	11 Jan 2018	8	15.79	77.59	7.2	33.46	8.1	24.6	0.83
A7	11 Jan 2018	9	15.79	77.76	7.2	33.46	8.1	24.6	0.81
A7	11 Jan 2018	10	15.68	77.59	7.2	33.47	8.1	24.6	0.86
A7	11 Jan 2018	11	15.59	77.66	7.1	33.46	8.1	24.7	0.78
A7	11 Jan 2018	12	15.56	77.42	7.1	33.46	8.1	24.7	0.70
A7	11 Jan 2018	13	15.52	77.42	7.1	33.46	8.1	24.7	0.65
A7	11 Jan 2018	14	15.51	77.47	7.1	33.46	8.1	24.7	0.60
A7	11 Jan 2018	15	15.50	76.66	7.1	33.46	8.1	24.7	0.59
A7	11 Jan 2018	16	15.49	76.47	7.1	33.46	8.1	24.7	0.59
A7	11 Jan 2018	17	15.50	76.78	7.1	33.46	8.1	24.7	0.62
A7	11 Jan 2018	18	15.50	76.90	7.1	33.46	8.1	24.7	0.60
A7	11 Jan 2018	19	15.46	76.56	7.0	33.46	8.1	24.7	0.60
A7	11 Jan 2018	20	15.38	74.95	6.9	33.46	8.1	24.7	0.63
A7	16 Jan 2018	1	15.78	70.38	7.1	33.41	8.1	24.6	0.70
A7	16 Jan 2018	2	15.78	72.09	7.1	33.41	8.1	24.6	0.80
A7	16 Jan 2018	3	15.78	70.53	7.0	33.41	8.1	24.6	0.81
A7	16 Jan 2018	4	15.79	71.55	7.1	33.41	8.1	24.6	0.82
A7	16 Jan 2018	5	15.79	73.42	7.0	33.41	8.1	24.6	0.87
A7	16 Jan 2018	6	15.76	72.73	7.1	33.42	8.1	24.6	0.96
A7	16 Jan 2018	7	15.77	73.63	7.1	33.41	8.1	24.6	0.94
A7	16 Jan 2018	8	15.75	72.92	7.1	33.42	8.1	24.6	0.98
A7	16 Jan 2018	9	15.74	73.12	7.1	33.42	8.1	24.6	1.03
A7	16 Jan 2018	10	15.65	73.44	7.1	33.42	8.1	24.6	1.06
A7	16 Jan 2018	11	15.64	74.37	7.0	33.42	8.1	24.6	1.03
A7	16 Jan 2018	12	15.62	74.15	7.0	33.42	8.1	24.6	1.09
A7	16 Jan 2018	13	15.56	75.07	7.0	33.42	8.1	24.6	1.11
A7	16 Jan 2018	14	15.43	74.81	6.9	33.43	8.1	24.7	1.10
A7	16 Jan 2018	15	15.05	74.40	6.7	33.44	8.1	24.8	0.95
A7	16 Jan 2018	16	14.89	73.19	6.7	33.44	8.1	24.8	0.89

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A7	16 Jan 2018	17	14.77	70.48	6.6	33.43	8.1	24.8	0.87
A7	16 Jan 2018	18	14.83	71.00	6.7	33.43	8.1	24.8	0.86
A7	16 Jan 2018	19	14.75	70.46	6.6	33.44	8.1	24.8	0.86
A7	16 Jan 2018	20	14.55	68.26	6.6	33.44	8.1	24.9	0.88
A7	22 Jan 2018	1	15.10	84.37	7.8	33.45	8.2	24.8	0.90
A7	22 Jan 2018	2	15.09	83.92	7.8	33.45	8.2	24.8	0.98
A7	22 Jan 2018	3	15.09	84.53	7.8	33.45	8.2	24.8	0.99
A7	22 Jan 2018	4	15.08	84.70	7.7	33.45	8.2	24.8	0.97
A7	22 Jan 2018	5	15.08	84.48	7.7	33.45	8.2	24.8	1.02
A7	22 Jan 2018	6	15.07	84.65	7.7	33.45	8.2	24.8	1.07
A7	22 Jan 2018	7	15.03	84.57	7.7	33.45	8.2	24.8	1.10
A7	22 Jan 2018	8	15.02	84.29	7.6	33.45	8.2	24.8	1.16
A7	22 Jan 2018	9	14.99	84.32	7.6	33.45	8.2	24.8	1.14
A7	22 Jan 2018	10	14.93	84.17	7.6	33.45	8.1	24.8	1.13
A7	22 Jan 2018	11	14.91	83.92	7.6	33.45	8.1	24.8	1.14
A7	22 Jan 2018	12	14.88	83.83	7.6	33.44	8.1	24.8	1.17
A7	22 Jan 2018	13	14.87	83.82	7.6	33.44	8.1	24.8	1.15
A7	22 Jan 2018	14	14.77	83.48	7.5	33.44	8.1	24.8	1.09
A7	22 Jan 2018	15	14.68	83.15	7.4	33.44	8.1	24.8	1.09
A7	22 Jan 2018	16	14.57	83.15	7.4	33.44	8.1	24.9	1.02
A7	22 Jan 2018	17	14.50	83.05	7.3	33.44	8.1	24.9	0.90
A7	22 Jan 2018	18	14.30	82.41	7.2	33.44	8.1	24.9	0.84
A7	22 Jan 2018	19	14.01	83.77	7.1	33.43	8.1	25.0	0.76
A7	22 Jan 2018	20	13.86	83.96	7.0	33.42	8.1	25.0	0.74
A7	29 Jan 2018	1	14.64	81.23	7.8	33.46	8.0	24.9	1.30
A7	29 Jan 2018	2	14.64	81.10	7.8	33.46	8.0	24.9	1.23
A7	29 Jan 2018	3	14.64	81.25	7.8	33.46	8.0	24.9	1.28
A7	29 Jan 2018	4	14.63	81.26	7.8	33.46	8.0	24.9	1.45
A7	29 Jan 2018	5	14.62	81.08	7.8	33.46	8.0	24.9	1.62
A7	29 Jan 2018	6	14.58	80.99	7.7	33.47	8.0	24.9	1.72
A7	29 Jan 2018	7	14.54	81.34	7.6	33.46	8.0	24.9	1.73
A7	29 Jan 2018	8	14.50	81.63	7.6	33.46	8.0	24.9	1.79
A7	29 Jan 2018	9	14.43	82.11	7.5	33.46	8.0	24.9	1.69
A7	29 Jan 2018	10	14.37	82.54	7.4	33.46	8.0	24.9	1.53
A7	29 Jan 2018	11	14.26	82.90	7.3	33.46	8.0	24.9	1.43
A7	29 Jan 2018	12	14.20	83.34	7.2	33.46	8.0	25.0	1.27
A7	29 Jan 2018	13	14.10	83.34	7.1	33.46	8.0	25.0	1.13
A7	29 Jan 2018	14	13.95	83.61	7.0	33.47	8.0	25.0	1.13
A7	29 Jan 2018	15	13.82	83.78	6.9	33.46	8.0	25.0	1.17
A7	29 Jan 2018	16	13.56	84.09	6.7	33.47	8.0	25.1	1.03
A7	29 Jan 2018	17	13.28	84.45	6.5	33.48	8.0	25.2	0.91
A7	29 Jan 2018	18	12.89	85.10	6.2	33.46	7.9	25.2	0.82
A7	29 Jan 2018	19	12.69	85.34	6.0	33.47	7.9	25.3	0.76
A7	29 Jan 2018	20	12.52	85.25	5.8	33.48	7.9	25.3	0.61
C7	03 Jan 2018	1	16.04	86.54	7.7	33.51	8.2	24.6	1.05
C7	03 Jan 2018	2	16.03	86.42	7.7	33.51	8.2	24.6	1.13
C7	03 Jan 2018	3	16.00	86.48	7.8	33.51	8.2	24.6	1.28
C7	03 Jan 2018	4	15.97	86.15	7.8	33.51	8.2	24.6	1.47
C7	03 Jan 2018	5	15.93	86.16	7.7	33.51	8.2	24.6	1.62
C7	03 Jan 2018	6	15.88	86.02	7.7	33.51	8.2	24.6	1.58
C7	03 Jan 2018	7	15.86	85.89	7.7	33.51	8.2	24.6	1.63
C7	03 Jan 2018	8	15.84	86.10	7.7	33.51	8.2	24.6	1.68

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C7	03 Jan 2018	9	15.78	86.12	7.6	33.51	8.2	24.6	1.92
C7	03 Jan 2018	10	15.71	86.14	7.5	33.50	8.2	24.7	1.71
C7	03 Jan 2018	11	15.69	85.63	7.5	33.50	8.2	24.7	1.62
C7	03 Jan 2018	12	15.66	85.66	7.5	33.50	8.2	24.7	1.65
C7	03 Jan 2018	13	15.64	85.41	7.5	33.50	8.2	24.7	1.70
C7	03 Jan 2018	14	15.63	85.57	7.4	33.50	8.2	24.7	1.70
C7	03 Jan 2018	15	15.61	85.47	7.5	33.50	8.2	24.7	1.72
C7	03 Jan 2018	16	15.60	85.53	7.5	33.50	8.2	24.7	1.68
C7	03 Jan 2018	17	15.58	85.43	7.4	33.50	8.2	24.7	1.77
C7	03 Jan 2018	18	15.56	85.66	7.4	33.50	8.2	24.7	1.89
C7	03 Jan 2018	19	15.49	85.57	7.3	33.49	8.2	24.7	1.50
C7	03 Jan 2018	20	15.47	85.74	7.3	33.49	8.1	24.7	1.29
C7	11 Jan 2018	1	16.12	64.80	7.6	33.30	8.1	24.4	0.63
C7	11 Jan 2018	2	16.12	64.64	7.6	33.30	8.1	24.4	0.68
C7	11 Jan 2018	3	16.25	67.58	7.6	33.34	8.1	24.4	0.76
C7	11 Jan 2018	4	16.38	72.99	7.5	33.41	8.1	24.4	0.78
C7	11 Jan 2018	5	16.39	74.24	7.4	33.44	8.1	24.5	0.74
C7	11 Jan 2018	6	16.36	73.62	7.4	33.44	8.1	24.5	0.71
C7	11 Jan 2018	7	16.29	71.94	7.3	33.45	8.1	24.5	0.68
C7	11 Jan 2018	8	16.17	70.94	7.3	33.45	8.1	24.5	0.64
C7	11 Jan 2018	9	16.01	68.06	7.2	33.45	8.1	24.6	0.64
C7	11 Jan 2018	10	15.95	66.64	7.2	33.45	8.1	24.6	0.65
C7	11 Jan 2018	11	15.87	67.77	7.2	33.45	8.1	24.6	0.64
C7	11 Jan 2018	12	15.85	70.43	7.2	33.45	8.1	24.6	0.65
C7	11 Jan 2018	13	15.82	73.18	7.2	33.45	8.1	24.6	0.65
C7	11 Jan 2018	14	15.83	74.72	7.2	33.45	8.1	24.6	0.64
C7	11 Jan 2018	15	15.80	74.27	7.2	33.45	8.1	24.6	0.65
C7	11 Jan 2018	16	15.77	74.19	7.2	33.45	8.1	24.6	0.71
C7	11 Jan 2018	17	15.71	73.41	7.2	33.45	8.1	24.6	0.67
C7	11 Jan 2018	18	15.49	68.75	7.1	33.46	8.1	24.7	0.68
C7	16 Jan 2018	1	16.17	80.84	7.8	33.43	8.2	24.5	0.81
C7	16 Jan 2018	2	16.16	79.69	7.8	33.43	8.2	24.5	0.82
C7	16 Jan 2018	3	16.12	80.16	7.8	33.43	8.2	24.5	0.92
C7	16 Jan 2018	4	15.92	83.92	7.6	33.45	8.2	24.6	0.95
C7	16 Jan 2018	5	15.82	84.74	7.6	33.45	8.2	24.6	0.96
C7	16 Jan 2018	6	15.72	84.83	7.5	33.45	8.1	24.6	0.98
C7	16 Jan 2018	7	15.58	84.37	7.5	33.45	8.1	24.7	1.02
C7	16 Jan 2018	8	15.50	83.61	7.4	33.45	8.1	24.7	1.04
C7	16 Jan 2018	9	15.39	82.82	7.4	33.45	8.1	24.7	1.03
C7	16 Jan 2018	10	15.37	82.91	7.4	33.45	8.1	24.7	1.08
C7	16 Jan 2018	11	15.35	83.05	7.3	33.45	8.1	24.7	1.08
C7	16 Jan 2018	12	15.23	83.05	7.2	33.45	8.1	24.7	1.05
C7	16 Jan 2018	13	15.07	81.03	7.1	33.45	8.1	24.8	0.94
C7	16 Jan 2018	14	14.84	80.06	7.0	33.45	8.1	24.8	0.91
C7	16 Jan 2018	15	14.73	78.44	7.0	33.44	8.1	24.8	0.85
C7	16 Jan 2018	16	14.62	75.48	6.9	33.44	8.1	24.9	0.84
C7	16 Jan 2018	17	14.56	73.24	6.8	33.44	8.1	24.9	0.82
C7	16 Jan 2018	18	14.38	68.58	6.7	33.44	8.1	24.9	0.82
C7	16 Jan 2018	19	14.25	57.73	6.7	33.43	8.1	24.9	0.92
C7	22 Jan 2018	1	14.97	79.44	7.2	33.43	8.1	24.8	1.11
C7	22 Jan 2018	2	14.97	78.06	7.4	33.44	8.1	24.8	0.96
C7	22 Jan 2018	3	14.97	79.12	7.4	33.44	8.1	24.8	0.92

