



POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

POINT LOMA WASTEWATER TREATMENT PLANT

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

MARCH 2018

Environmental Monitoring and Technical Services
2392 Kincaid Road • Mail Station 45A • San Diego, CA 92101
Tel (619) 758-2300 Fax (619) 758-2309





Public Utilities Department

Environmental Monitoring & Technical Services Division

April 30, 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 March 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/rjg

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 required to be monitored at eight shoreline stations, including D4, D5, D7, D8, D9, D10, D11 and D12, which range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). However, station D8 was replaced by alternate station D8-A in June 2016 because of inaccessibility to the original site. Additionally, due to increasing instability in several cliffside areas off Point Loma, City staff have been unable to safely access and sample both D8-A and station D7 since February 7, 2018. Consequently, the City is working with the San Diego Water Board to identify new alternate sample locations until safe access can be restored to these two original sites. During March 2018, the City was able to identify a new alternate location for stations D8/D8-A. This new station, designated D8-B, is located about 150 feet north of D8-A. Results for the first successful sample collected at this new site on March 28, 2018 is reported herein. In contrast, no suitable alternate site with safe access has yet been determined for station D7. Thus, the City will continue to monitor conditions at station D7 while working with the Water Board to resolve the situation.

Seawater samples were collected from the surf zone at each station on a weekly basis. These samples were 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 were also recorded at the time of sample collection. Wind speed and direction were measured using a hand-held anemometer with a compass.

Kelp Bed Stations

The eight kelp stations were sampled weekly 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 consisted primarily of collecting seawater samples at discrete depths to determine concentrations of indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Water column profiles of various physical/chemical

parameters were also generated during each sampling event, and visual observations of weather and water conditions were recorded at each station.

Seawater samples at the kelp bed stations were collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* were generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of ≥ 4 scans per second. These scans were then internally averaged to create water column profiles with data readings at a rate of one per meter. Additionally, CTD profile data for each water sample depth are 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 were 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. Additionally, data for depths closest to those at which bacteriological samples were collected were 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)^[1]. 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

^[1]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.

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;
- (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 March, one of the eight shore stations was out of compliance with various California Ocean Plan (Ocean Plan) water-contact standards.
 - o The SSM standard for *Enterococcus* was exceeded at station D11 on March 14.
- Per permit requirements, a resample was collected in response to this SSM exceedance (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>).
- Nothing of sewage origin was observed at any of the shore stations.

Kelp Bed Stations

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled four times during the month (i.e. March 5, 12 19, 26).

- During March, all of the kelp bed stations were in compliance with various water-contact standards specified in the Ocean Plan.
- Water column temperatures ranged from 10.98 to 15.55°C during the month. The difference between surface and bottom waters ranged from 0.81 to 3.68°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.18 to 5.16 µg/L during March, suggesting the presence of phytoplankton during the month.
- There were no notable visual observations for March.