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C7	22 Jan 2018	4	14.97	79.48	7.4	33.45	8.1	24.8	0.90
C7	22 Jan 2018	5	14.97	79.50	7.5	33.45	8.1	24.8	0.95
C7	22 Jan 2018	6	14.98	79.30	7.5	33.45	8.1	24.8	1.07
C7	22 Jan 2018	7	14.98	79.23	7.5	33.45	8.1	24.8	1.08
C7	22 Jan 2018	8	14.97	79.16	7.5	33.45	8.1	24.8	1.17
C7	22 Jan 2018	9	14.97	79.14	7.5	33.45	8.1	24.8	1.22
C7	22 Jan 2018	10	14.96	79.17	7.5	33.45	8.1	24.8	1.22
C7	22 Jan 2018	11	14.94	79.08	7.5	33.45	8.1	24.8	1.28
C7	22 Jan 2018	12	14.93	78.98	7.4	33.45	8.1	24.8	1.24
C7	22 Jan 2018	13	14.88	78.99	7.4	33.45	8.1	24.8	1.16
C7	22 Jan 2018	14	14.83	78.68	7.4	33.45	8.1	24.8	1.10
C7	22 Jan 2018	15	14.76	78.37	7.3	33.45	8.1	24.8	1.06
C7	22 Jan 2018	16	14.63	78.08	7.2	33.45	8.1	24.9	0.96
C7	22 Jan 2018	17	14.35	78.04	7.0	33.47	8.1	24.9	0.90
C7	22 Jan 2018	18	13.98	76.30	6.9	33.45	8.1	25.0	0.80
C7	29 Jan 2018	1	14.73	82.23	8.4	33.46	8.1	24.8	0.96
C7	29 Jan 2018	2	14.72	82.09	8.4	33.46	8.1	24.8	1.08
C7	29 Jan 2018	3	14.71	81.66	8.4	33.46	8.1	24.8	1.21
C7	29 Jan 2018	4	14.71	81.57	8.4	33.46	8.1	24.8	1.43
C7	29 Jan 2018	5	14.71	81.66	8.4	33.46	8.1	24.8	1.64
C7	29 Jan 2018	6	14.70	81.52	8.4	33.46	8.1	24.8	1.82
C7	29 Jan 2018	7	14.69	81.66	8.4	33.46	8.1	24.8	2.02
C7	29 Jan 2018	8	14.65	81.85	8.2	33.46	8.1	24.9	1.88
C7	29 Jan 2018	9	14.51	82.67	8.0	33.46	8.1	24.9	1.75
C7	29 Jan 2018	10	14.42	83.11	7.8	33.45	8.1	24.9	1.47
C7	29 Jan 2018	11	14.39	83.40	7.8	33.45	8.1	24.9	1.38
C7	29 Jan 2018	12	14.31	83.31	7.6	33.45	8.1	24.9	1.34
C7	29 Jan 2018	13	14.20	83.47	7.4	33.45	8.0	25.0	1.24
C7	29 Jan 2018	14	13.91	83.77	7.0	33.46	8.0	25.0	0.90
C7	29 Jan 2018	15	13.03	84.70	6.3	33.48	8.0	25.2	0.63
C7	29 Jan 2018	16	12.49	84.70	6.0	33.47	7.9	25.3	0.61
C7	29 Jan 2018	17	12.38	84.81	5.9	33.45	7.9	25.3	0.59
C7	29 Jan 2018	18	12.30	84.77	5.8	33.46	7.9	25.3	0.54
C7	29 Jan 2018	19	12.28	84.94	5.8	33.46	7.9	25.3	0.52
C8	03 Jan 2018	1	16.01	87.04	7.8	33.51	8.2	24.6	1.26
C8	03 Jan 2018	2	16.01	86.85	7.8	33.51	8.2	24.6	1.21
C8	03 Jan 2018	3	15.99	86.77	7.7	33.51	8.2	24.6	1.27
C8	03 Jan 2018	4	15.98	86.58	7.8	33.51	8.2	24.6	1.35
C8	03 Jan 2018	5	15.98	85.79	7.7	33.51	8.2	24.6	1.32
C8	03 Jan 2018	6	15.97	86.18	7.7	33.51	8.2	24.6	1.33
C8	03 Jan 2018	7	15.95	85.99	7.8	33.51	8.2	24.6	1.40
C8	03 Jan 2018	8	15.95	86.04	7.8	33.51	8.2	24.6	1.48
C8	03 Jan 2018	9	15.84	85.35	7.7	33.51	8.2	24.6	1.87
C8	03 Jan 2018	10	15.79	85.10	7.7	33.51	8.2	24.6	1.82
C8	03 Jan 2018	11	15.74	85.46	7.6	33.51	8.2	24.7	1.88
C8	03 Jan 2018	12	15.72	85.18	7.6	33.50	8.2	24.7	2.04
C8	03 Jan 2018	13	15.71	85.42	7.5	33.50	8.2	24.7	1.91
C8	03 Jan 2018	14	15.67	85.11	7.5	33.50	8.2	24.7	1.76
C8	03 Jan 2018	15	15.65	85.38	7.5	33.50	8.2	24.7	1.85
C8	03 Jan 2018	16	15.59	85.28	7.4	33.50	8.2	24.7	1.77
C8	03 Jan 2018	17	15.55	85.39	7.4	33.49	8.2	24.7	1.56
C8	03 Jan 2018	18	15.54	85.32	7.4	33.49	8.2	24.7	1.60
C8	03 Jan 2018	19	15.54	85.57	7.4	33.49	8.2	24.7	1.56

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	03 Jan 2018	20	15.54	85.33	7.4	33.49	8.2	24.7	1.60
C8	11 Jan 2018	1	16.43	71.19	7.6	33.36	8.1	24.4	0.94
C8	11 Jan 2018	2	16.49	74.50	7.6	33.40	8.2	24.4	0.89
C8	11 Jan 2018	3	16.51	70.15	7.6	33.42	8.2	24.4	0.87
C8	11 Jan 2018	4	16.56	79.01	7.5	33.46	8.2	24.4	0.83
C8	11 Jan 2018	5	16.56	81.88	7.5	33.48	8.2	24.4	0.77
C8	11 Jan 2018	6	16.53	81.37	7.4	33.48	8.2	24.5	0.73
C8	11 Jan 2018	7	16.46	78.03	7.4	33.48	8.2	24.5	0.73
C8	11 Jan 2018	8	16.43	75.64	7.4	33.48	8.2	24.5	0.80
C8	11 Jan 2018	9	16.35	71.11	7.4	33.48	8.2	24.5	0.80
C8	11 Jan 2018	10	16.29	67.80	7.4	33.47	8.2	24.5	0.79
C8	11 Jan 2018	11	16.32	68.58	7.4	33.47	8.2	24.5	0.76
C8	11 Jan 2018	12	16.10	64.33	7.3	33.47	8.2	24.5	0.77
C8	11 Jan 2018	13	15.98	63.84	7.2	33.46	8.1	24.6	0.77
C8	11 Jan 2018	14	15.91	64.54	7.2	33.45	8.1	24.6	0.77
C8	11 Jan 2018	15	15.67	65.26	7.2	33.45	8.1	24.6	0.75
C8	11 Jan 2018	16	15.58	63.57	7.1	33.45	8.1	24.6	0.74
C8	11 Jan 2018	17	15.49	57.32	7.1	33.45	8.1	24.7	0.87
C8	11 Jan 2018	18	15.48	43.97	7.1	33.44	8.1	24.7	0.94
C8	11 Jan 2018	19	15.47	41.36	7.1	33.45	8.1	24.7	0.96
C8	16 Jan 2018	1	16.30	71.08	7.7	33.41	8.2	24.5	0.86
C8	16 Jan 2018	2	16.29	70.97	7.7	33.41	8.2	24.5	0.88
C8	16 Jan 2018	3	16.23	71.93	7.7	33.43	8.2	24.5	1.00
C8	16 Jan 2018	4	16.04	77.47	7.7	33.45	8.2	24.5	1.11
C8	16 Jan 2018	5	15.92	81.60	7.5	33.45	8.2	24.6	1.15
C8	16 Jan 2018	6	15.58	81.84	7.4	33.46	8.2	24.7	1.16
C8	16 Jan 2018	7	15.47	81.76	7.4	33.45	8.1	24.7	1.15
C8	16 Jan 2018	8	15.40	82.63	7.4	33.45	8.1	24.7	1.14
C8	16 Jan 2018	9	15.37	83.55	7.4	33.45	8.1	24.7	1.20
C8	16 Jan 2018	10	15.36	83.77	7.4	33.45	8.1	24.7	1.19
C8	16 Jan 2018	11	15.11	83.95	7.2	33.46	8.1	24.8	1.10
C8	16 Jan 2018	12	14.93	83.14	7.2	33.44	8.1	24.8	1.03
C8	16 Jan 2018	13	14.83	81.42	7.1	33.44	8.1	24.8	0.91
C8	16 Jan 2018	14	14.60	77.89	6.9	33.45	8.1	24.9	0.85
C8	16 Jan 2018	15	14.23	71.14	6.7	33.45	8.1	24.9	0.85
C8	16 Jan 2018	16	14.12	66.56	6.6	33.43	8.1	24.9	0.87
C8	16 Jan 2018	17	14.02	55.78	6.6	33.43	8.1	25.0	0.88
C8	16 Jan 2018	18	14.11	57.06	6.6	33.42	8.1	24.9	0.89
C8	16 Jan 2018	19	14.13	52.03	6.6	33.43	8.1	24.9	0.96
C8	16 Jan 2018	20	14.09	49.06	6.6	33.43	8.1	25.0	0.97
C8	22 Jan 2018	1	15.04	73.86	6.0	33.37	8.1	24.7	0.62
C8	22 Jan 2018	2	15.04	73.75	6.5	33.39	8.1	24.7	0.61
C8	22 Jan 2018	3	15.04	73.56	7.0	33.44	8.1	24.8	0.60
C8	22 Jan 2018	4	15.05	73.52	7.2	33.44	8.2	24.8	0.61
C8	22 Jan 2018	5	15.04	73.61	7.5	33.45	8.2	24.8	0.60
C8	22 Jan 2018	6	14.97	73.67	7.5	33.48	8.1	24.8	0.61
C8	22 Jan 2018	7	14.79	72.63	7.4	33.52	8.1	24.9	0.61
C8	22 Jan 2018	8	14.70	69.58	7.1	33.49	8.1	24.9	0.61
C8	22 Jan 2018	9	14.62	64.38	6.9	33.52	8.1	24.9	0.67
C8	22 Jan 2018	10	14.53	69.77	7.0	33.52	8.1	24.9	0.92
C8	22 Jan 2018	11	14.43	72.87	6.9	33.50	8.1	24.9	0.95
C8	22 Jan 2018	12	14.31	76.50	6.7	33.54	8.1	25.0	0.94

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	22 Jan 2018	13	14.22	78.17	6.7	33.55	8.1	25.0	0.94
C8	22 Jan 2018	14	14.18	78.62	6.7	33.53	8.1	25.0	0.92
C8	22 Jan 2018	15	14.16	78.72	6.5	33.53	8.1	25.0	0.96
C8	22 Jan 2018	16	14.12	78.85	6.6	33.53	8.1	25.0	0.93
C8	22 Jan 2018	17	14.07	77.47	6.7	33.55	8.1	25.1	0.96
C8	22 Jan 2018	18	14.04	74.83	6.6	33.52	8.1	25.0	0.95
C8	22 Jan 2018	19	14.03	73.01	6.5	33.49	8.1	25.0	0.98
C8	22 Jan 2018	20	14.04	72.75	6.7	33.48	8.1	25.0	1.08
C8	29 Jan 2018	1	14.83	74.01	7.3	33.45	8.1	24.8	0.82
C8	29 Jan 2018	2	14.82	74.15	7.6	33.45	8.1	24.8	0.77
C8	29 Jan 2018	3	14.81	74.34	8.1	33.46	8.1	24.8	0.80
C8	29 Jan 2018	4	14.81	74.32	8.1	33.45	8.1	24.8	0.86
C8	29 Jan 2018	5	14.79	74.25	8.0	33.46	8.1	24.8	1.01
C8	29 Jan 2018	6	14.72	76.30	8.0	33.46	8.1	24.8	1.18
C8	29 Jan 2018	7	14.71	79.26	8.1	33.46	8.1	24.8	1.56
C8	29 Jan 2018	8	14.71	80.97	8.1	33.46	8.1	24.8	1.99
C8	29 Jan 2018	9	14.71	81.19	8.1	33.46	8.1	24.8	2.06
C8	29 Jan 2018	10	14.70	81.82	8.1	33.46	8.1	24.8	2.29
C8	29 Jan 2018	11	14.60	82.04	8.0	33.47	8.1	24.9	2.11
C8	29 Jan 2018	12	14.38	83.04	7.7	33.47	8.1	24.9	1.86
C8	29 Jan 2018	13	14.28	83.07	7.5	33.45	8.0	24.9	1.57
C8	29 Jan 2018	14	13.99	81.78	7.1	33.48	8.0	25.0	1.30
C8	29 Jan 2018	15	13.55	82.06	6.8	33.47	8.0	25.1	1.11
C8	29 Jan 2018	16	13.31	82.80	6.6	33.47	8.0	25.1	1.00
C8	29 Jan 2018	17	12.80	83.81	6.3	33.48	8.0	25.3	0.84
C8	29 Jan 2018	18	12.41	84.73	6.0	33.46	7.9	25.3	0.67
C8	29 Jan 2018	19	12.37	84.80	5.9	33.45	7.9	25.3	0.59
C8	29 Jan 2018	20	12.37	84.79	5.9	33.45	7.9	25.3	0.60