Offshore Stations

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



TABLES AND FIGURES

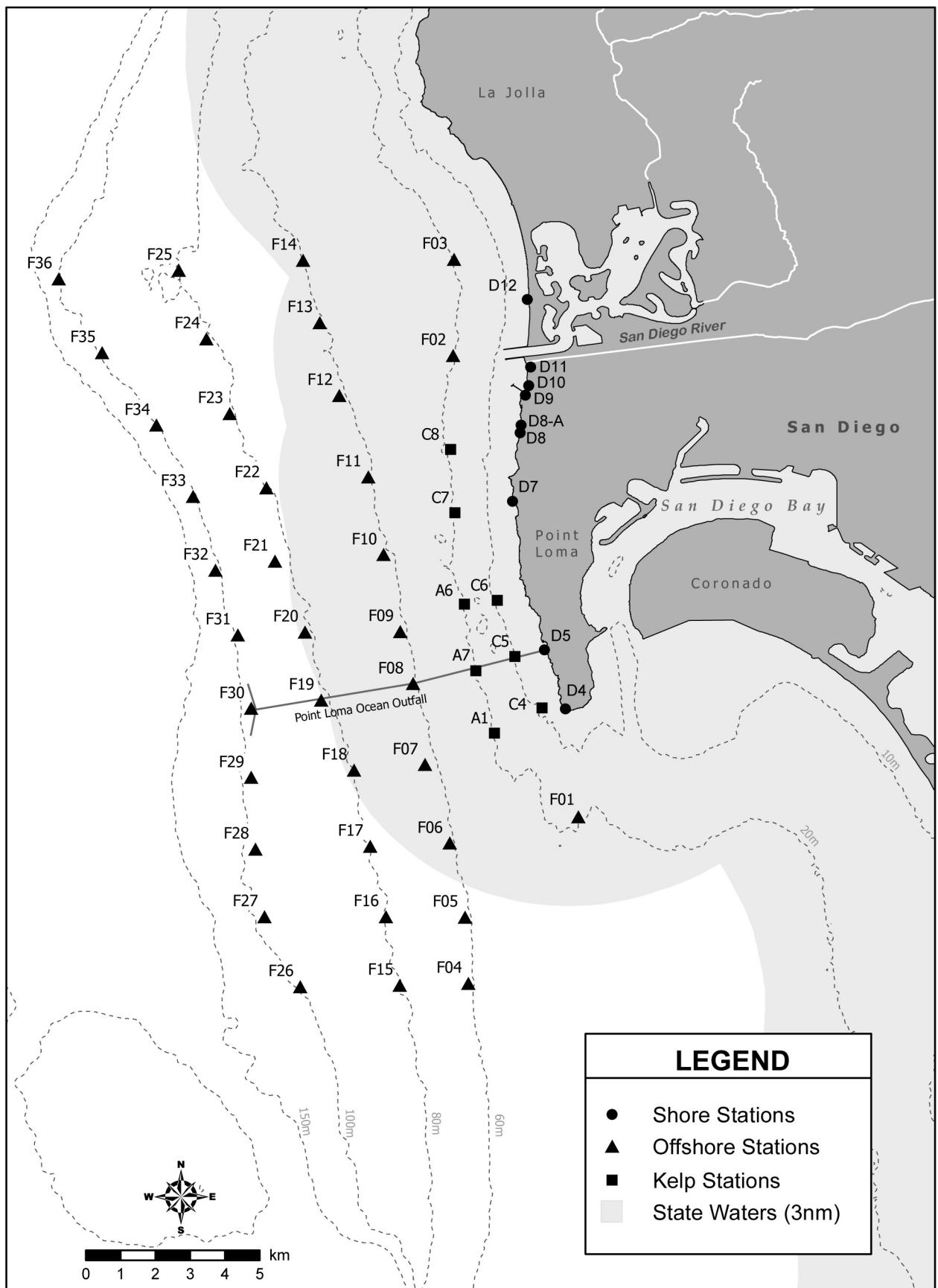


Figure 1.1 Station Map

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	D8-B	D9	D10	D11	D12
01 Mar 2018	9	24	6	101	ns	13	18	45	5
02 Mar 2018	8*	24*	2*	20	ns	12	18*	42*	5*
03 Mar 2018	8*	24*	2*	20*	ns	12	18*	42*	5*
04 Mar 2018	8*	24*	2*	20*	ns	12	18*	42*	5*
05 Mar 2018	8*	24*	2*	20*	ns	12	18*	42*	5*
06 Mar 2018	8*	24*	2*	20*	ns	12	18*	42*	5*
07 Mar 2018	6	14	2	20	ns	13	18	32	4
08 Mar 2018	6	14	2	20	ns	13	18	32	4
09 Mar 2018	8*	13*	ns	ns	ns	13	18*	24*	2*
10 Mar 2018	8*	13*	ns	ns	ns	18*	18*	24*	2*
11 Mar 2018	8*	13*	ns	ns	ns	18*	18*	24*	2*
12 Mar 2018	8*	13*	ns	ns	ns	18*	18*	24*	2*
13 Mar 2018	8*	13*	ns	ns	ns	18*	18*	24*	2*
14 Mar 2018	15	14	ns	ns	ns	21	26	35	3
15 Mar 2018	15	14	ns	ns	ns	21	26	35	3
16 Mar 2018	14*	13*	ns	ns	ns	21*	41*	34*	4*
17 Mar 2018	14*	13*	ns	ns	ns	21*	41*	34*	4*
18 Mar 2018	14*	13*	ns	ns	ns	21*	41*	34*	4*
19 Mar 2018	14*	13*	ns	ns	ns	21*	41*	34*	4*
20 Mar 2018	14*	13*	ns	ns	ns	21*	41*	34*	4*
21 Mar 2018	9	9	ns	ns	ns	16	38	19	3
22 Mar 2018	9	9	ns	ns	ns	16	38	19	3
23 Mar 2018	12*	8*	ns	ns	ns	21*	44*	19*	4*
24 Mar 2018	12*	8*	ns	ns	ns	21*	44*	19*	4*
25 Mar 2018	12*	8*	ns	ns	ns	21*	44*	19*	4*
26 Mar 2018	12*	8*	ns	ns	ns	21*	44*	19*	4*
27 Mar 2018	12*	8*	ns	ns	ns	21*	44*	19*	4*
28 Mar 2018	8	9	ns	ns	20*	19	38	19	3
29 Mar 2018	8	9	ns	ns	20*	19	38	19	3
30 Mar 2018	7*	6*	ns	ns	20*	15*	33*	16*	4*
31 Mar 2018	7*	6*	ns	ns	20*	15*	33*	16*	4*