NA = not available

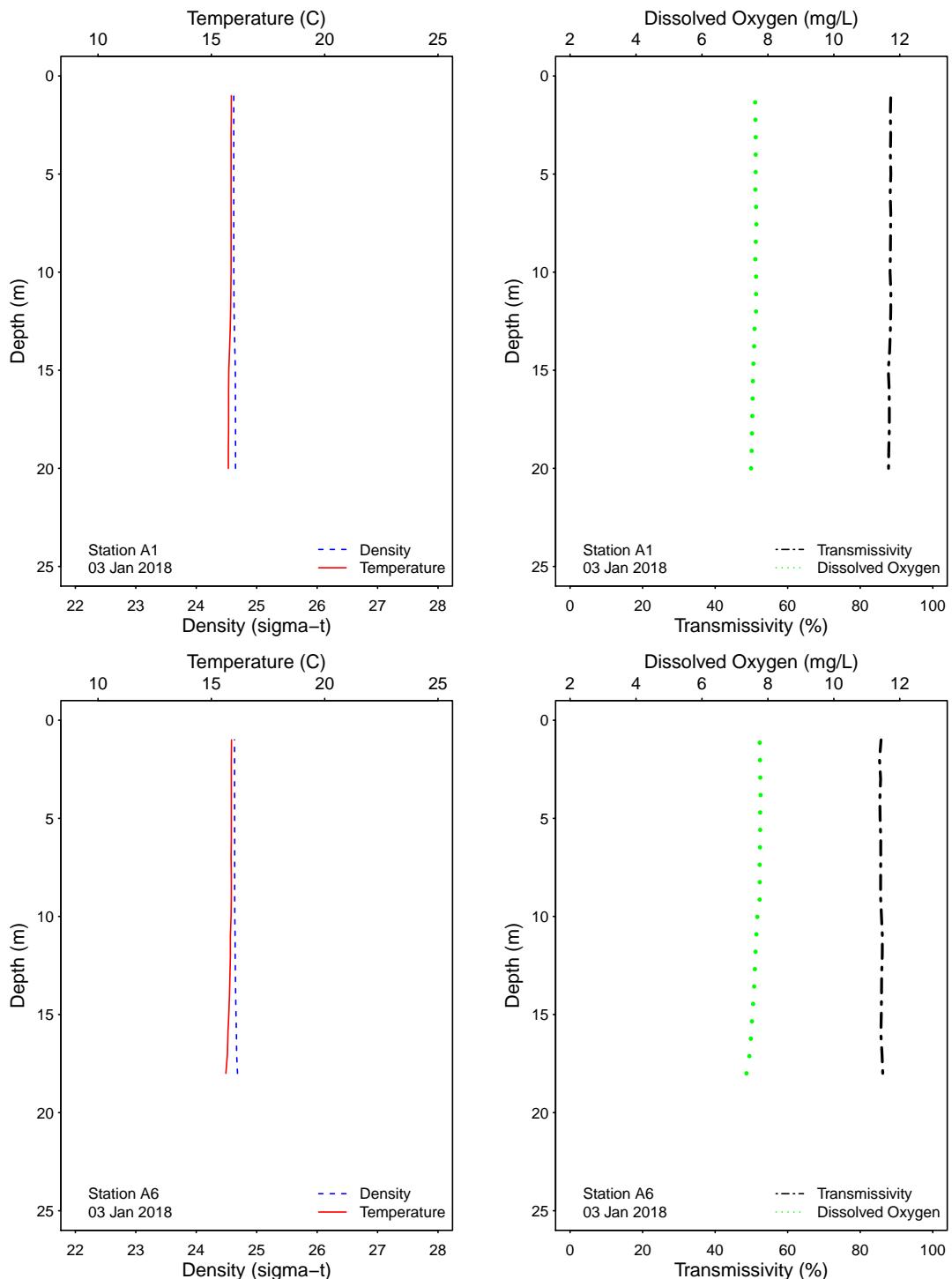


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

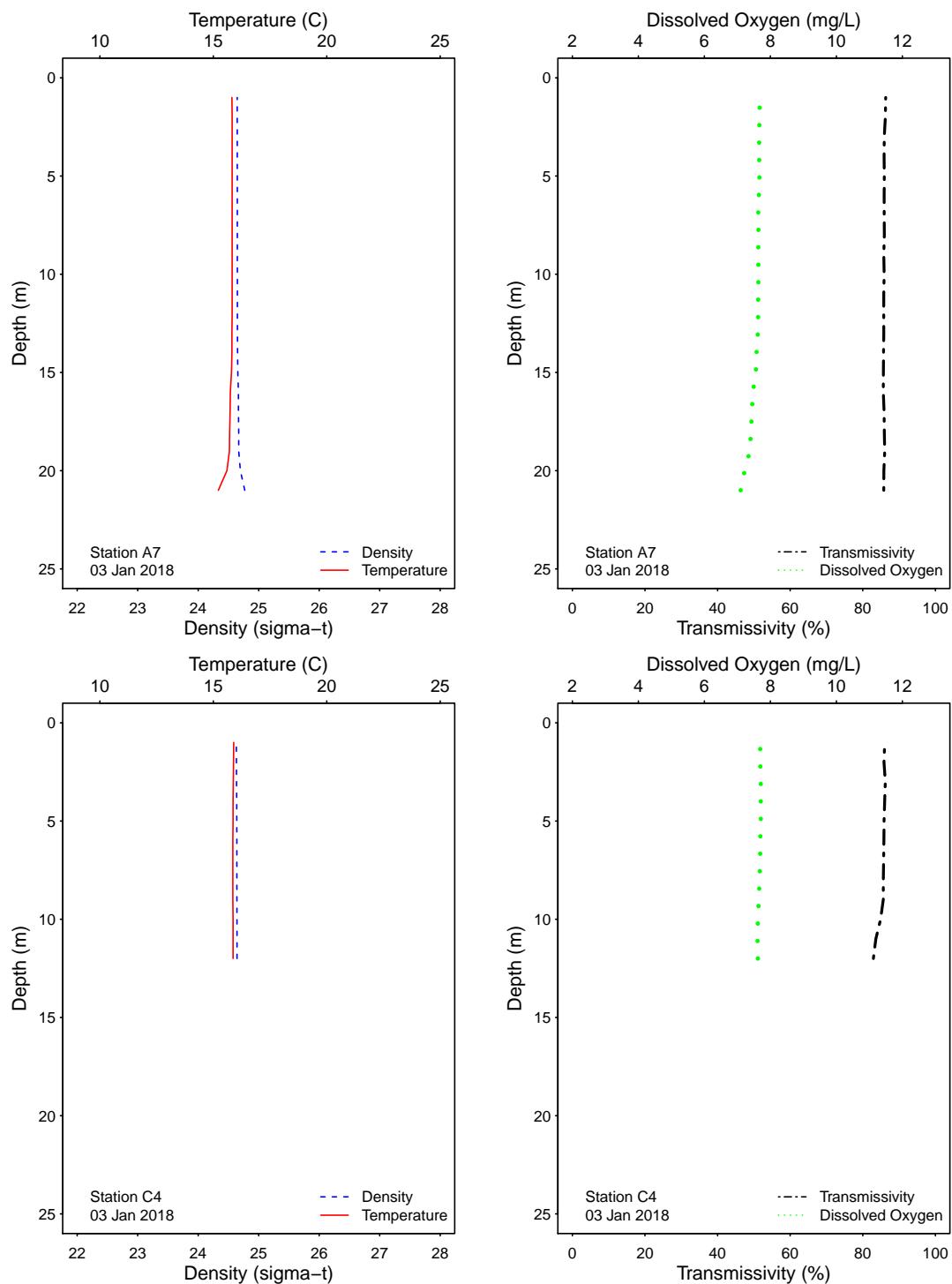


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

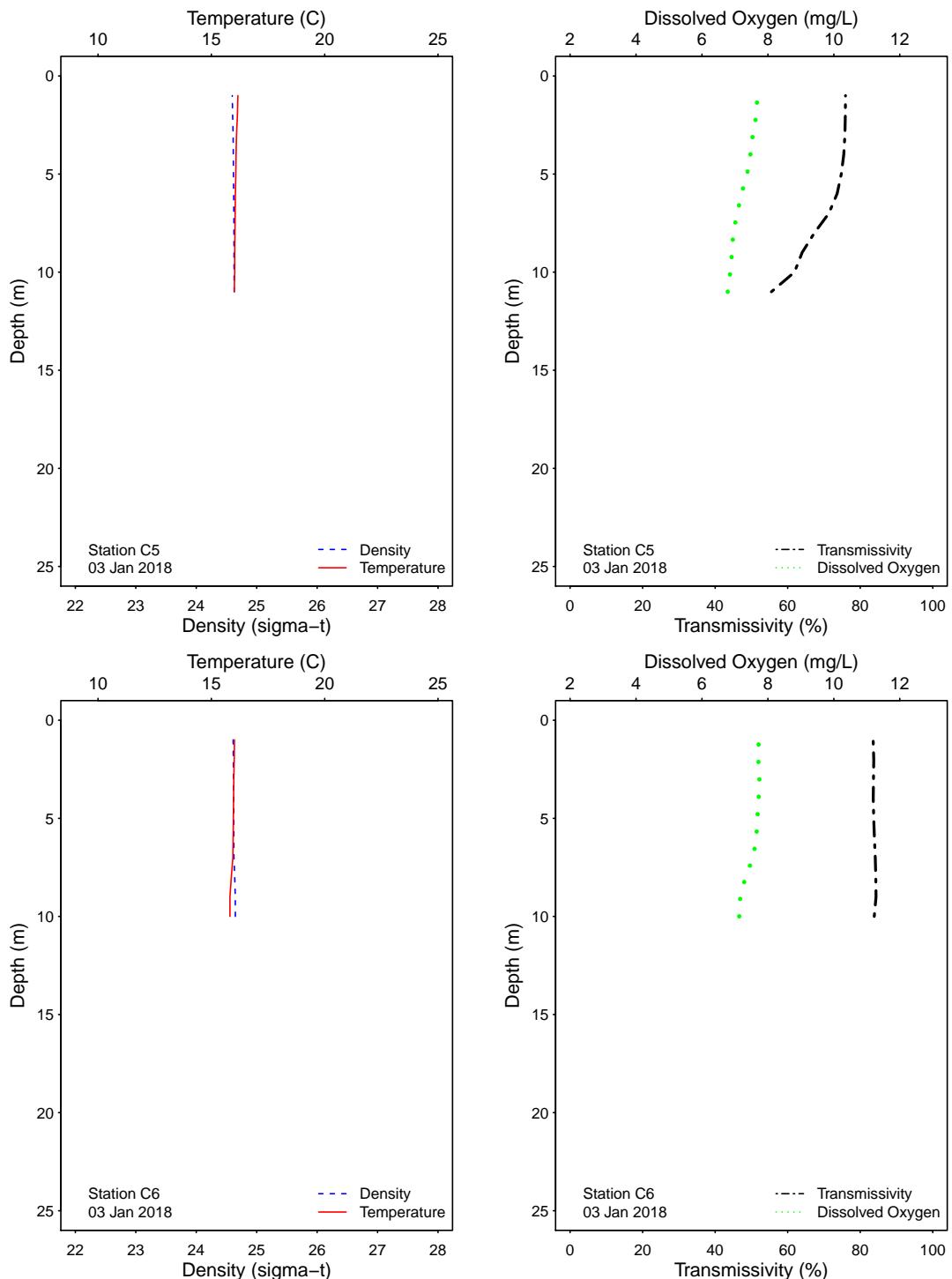


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

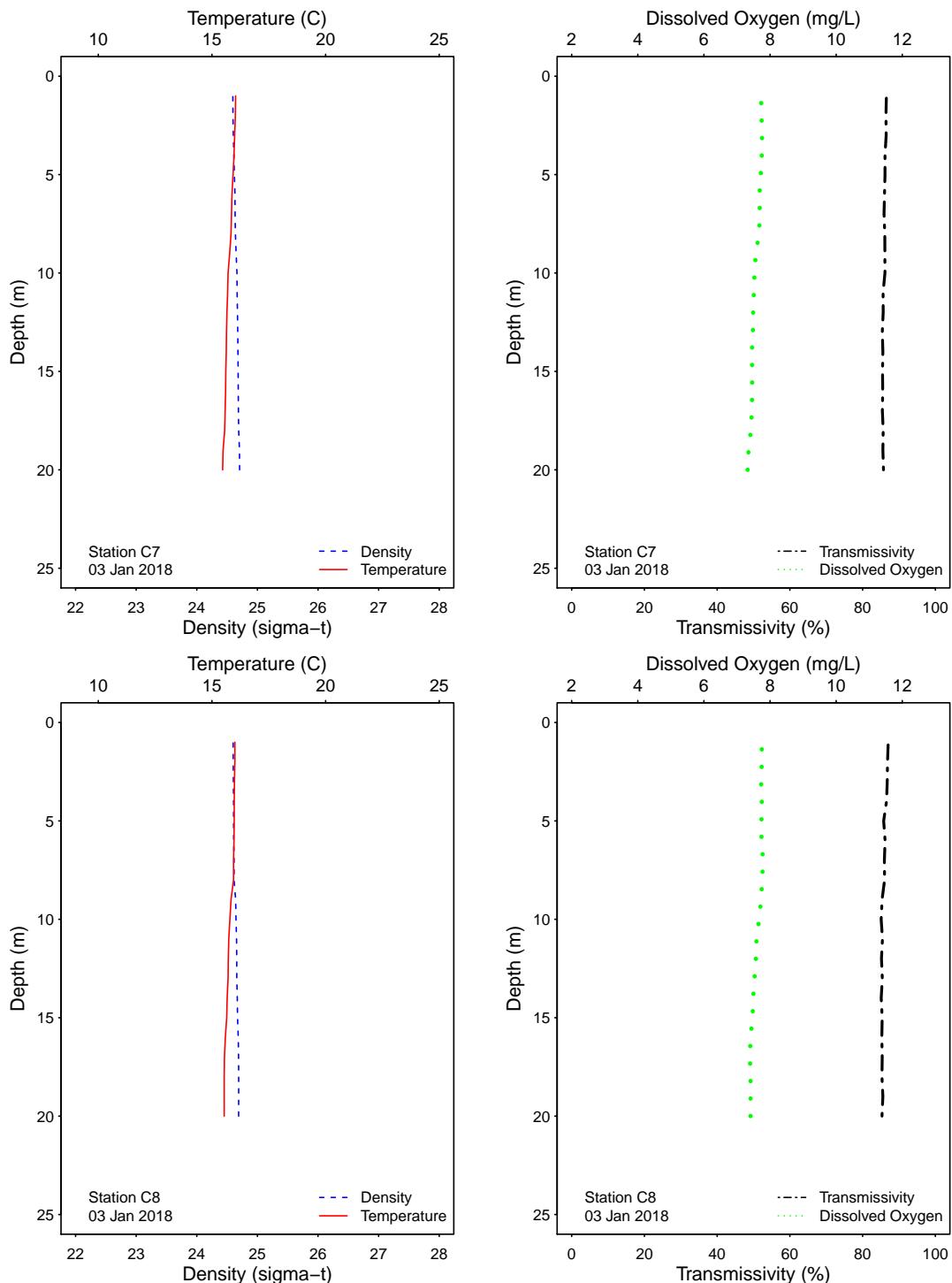


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

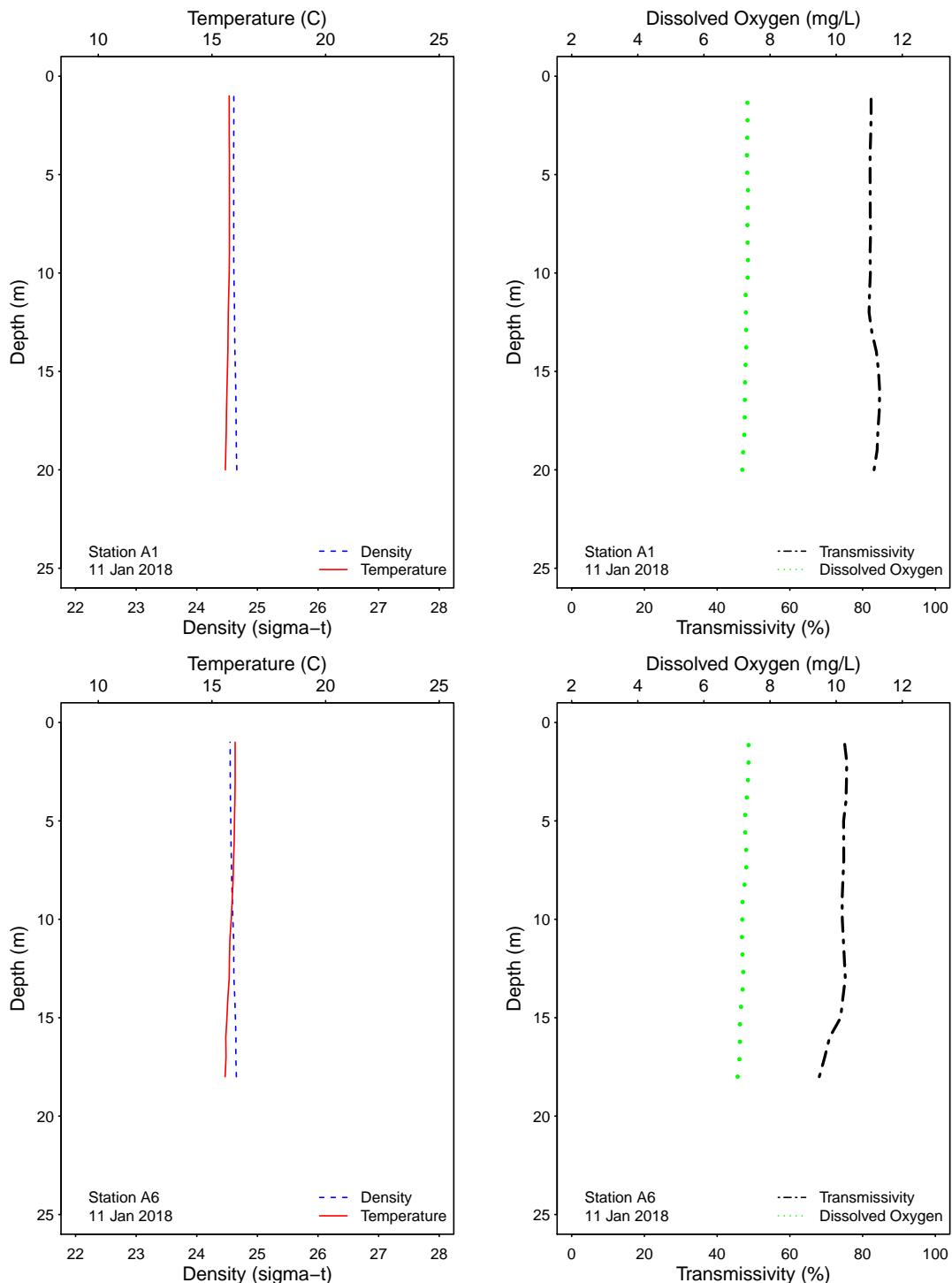


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

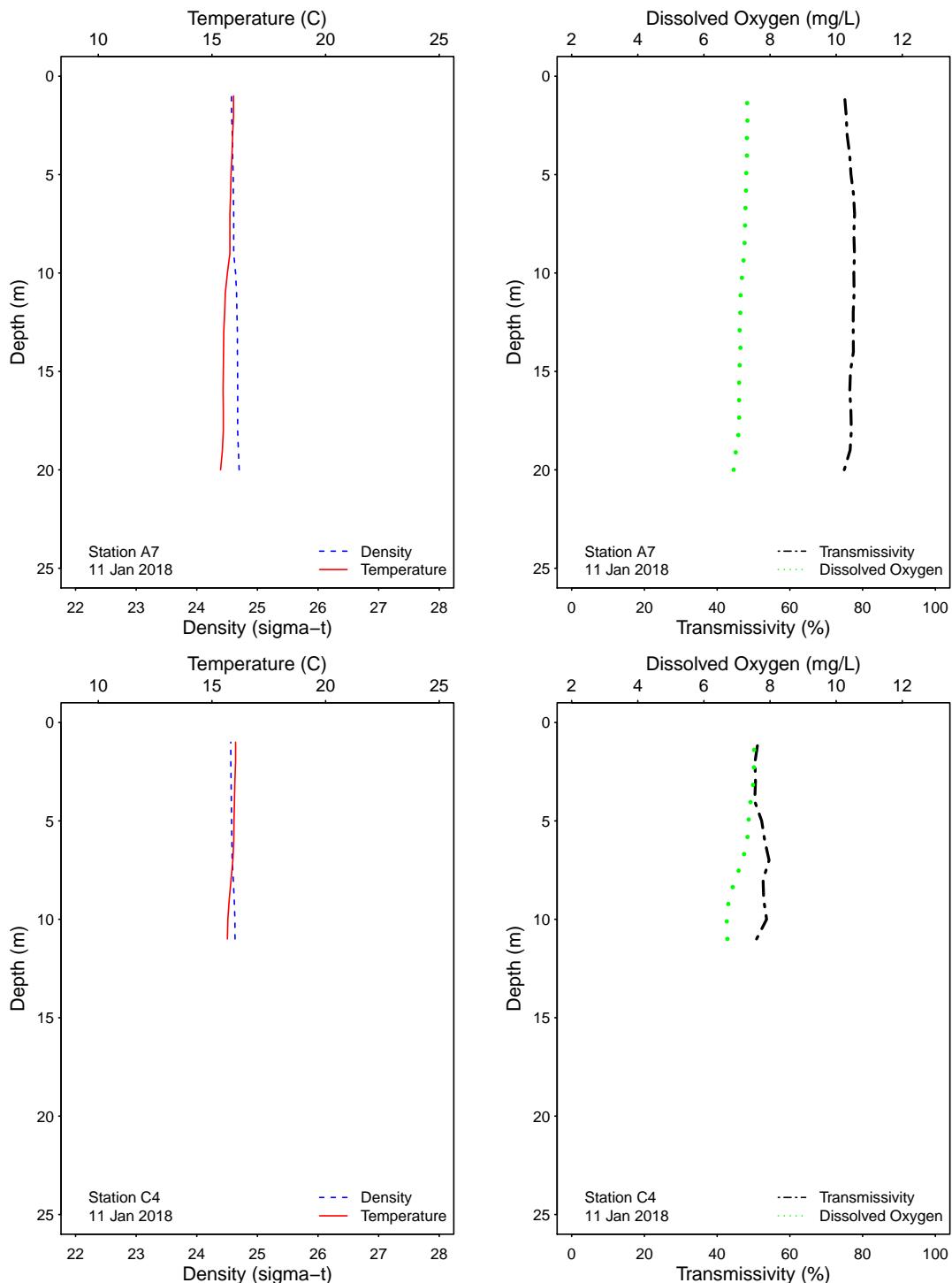