* 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	D8-B	D9	D10	D11	D12
01 Mar 2018	2	3	5	44	ns	3	3	6	3
02 Mar 2018	2*	3*	2*	7	ns	3	3*	4*	2*
03 Mar 2018	2*	3*	2*	2*	ns	3	3*	4*	2*
04 Mar 2018	2*	3*	2*	2*	ns	3	3*	4*	2*
05 Mar 2018	2*	3*	2*	2*	ns	3	3*	4*	2*
06 Mar 2018	2*	3*	2*	2*	ns	3	3*	4*	2*
07 Mar 2018	2	3	2	2	ns	3	2	4	2
08 Mar 2018	2	3	2	2	ns	3	2	4	2
09 Mar 2018	2*	3*	ns	ns	ns	3	3*	3*	2*
10 Mar 2018	2*	3*	ns	ns	ns	3*	3*	3*	2*
11 Mar 2018	2*	3*	ns	ns	ns	3*	3*	3*	2*
12 Mar 2018	2*	3*	ns	ns	ns	3*	3*	3*	2*
13 Mar 2018	2*	3*	ns	ns	ns	3*	3*	3*	2*
14 Mar 2018	3	3	ns	ns	ns	3	3	4	3
15 Mar 2018	3	3	ns	ns	ns	3	3	4	3
16 Mar 2018	4*	3*	ns	ns	ns	2*	4*	3*	3*
17 Mar 2018	4*	3*	ns	ns	ns	2*	4*	3*	3*
18 Mar 2018	4*	3*	ns	ns	ns	2*	4*	3*	3*
19 Mar 2018	4*	3*	ns	ns	ns	2*	4*	3*	3*
20 Mar 2018	4*	3*	ns	ns	ns	2*	4*	3*	3*
21 Mar 2018	3	3	ns	ns	ns	2	4	3	3
22 Mar 2018	3	3	ns	ns	ns	2	4	3	3
23 Mar 2018	4*	3*	ns	ns	ns	2*	5*	3*	3*
24 Mar 2018	4*	3*	ns	ns	ns	2*	5*	3*	3*
25 Mar 2018	4*	3*	ns	ns	ns	2*	5*	3*	3*
26 Mar 2018	4*	3*	ns	ns	ns	2*	5*	3*	3*
27 Mar 2018	4*	3*	ns	ns	ns	2*	5*	3*	3*
28 Mar 2018	3	3	ns	ns	8*	2	4	3	3
29 Mar 2018	3	3	ns	ns	8*	2	4	3	3
30 Mar 2018	4*	2*	ns	ns	8*	2*	4*	3*	3*
31 Mar 2018	4*	2*	ns	ns	8*	2*	4*	3*	3*

* 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	D8-B	D9	D10	D11	D12
01 Mar 2018	4	3	7	8	ns	2	4	26	4
02 Mar 2018	5*	3*	2*	2*	ns	3	4*	18	3*
03 Mar 2018	5*	3*	2*	2*	ns	3	4*	20	3*
04 Mar 2018	5*	3*	2*	2*	ns	3	4*	20	3*
05 Mar 2018	5*	3*	2*	2*	ns	3	4*	20	3*
06 Mar 2018	5*	3*	2*	2*	ns	3	4*	20	3*
07 Mar 2018	4	3	2	2	ns	2	4	14	3
08 Mar 2018	4	3	2	2	ns	2	4	14	3
09 Mar 2018	5*	3*	ns	ns	ns	2	5*	17	2*
10 Mar 2018	5*	3*	ns	ns	ns	3*	5*	17	2*
11 Mar 2018	5*	3*	ns	ns	ns	3*	5*	17	2*
12 Mar 2018	5*	3*	ns	ns	ns	3*	5*	17	2*
13 Mar 2018	5*	3*	ns	ns	ns	3*	5*	17	2*
14 Mar 2018	9	3	ns	ns	ns	4	7	24	3
15 Mar 2018	9	3	ns	ns	ns	4	7	24	3
16 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
17 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
18 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
19 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
20 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
21 Mar 2018	5	3	ns	ns	ns	3	7	15	3
22 Mar 2018	5	3	ns	ns	ns	3	7	15	3
23 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
24 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
25 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
26 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
27 Mar 2018	6*	3*	ns	ns	ns	3*	10*	21	3*
28 Mar 2018	5	3	ns	ns	8*	3	7	21	3
29 Mar 2018	5	3	ns	ns	8*	3	7	21	3
30 Mar 2018	5*	2*	ns	ns	8*	3*	5*	16	3*
31 Mar 2018	5*	2*	ns	ns	8*	3*	5*	12	3*

* 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	D8-B	D9	D10	D11	D12
07 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
14 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
21 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
28 Mar 2018	IC	IC	ns	ns	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	D8-B	D9	D10	D11	D12
07 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
14 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
21 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
28 Mar 2018	IC	IC	ns	ns	IC	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	D8-B	D9	D10	D11	D12
01 Mar 2018	ns	ns	ns	ns	ns	ns	ns	IC	ns
07 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
14 Mar 2018	IC	IC	ns	ns	ns	IC	IC	E	IC
15 Mar 2018	ns	ns	ns	ns	ns	ns	ns	IC	ns
21 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
28 Mar 2018	IC	IC	ns	ns	IC	IC	IC	IC	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	D8-B	D9	D10	D11	D12
07 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
14 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
21 Mar 2018	IC	IC	ns	ns	ns	IC	IC	IC	IC
28 Mar 2018	IC	IC	ns	ns	IC	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.

Station	Date	Time	Total	Fecal	Enter	F:T
D4	07 Mar 2018	812	<2	<2	<2	1.00
D4	14 Mar 2018	813	240e	<20	62	0.08
D4	21 Mar 2018	846	<2	<2	<2	1.00
D4	28 Mar 2018	842	<2	<2	<2	1.00
D5	07 Mar 2018	801	<2	2e	<2	1.00
D5	14 Mar 2018	748	<20	<2	2e	0.10
D5	21 Mar 2018	902	2e	<2	<2	1.00
D5	28 Mar 2018	829	<20	2e	4e	0.10
D7	07 Mar 2018	831	ns	ns	ns	ns
D7	14 Mar 2018	829	ns	ns	ns	ns
D7	21 Mar 2018	939	ns	ns	ns	ns
D7	28 Mar 2018	917	ns	ns	ns	ns
D8-A	07 Mar 2018	845	ns	ns	ns	ns
D8-A	14 Mar 2018	844	ns	ns	ns	ns
D8-A	21 Mar 2018	1006	ns	ns	ns	ns
D8-B	28 Mar 2018	943	<20	8e	8e	0.40
D9	07 Mar 2018	900	<20	<2	<2	0.10
D9	14 Mar 2018	852	40e	2e	16e	0.05
D9	21 Mar 2018	1024	6e	<2	<2	0.33
D9	28 Mar 2018	1006	12e	<2	<2	0.17
D10	07 Mar 2018	909	<20	<2	4e	0.10
D10	14 Mar 2018	904	120e	8e	30e	0.07
D10	21 Mar 2018	1035	26e	8e	<2	0.31
D10	28 Mar 2018	1020	<20	2e	<2	0.10
D11	01 Mar 2018	1248	ns	ns	64	ns
D11	07 Mar 2018	941	10e	<2	2e	0.20
D11	14 Mar 2018	917	160e	14e	140e	0.09
D11	15 Mar 2018	1225	ns	ns	22e	ns
D11	21 Mar 2018	1048	2e	<2	2e	1.00
D11	28 Mar 2018	1034	20e	<2	<20	0.10
D12	07 Mar 2018	1001	<2	<2	<2	1.00
D12	14 Mar 2018	939	<20	8e	8e	0.40
D12	21 Mar 2018	1111	<2	<2	<2	1.00

Station	Date	Time	Total	Fecal	Enteric	F:T
D12	28 Mar 2018	1055	<2	<2	<2	1.00

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
D11	01 Mar 2018			Resample for exceedance on 2/28/18
D7	07 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D8-A	07 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D7	14 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D8-A	14 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D11	15 Mar 2018			Resample
D8-A	21 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D7	21 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D7	28 Mar 2018			Station inaccessible due to unsafe conditions and erosion
D8-B	28 Mar 2018			Alternate station for D8-A