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

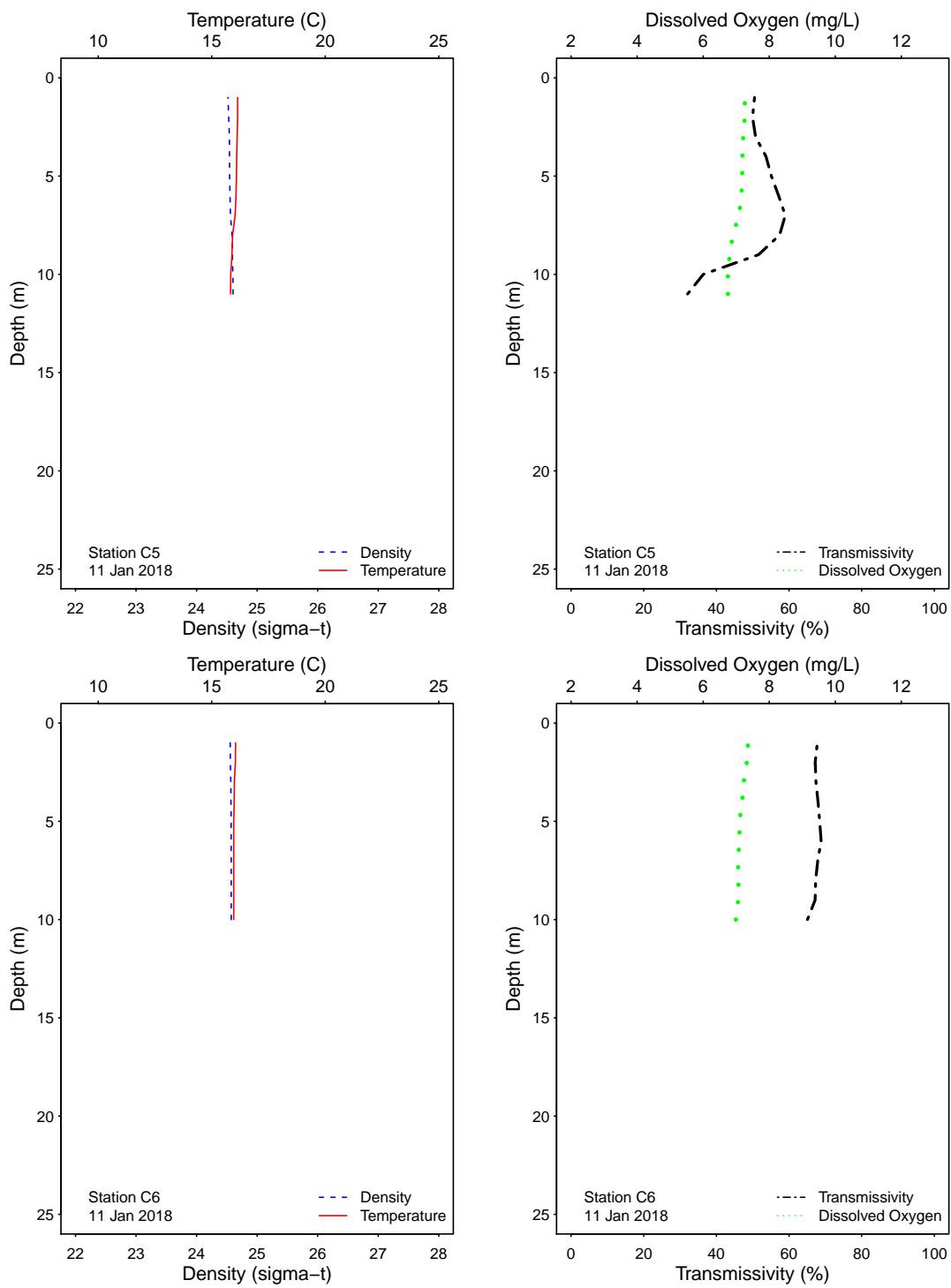


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

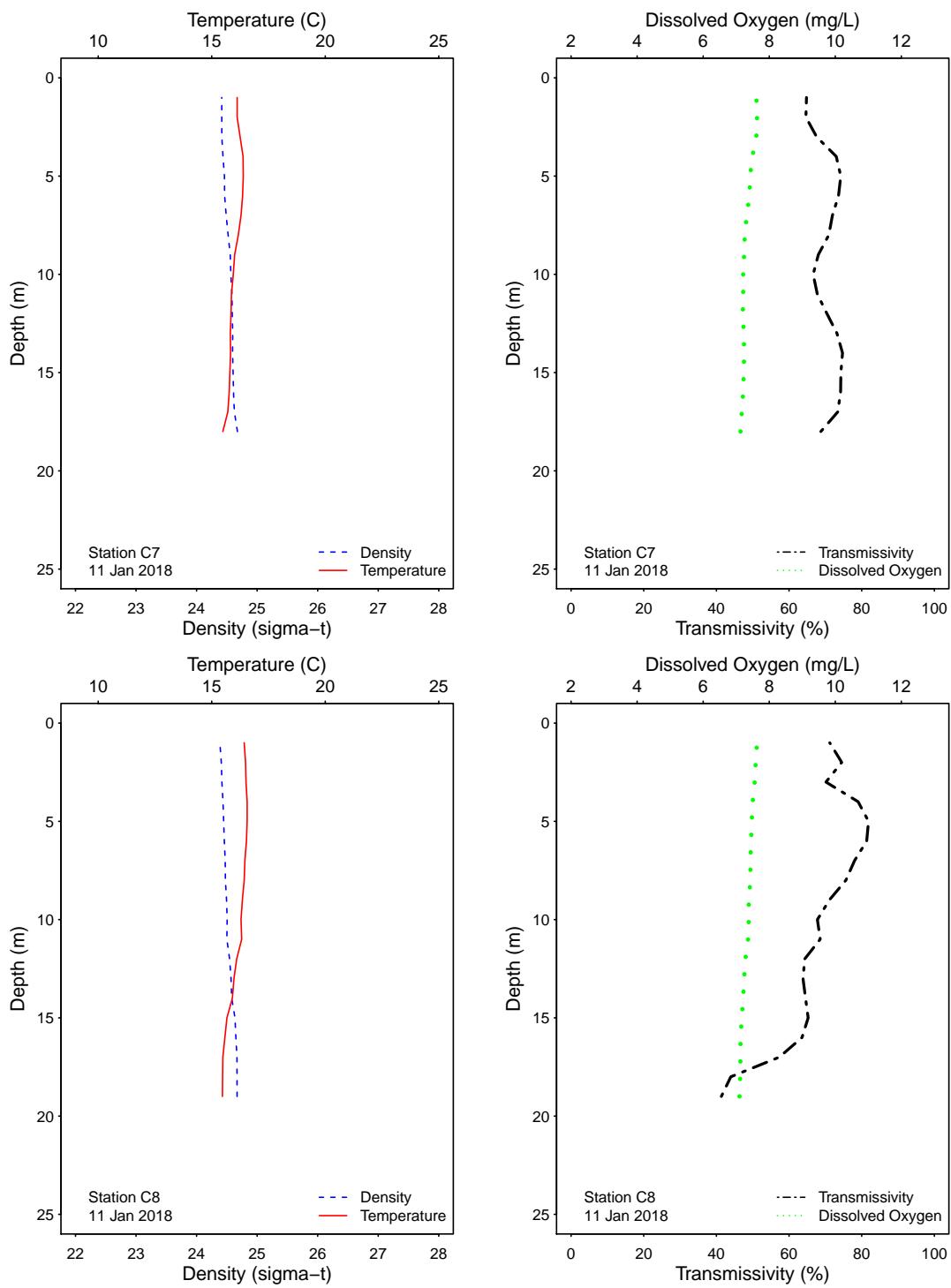


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

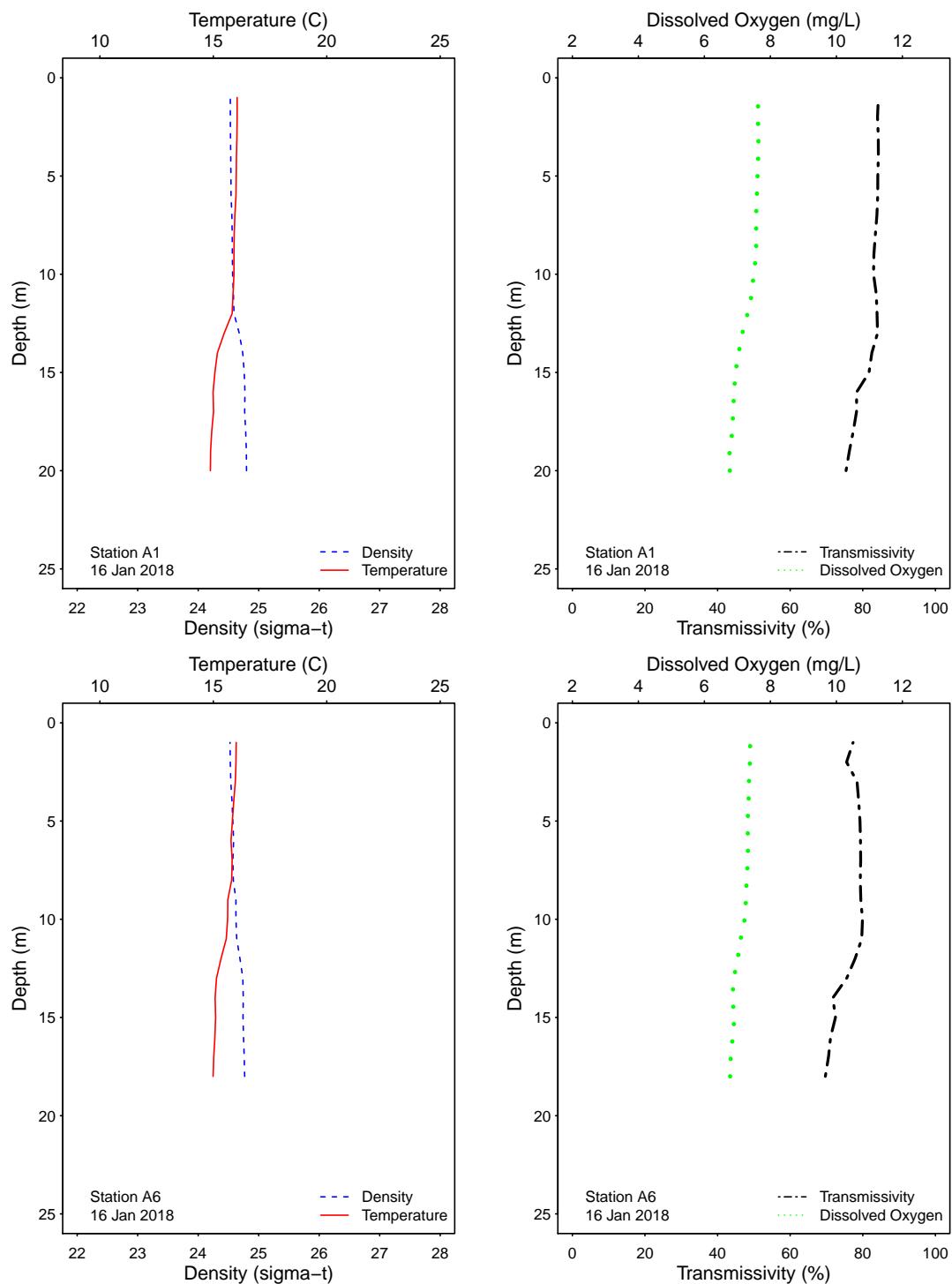


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

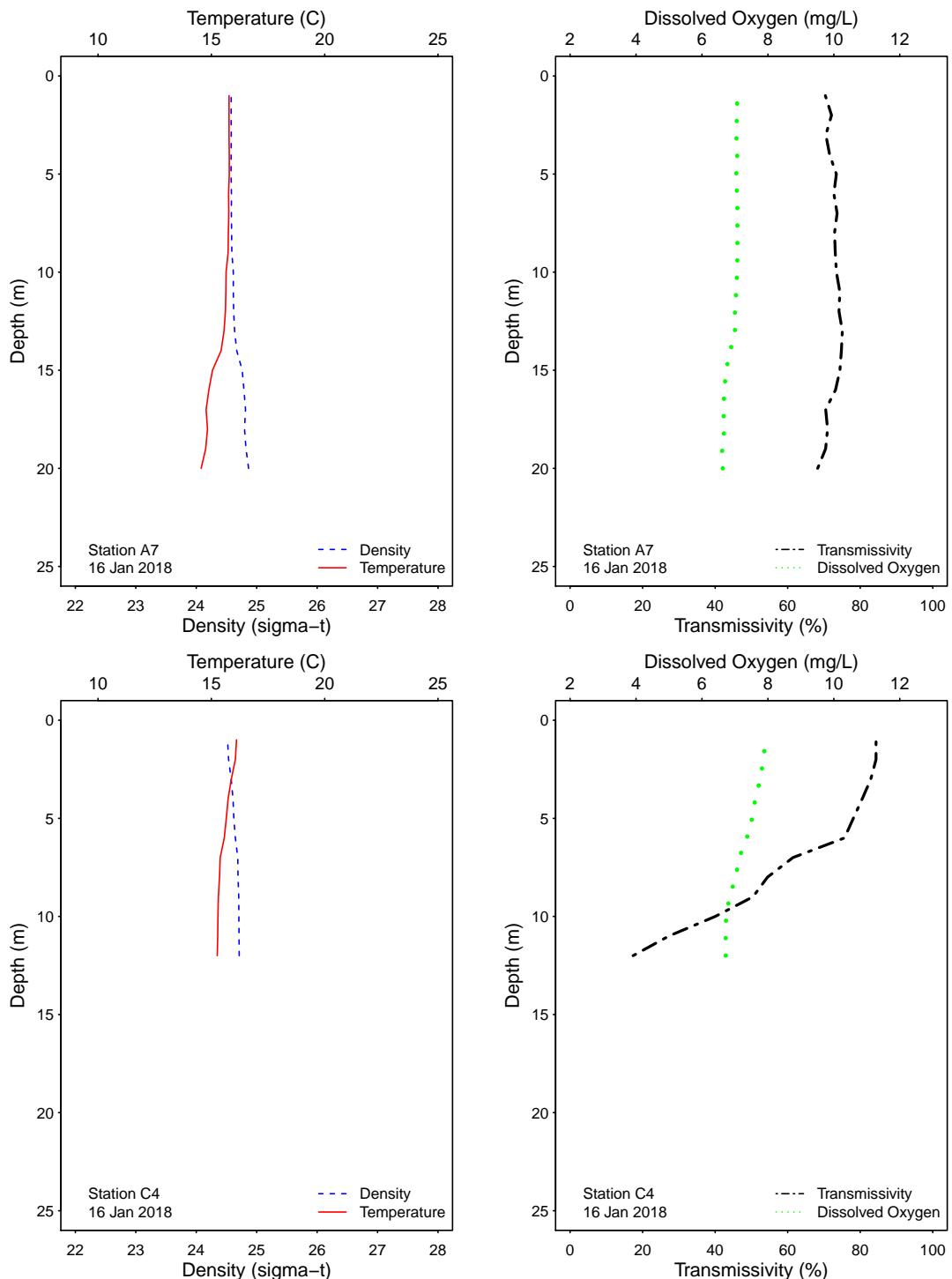


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

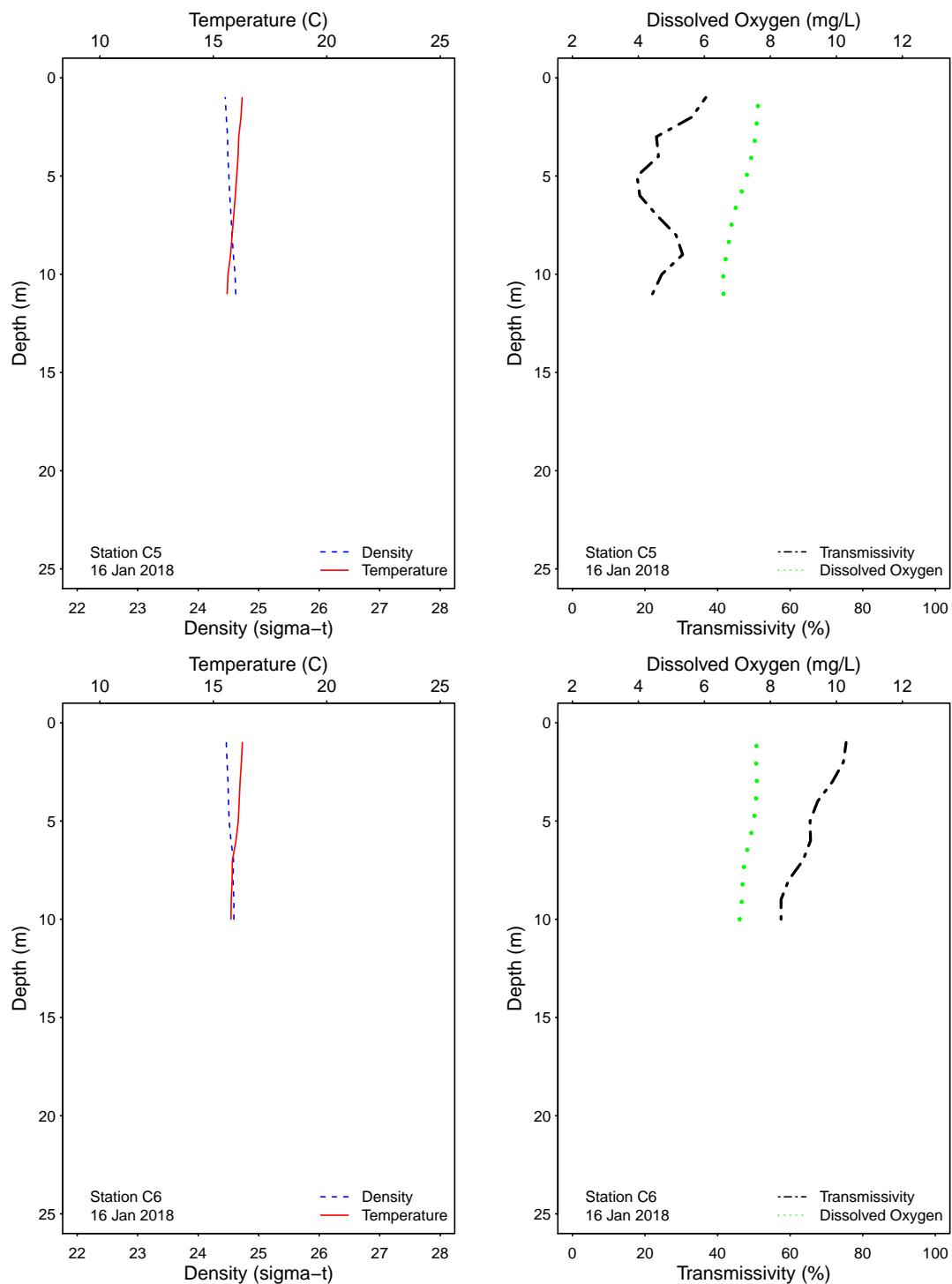


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

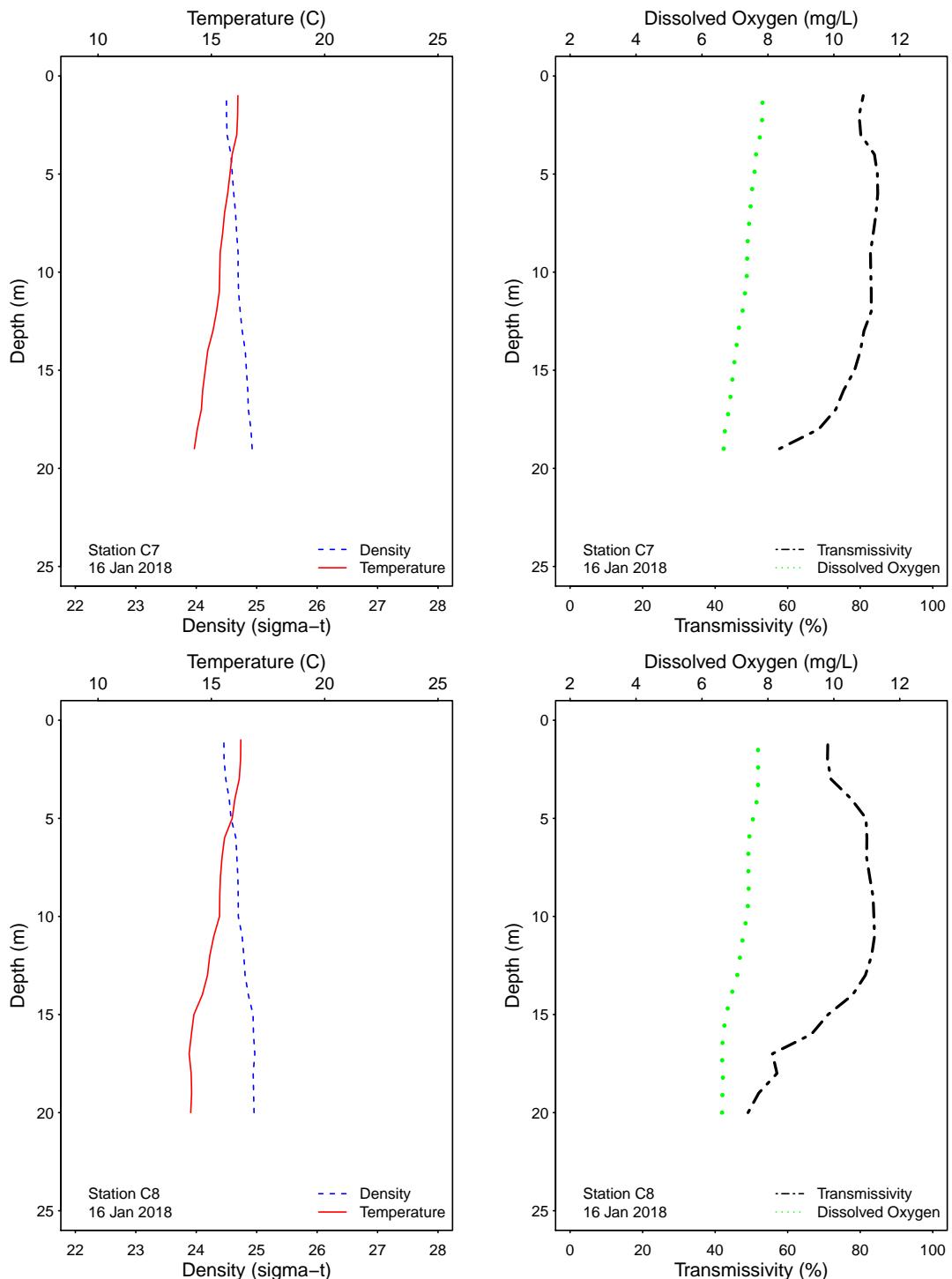


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

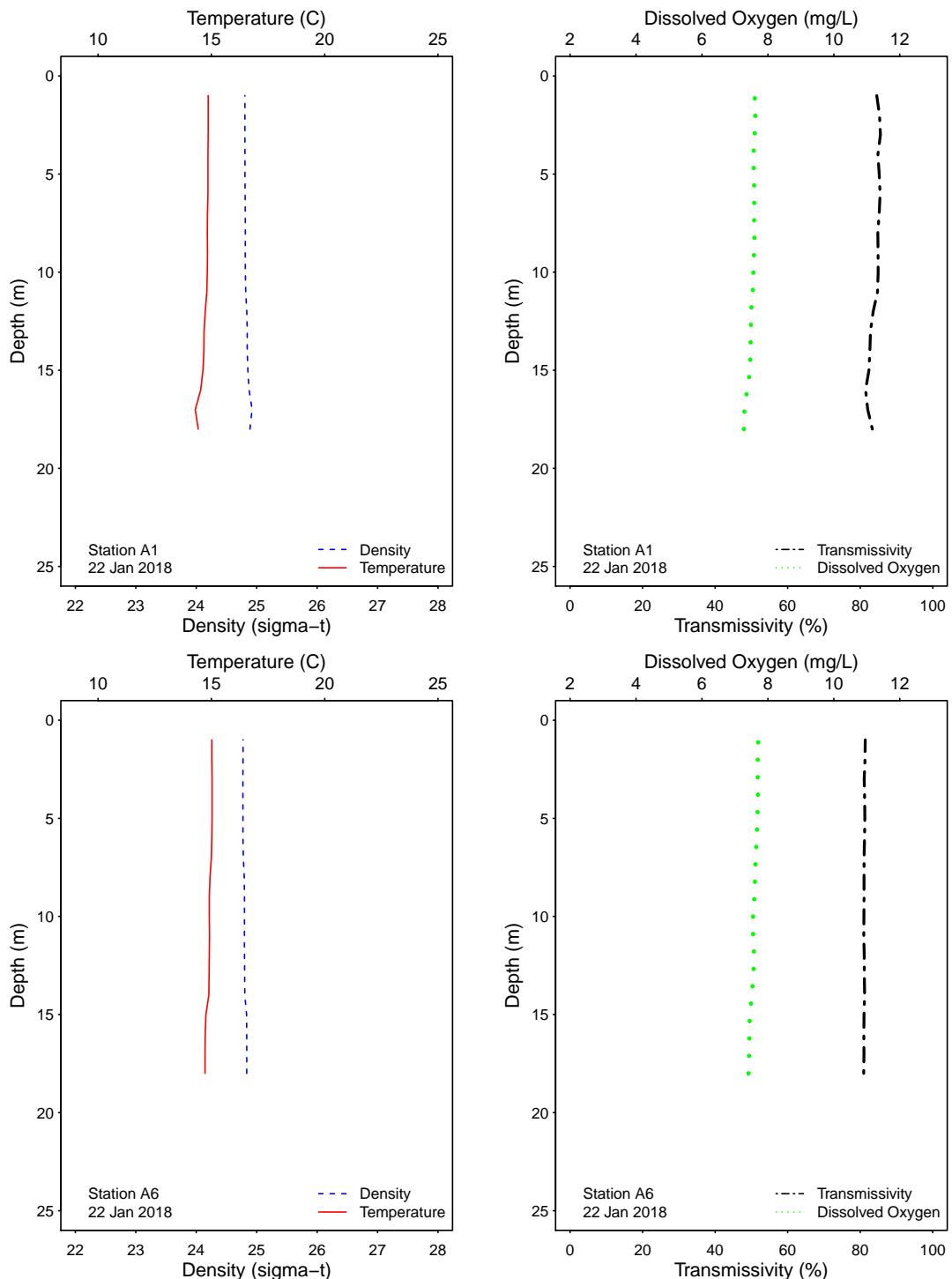


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

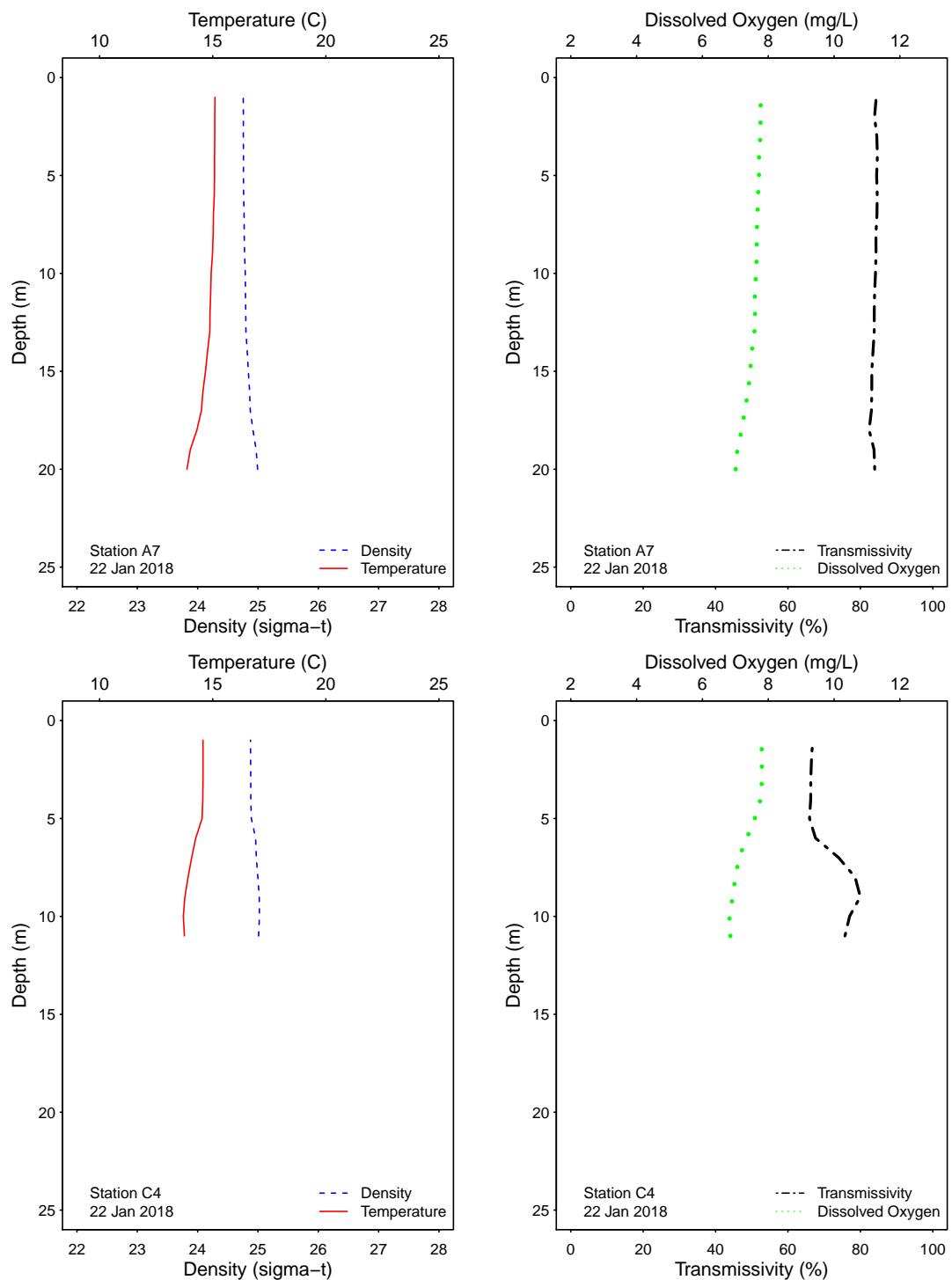


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

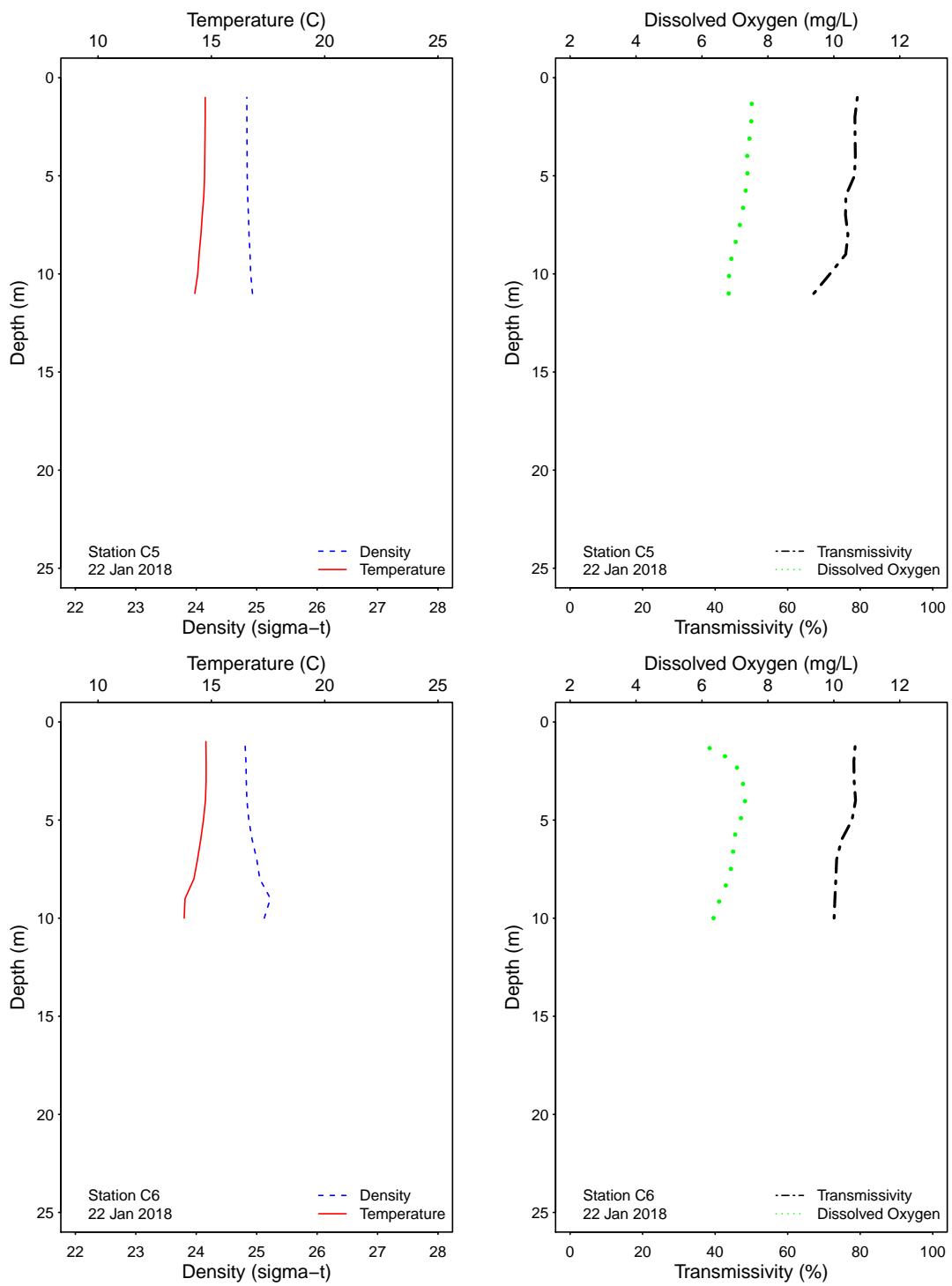


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

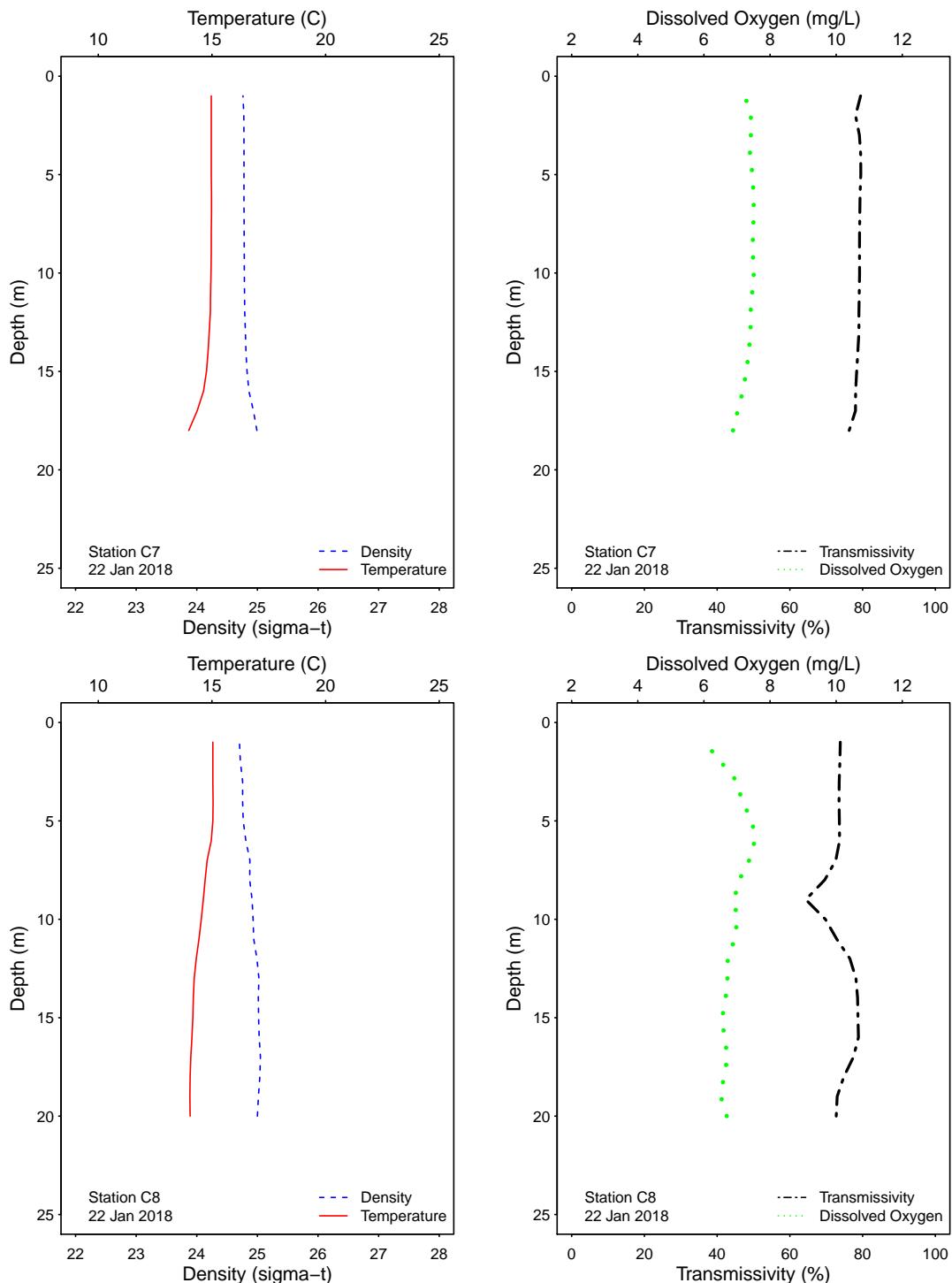


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

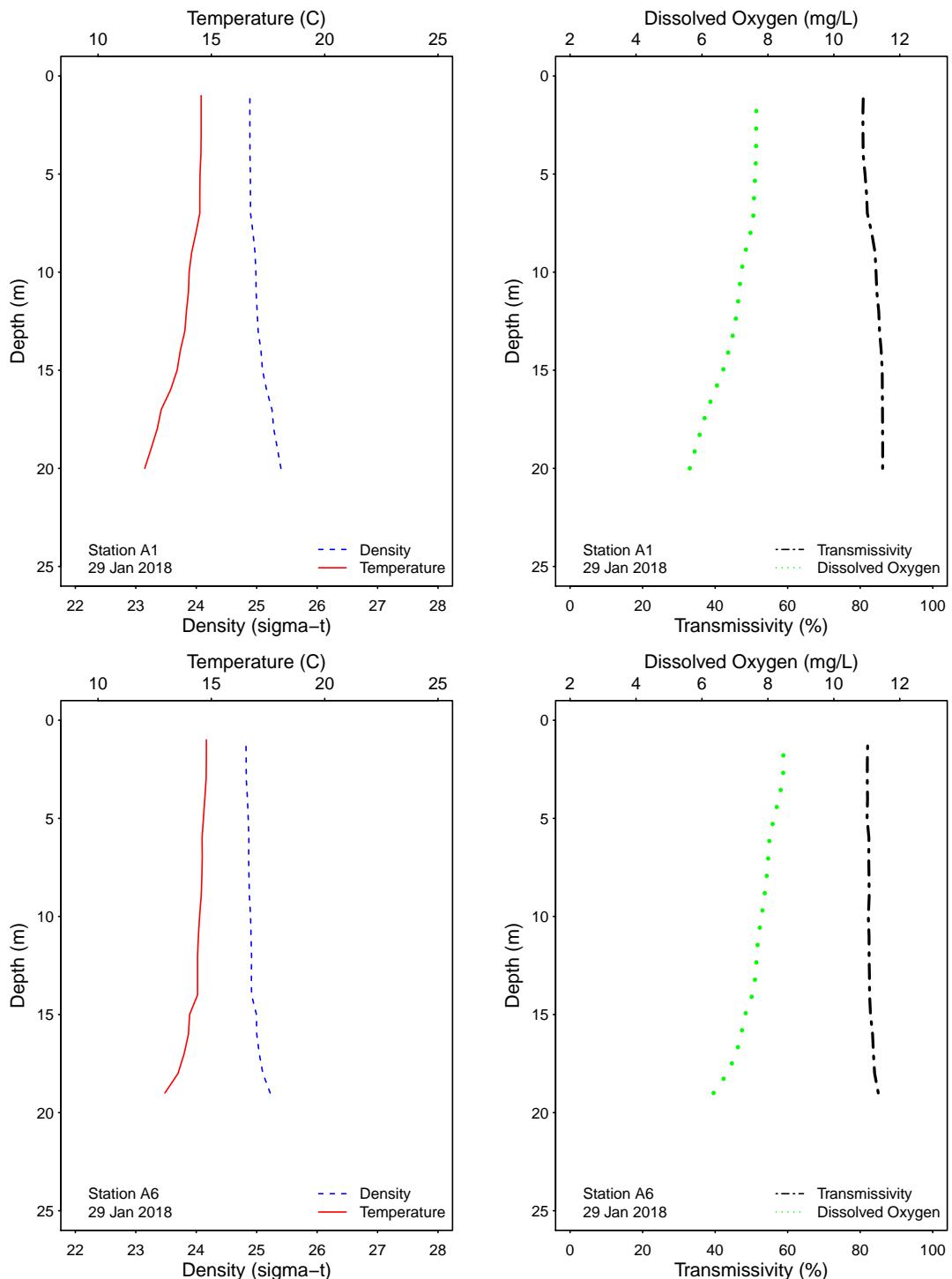


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

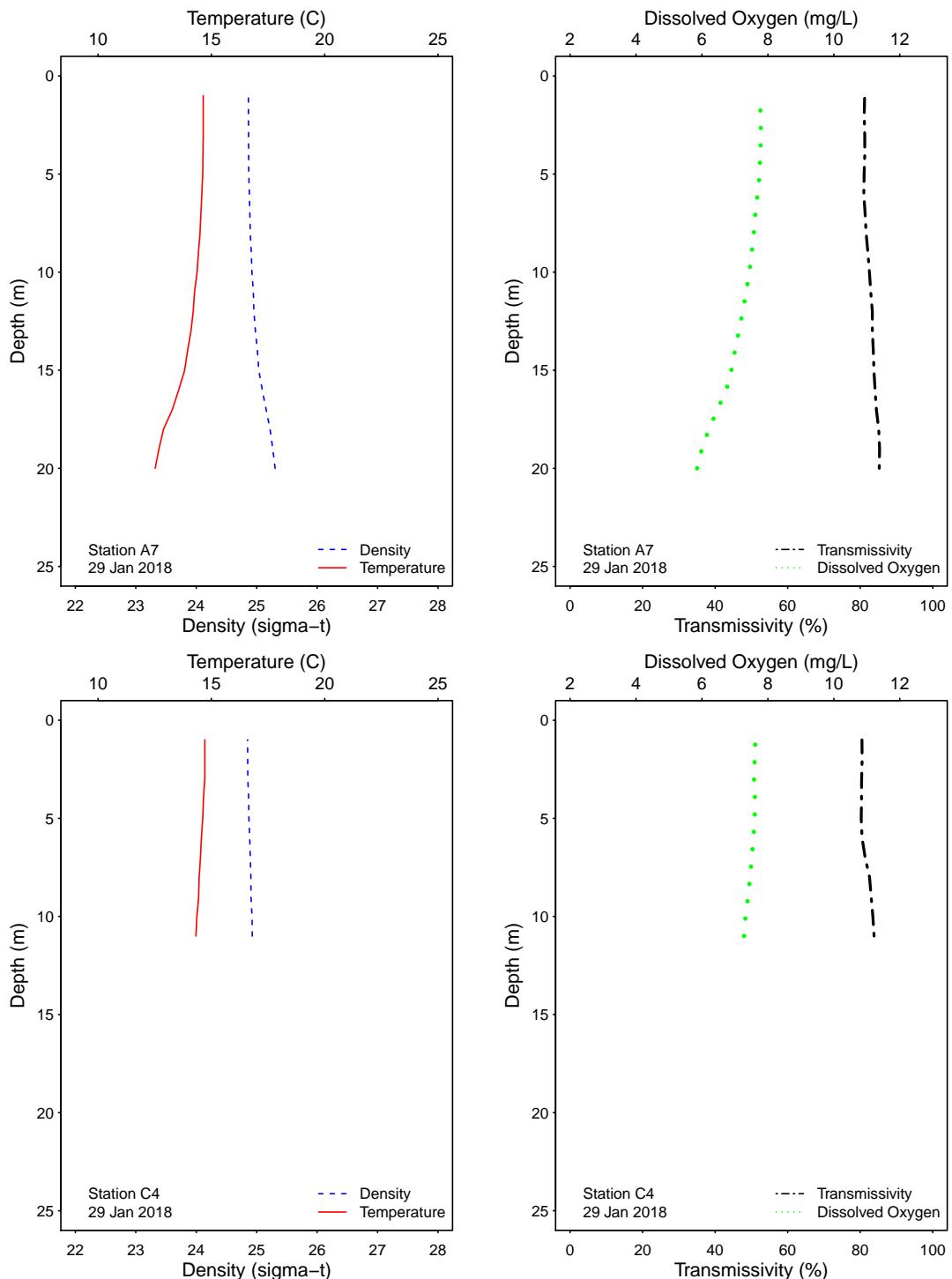