Table 2.9

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

Station	Date	Parameter	Value
D4	07 Mar 2018	Arrive Time	812
D4	07 Mar 2018	Weather	Partly Cloudy
D4	07 Mar 2018	Wind Speed (kts)	0
D4	07 Mar 2018	Wind Dir	
D4	07 Mar 2018	Animal Life	None
D4	07 Mar 2018	Floatables	None
D4	07 Mar 2018	Water Color	Green
D4	07 Mar 2018	Current Direction	
D4	07 Mar 2018	Water Temp (C)	5.3
D4	07 Mar 2018	Wave Height Low (ft)	1
D4	07 Mar 2018	High Tide (ft)	4.4
D4	07 Mar 2018	High Tide Time	1216
D4	07 Mar 2018	Low Tide (ft)	1
D4	07 Mar 2018	Low Tide Time	716
D4	07 Mar 2018	Comments	Water clear
D4	14 Mar 2018	Arrive Time	813
D4	14 Mar 2018	Weather	Partly Cloudy
D4	14 Mar 2018	Wind Speed (kts)	1.7
D4	14 Mar 2018	Wind Dir	SW
D4	14 Mar 2018	Animal Life	None
D4	14 Mar 2018	Floatables	None
D4	14 Mar 2018	Water Color	Green
D4	14 Mar 2018	Current Direction	SW
D4	14 Mar 2018	Water Temp (C)	5.2
D4	14 Mar 2018	Wave Height Low (ft)	3
D4	14 Mar 2018	High Tide (ft)	5.1
D4	14 Mar 2018	High Tide Time	801
D4	14 Mar 2018	Low Tide (ft)	1.5
D4	14 Mar 2018	Low Tide Time	206
D4	14 Mar 2018	Comments	Debris; Water clear
D4	21 Mar 2018	Arrive Time	846
D4	21 Mar 2018	Weather	Sunny
D4	21 Mar 2018	Wind Speed (kts)	0.1
D4	21 Mar 2018	Wind Dir	W
D4	21 Mar 2018	Animal Life	None
D4	21 Mar 2018	Floatables	None
D4	21 Mar 2018	Water Color	Green
D4	21 Mar 2018	Current Direction	N
D4	21 Mar 2018	Water Temp (C)	15
D4	21 Mar 2018	Wave Height Low (ft)	1
D4	21 Mar 2018	High Tide (ft)	3.6
D4	21 Mar 2018	High Tide Time	31
D4	21 Mar 2018	Low Tide (ft)	0.3
D4	21 Mar 2018	Low Tide Time	632
D4	21 Mar 2018	Comments	Seagrass; Water clear
D4	28 Mar 2018	Arrive Time	842
D4	28 Mar 2018	Weather	Sunny
D4	28 Mar 2018	Wind Speed (kts)	0.8

Station	Date	Parameter	Value
D4	28 Mar 2018	Wind Dir	W
D4	28 Mar 2018	Animal Life	None
D4	28 Mar 2018	Floatables	None
D4	28 Mar 2018	Water Color	Green
D4	28 Mar 2018	Current Direction	N
D4	28 Mar 2018	Water Temp (C)	14.6
D4	28 Mar 2018	Wave Height Low (ft)	3
D4	28 Mar 2018	High Tide (ft)	5.5
D4	28 Mar 2018	High Tide Time	732
D4	28 Mar 2018	Low Tide (ft)	-0.9
D4	28 Mar 2018	Low Tide Time	1420
D4	28 Mar 2018	Comments	Kelp; Seagrass; Algae; Water clear
D5	07 Mar 2018	Arrive Time	801
D5	07 Mar 2018	Weather	Partly Cloudy
D5	07 Mar 2018	Wind Speed (kts)	0
D5	07 Mar 2018	Wind Dir	
D5	07 Mar 2018	Animal Life	None
D5	07 Mar 2018	Floatables	None
D5	07 Mar 2018	Water Color	Green
D5	07 Mar 2018	Current Direction	
D5	07 Mar 2018	Water Temp (C)	12
D5	07 Mar 2018	Wave Height Low (ft)	1
D5	07 Mar 2018	High Tide (ft)	4.4
D5	07 Mar 2018	High Tide Time	1216
D5	07 Mar 2018	Low Tide (ft)	1
D5	07 Mar 2018	Low Tide Time	716
D5	07 Mar 2018	Comments	Water clear
D5	14 Mar 2018	Arrive Time	748
D5	14 Mar 2018	Weather	Partly Cloudy
D5	14 Mar 2018	Wind Speed (kts)	2.1
D5	14 Mar 2018	Wind Dir	SW
D5	14 Mar 2018	Animal Life	6 Seagulls; 1 Seal
D5	14 Mar 2018	Floatables	None
D5	14 Mar 2018	Water Color	Green
D5	14 Mar 2018	Current Direction	SW
D5	14 Mar 2018	Water Temp (C)	8.7
D5	14 Mar 2018	Wave Height Low (ft)	3
D5	14 Mar 2018	High Tide (ft)	5.1
D5	14 Mar 2018	High Tide Time	801
D5	14 Mar 2018	Low Tide (ft)	1.5
D5	14 Mar 2018	Low Tide Time	206
D5	14 Mar 2018	Comments	Water clear
D5	21 Mar 2018	Arrive Time	902
D5	21 Mar 2018	Weather	Sunny
D5	21 Mar 2018	Wind Speed (kts)	0.1
D5	21 Mar 2018	Wind Dir	W
D5	21 Mar 2018	Animal Life	None
D5	21 Mar 2018	Floatables	None
D5	21 Mar 2018	Water Color	Green
D5	21 Mar 2018	Current Direction	N
D5	21 Mar 2018	Water Temp (C)	14.1
D5	21 Mar 2018	Wave Height Low (ft)	1