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

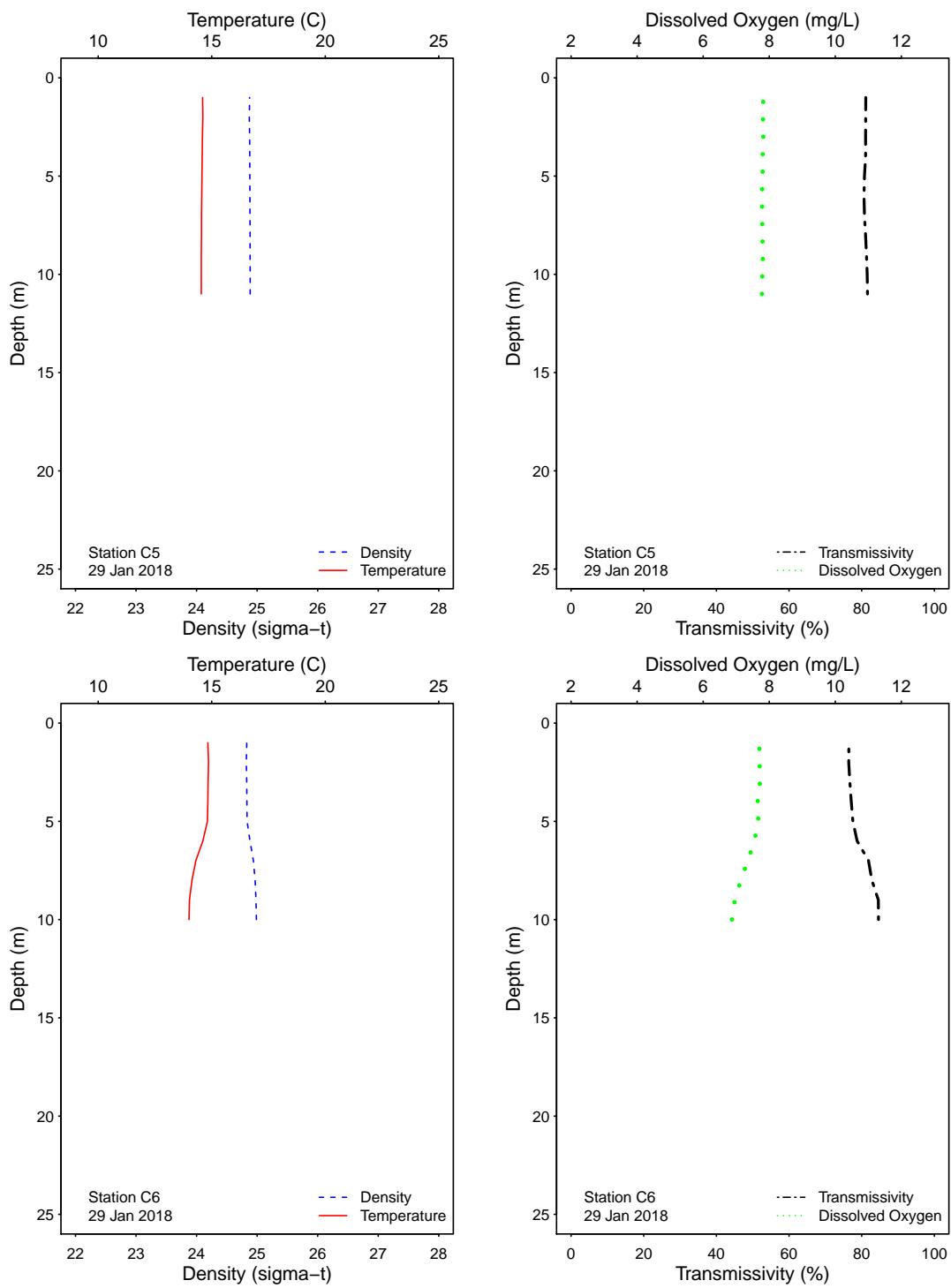


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

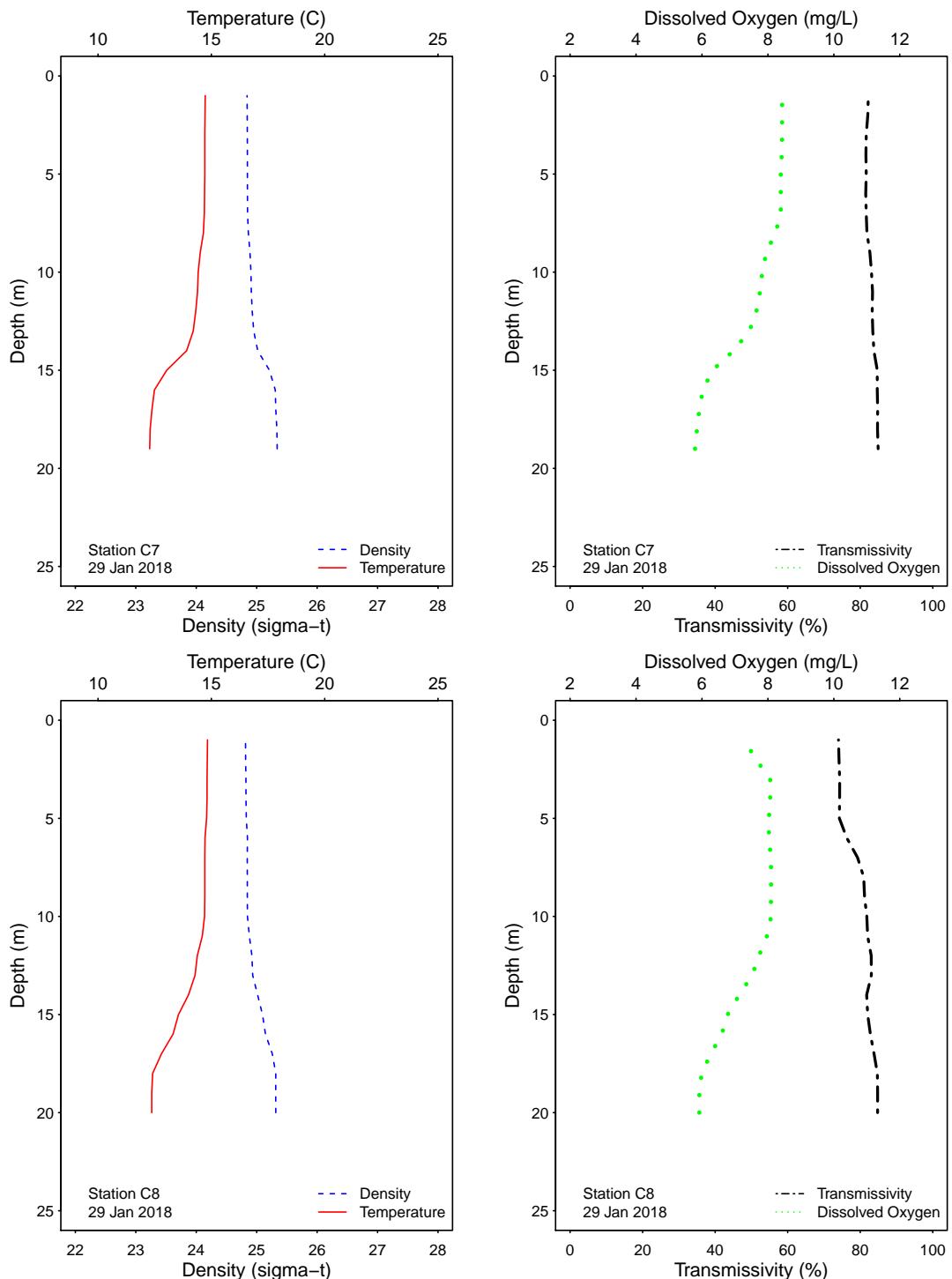


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

# **APPENDIX A**

## Quality Assurance



**Table A.1**

Summary of bacteriological quality assurance field and lab duplicate sample analyses at selected PLOO stations. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Enter) are reported as CFU/100 mL.

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	03 Jan 2018	18	LMA	LAB DUPLICATE	14e	<2	<2
A7	11 Jan 2018	18	AE	LAB DUPLICATE	56	<2	<2
A7	16 Jan 2018	18	AR	LAB DUPLICATE	<2	2e	2e
A7	22 Jan 2018	18	AE	LAB DUPLICATE	8e	2e	<2
A7	29 Jan 2018	18	LMA	LAB DUPLICATE	14e	<2	<2
C7	03 Jan 2018	18	JT	LAB DUPLICATE	4e	2e	<2
C7	11 Jan 2018	18	ZV	LAB DUPLICATE	100e	8e	2e
C7	16 Jan 2018	18	AR	LAB DUPLICATE	<20	<2	2e
C7	22 Jan 2018	18	AE	LAB DUPLICATE	12e	<2	<2
C7	29 Jan 2018	18	AE	LAB DUPLICATE	34e	<2	<2
C8	03 Jan 2018	12	JT	LAB DUPLICATE	2e	<2	2e
C8	11 Jan 2018	12	ZV	LAB DUPLICATE	60e	6e	6e
C8	16 Jan 2018	12	AR	LAB DUPLICATE	4e	<2	ns
C8	22 Jan 2018	12	AE	LAB DUPLICATE	8e	<2	<2
C8	29 Jan 2018	12	LMA	LAB DUPLICATE	<2	<2	ns
D12	03 Jan 2018		JT	FIELD DUPLICATE	20e	6e	2e
D12	03 Jan 2018		JT	LAB DUPLICATE	8e	2e	<2
D12	10 Jan 2018		AR	FIELD DUPLICATE	600e	22e	54
D12	10 Jan 2018		AR	LAB DUPLICATE	1800e	80e	ns
D12	17 Jan 2018		AE	FIELD DUPLICATE	<20	4e	16e
D12	17 Jan 2018		AE	LAB DUPLICATE	20e	10e	12e
D12	24 Jan 2018		LMA	FIELD DUPLICATE	4e	<2	<2
D12	24 Jan 2018		LMA	LAB DUPLICATE	4e	2e	<2
D12	31 Jan 2018		ZV	FIELD DUPLICATE	2e	4e	32e
D12	31 Jan 2018		ZV	LAB DUPLICATE	6e	2e	24e

ns = not sampled

ND = no data