Station	Date	Parameter	Value
D5	21 Mar 2018	High Tide (ft)	3.6
D5	21 Mar 2018	High Tide Time	31
D5	21 Mar 2018	Low Tide (ft)	0.3
D5	21 Mar 2018	Low Tide Time	632
D5	21 Mar 2018	Comments	Kelp; Seagrass; Algae; Water clear
D5	28 Mar 2018	Arrive Time	829
D5	28 Mar 2018	Weather	Sunny
D5	28 Mar 2018	Wind Speed (kts)	1.2
D5	28 Mar 2018	Wind Dir	W
D5	28 Mar 2018	Animal Life	None
D5	28 Mar 2018	Floatables	None
D5	28 Mar 2018	Water Color	Green
D5	28 Mar 2018	Current Direction	N
D5	28 Mar 2018	Water Temp (C)	14.8
D5	28 Mar 2018	Wave Height Low (ft)	3
D5	28 Mar 2018	High Tide (ft)	5.5
D5	28 Mar 2018	High Tide Time	732
D5	28 Mar 2018	Low Tide (ft)	-0.9
D5	28 Mar 2018	Low Tide Time	1420
D5	28 Mar 2018	Comments	Kelp; Seagrass; Water clear
D7	07 Mar 2018	Arrive Time	831
D7	07 Mar 2018	Weather	Partly Cloudy
D7	07 Mar 2018	Wind Speed (kts)	0
D7	07 Mar 2018	Wind Dir	
D7	07 Mar 2018	Animal Life	None
D7	07 Mar 2018	Floatables	None
D7	07 Mar 2018	Water Color	Green
D7	07 Mar 2018	Current Direction	
D7	07 Mar 2018	Water Temp (C)	0
D7	07 Mar 2018	Wave Height Low (ft)	2
D7	07 Mar 2018	High Tide (ft)	4.4
D7	07 Mar 2018	High Tide Time	1216
D7	07 Mar 2018	Low Tide (ft)	1
D7	07 Mar 2018	Low Tide Time	716
D7	07 Mar 2018	Comments	4 Persons; 16 Surfers; Water clear; Station inaccessible due to unsafe conditions and erosion
D7	14 Mar 2018	Arrive Time	829
D7	14 Mar 2018	Weather	Partly Cloudy
D7	14 Mar 2018	Wind Speed (kts)	6.3
D7	14 Mar 2018	Wind Dir	SW
D7	14 Mar 2018	Animal Life	None
D7	14 Mar 2018	Floatables	None
D7	14 Mar 2018	Water Color	Green
D7	14 Mar 2018	Current Direction	SW
D7	14 Mar 2018	Water Temp (C)	0
D7	14 Mar 2018	Wave Height Low (ft)	2
D7	14 Mar 2018	High Tide (ft)	5.1
D7	14 Mar 2018	High Tide Time	801
D7	14 Mar 2018	Low Tide (ft)	1.5
D7	14 Mar 2018	Low Tide Time	206
D7	14 Mar 2018	Comments	Station inaccessible due to unsafe conditions and erosion

Station	Date	Parameter	Value
D7	21 Mar 2018	Arrive Time	939
D7	21 Mar 2018	Weather	Sunny
D7	21 Mar 2018	Wind Speed (kts)	1.1
D7	21 Mar 2018	Wind Dir	W
D7	21 Mar 2018	Animal Life	None
D7	21 Mar 2018	Floatables	None
D7	21 Mar 2018	Water Color	Green
D7	21 Mar 2018	Current Direction	N
D7	21 Mar 2018	Water Temp (C)	NS
D7	21 Mar 2018	Wave Height Low (ft)	2
D7	21 Mar 2018	High Tide (ft)	3.6
D7	21 Mar 2018	High Tide Time	31
D7	21 Mar 2018	Low Tide (ft)	0.3
D7	21 Mar 2018	Low Tide Time	632
D7	21 Mar 2018	Comments	Water clear; Station inaccessible due to unsafe conditions and erosion
D7	28 Mar 2018	Arrive Time	917
D7	28 Mar 2018	Weather	Sunny
D7	28 Mar 2018	Wind Speed (kts)	0
D7	28 Mar 2018	Wind Dir	
D7	28 Mar 2018	Animal Life	None
D7	28 Mar 2018	Floatables	None
D7	28 Mar 2018	Water Color	Green
D7	28 Mar 2018	Current Direction	
D7	28 Mar 2018	Water Temp (C)	
D7	28 Mar 2018	Wave Height Low (ft)	2
D7	28 Mar 2018	High Tide (ft)	5.5
D7	28 Mar 2018	High Tide Time	732
D7	28 Mar 2018	Low Tide (ft)	-0.9
D7	28 Mar 2018	Low Tide Time	1420
D7	28 Mar 2018	Comments	Kelp; Seagrass; Algae; 2 Surfers; Water clear; Station inaccessible due to unsafe conditions and erosion
D8-A	07 Mar 2018	Arrive Time	845
D8-A	07 Mar 2018	Weather	Partly Cloudy
D8-A	07 Mar 2018	Wind Speed (kts)	1.7
D8-A	07 Mar 2018	Wind Dir	N
D8-A	07 Mar 2018	Animal Life	None
D8-A	07 Mar 2018	Floatables	None
D8-A	07 Mar 2018	Water Color	Green
D8-A	07 Mar 2018	Current Direction	N
D8-A	07 Mar 2018	Water Temp (C)	6.1
D8-A	07 Mar 2018	Wave Height Low (ft)	1
D8-A	07 Mar 2018	High Tide (ft)	4.4
D8-A	07 Mar 2018	High Tide Time	1216
D8-A	07 Mar 2018	Low Tide (ft)	1
D8-A	07 Mar 2018	Low Tide Time	716
D8-A	07 Mar 2018	Comments	1 Surfer; Water clear; Station inaccessible due to unsafe conditions and erosion
D8-A	14 Mar 2018	Arrive Time	844
D8-A	14 Mar 2018	Weather	Moderate Rain
D8-A	14 Mar 2018	Wind Speed (kts)	5.4
D8-A	14 Mar 2018	Wind Dir	SW

Station	Date	Parameter	Value
D8-A	14 Mar 2018	Animal Life	None
D8-A	14 Mar 2018	Floatables	None
D8-A	14 Mar 2018	Water Color	Green
D8-A	14 Mar 2018	Current Direction	SW
D8-A	14 Mar 2018	Water Temp (C)	0
D8-A	14 Mar 2018	Wave Height Low (ft)	4
D8-A	14 Mar 2018	High Tide (ft)	5.1
D8-A	14 Mar 2018	High Tide Time	801
D8-A	14 Mar 2018	Low Tide (ft)	-0.4
D8-A	14 Mar 2018	Low Tide Time	1451
D8-A	14 Mar 2018	Comments	Kelp; Seagrass; Debris; Water clear; Station inaccessible due to unsafe conditions and erosion
D8-A	21 Mar 2018	Arrive Time	1006
D8-A	21 Mar 2018	Weather	Sunny
D8-A	21 Mar 2018	Wind Speed (kts)	2.7
D8-A	21 Mar 2018	Wind Dir	NW
D8-A	21 Mar 2018	Animal Life	None
D8-A	21 Mar 2018	Floatables	None
D8-A	21 Mar 2018	Water Color	Green
D8-A	21 Mar 2018	Current Direction	N
D8-A	21 Mar 2018	Water Temp (C)	15.1
D8-A	21 Mar 2018	Wave Height Low (ft)	2
D8-A	21 Mar 2018	High Tide (ft)	3.6
D8-A	21 Mar 2018	High Tide Time	31
D8-A	21 Mar 2018	Low Tide (ft)	0.3
D8-A	21 Mar 2018	Low Tide Time	632
D8-A	21 Mar 2018	Comments	Seagrass; Water clear; Station inaccessible due to unsafe conditions and erosion
D8-B	28 Mar 2018	Arrive Time	943
D8-B	28 Mar 2018	Weather	Sunny
D8-B	28 Mar 2018	Wind Speed (kts)	1.3
D8-B	28 Mar 2018	Wind Dir	W
D8-B	28 Mar 2018	Animal Life	None
D8-B	28 Mar 2018	Floatables	None
D8-B	28 Mar 2018	Water Color	Brown
D8-B	28 Mar 2018	Current Direction	N
D8-B	28 Mar 2018	Water Temp (C)	13.8
D8-B	28 Mar 2018	Wave Height Low (ft)	2
D8-B	28 Mar 2018	High Tide (ft)	5.5
D8-B	28 Mar 2018	High Tide Time	732
D8-B	28 Mar 2018	Low Tide (ft)	-0.9
D8-B	28 Mar 2018	Low Tide Time	1420
D8-B	28 Mar 2018	Comments	Kelp; Seagrass; Water clear; D8-A alternate station
D9	07 Mar 2018	Arrive Time	900
D9	07 Mar 2018	Weather	Partly Cloudy
D9	07 Mar 2018	Wind Speed (kts)	1.9
D9	07 Mar 2018	Wind Dir	N
D9	07 Mar 2018	Animal Life	None
D9	07 Mar 2018	Floatables	None
D9	07 Mar 2018	Water Color	Green
D9	07 Mar 2018	Current Direction	N
D9	07 Mar 2018	Water Temp (C)	6.3

Station	Date	Parameter	Value
D9	07 Mar 2018	Wave Height Low (ft)	1
D9	07 Mar 2018	High Tide (ft)	4.4
D9	07 Mar 2018	High Tide Time	1216
D9	07 Mar 2018	Low Tide (ft)	1
D9	07 Mar 2018	Low Tide Time	716
D9	07 Mar 2018	Comments	2 Persons; Water clear
D9	14 Mar 2018	Arrive Time	852
D9	14 Mar 2018	Weather	Partly Cloudy
D9	14 Mar 2018	Wind Speed (kts)	5.2
D9	14 Mar 2018	Wind Dir	NE
D9	14 Mar 2018	Animal Life	None
D9	14 Mar 2018	Floatables	None
D9	14 Mar 2018	Water Color	Green
D9	14 Mar 2018	Current Direction	NE
D9	14 Mar 2018	Water Temp (C)	6
D9	14 Mar 2018	Wave Height Low (ft)	4
D9	14 Mar 2018	High Tide (ft)	5.1
D9	14 Mar 2018	High Tide Time	801
D9	14 Mar 2018	Low Tide (ft)	-0.4
D9	14 Mar 2018	Low Tide Time	1451
D9	14 Mar 2018	Comments	Water clear; Signs posted for stairs to be sanitized due to fecal contamination
D9	21 Mar 2018	Arrive Time	1024
D9	21 Mar 2018	Weather	Sunny
D9	21 Mar 2018	Wind Speed (kts)	0.3
D9	21 Mar 2018	Wind Dir	NW
D9	21 Mar 2018	Animal Life	None
D9	21 Mar 2018	Floatables	None
D9	21 Mar 2018	Water Color	Green
D9	21 Mar 2018	Current Direction	N
D9	21 Mar 2018	Water Temp (C)	15
D9	21 Mar 2018	Wave Height Low (ft)	1
D9	21 Mar 2018	High Tide (ft)	3.6
D9	21 Mar 2018	High Tide Time	31
D9	21 Mar 2018	Low Tide (ft)	0.3
D9	21 Mar 2018	Low Tide Time	632
D9	21 Mar 2018	Comments	Seagrass; 2 Persons; Water clear
D9	28 Mar 2018	Arrive Time	1006
D9	28 Mar 2018	Weather	Sunny
D9	28 Mar 2018	Wind Speed (kts)	2.3
D9	28 Mar 2018	Wind Dir	W
D9	28 Mar 2018	Animal Life	None
D9	28 Mar 2018	Floatables	None
D9	28 Mar 2018	Water Color	Green
D9	28 Mar 2018	Current Direction	N
D9	28 Mar 2018	Water Temp (C)	17
D9	28 Mar 2018	Wave Height Low (ft)	3
D9	28 Mar 2018	High Tide (ft)	5.5
D9	28 Mar 2018	High Tide Time	732
D9	28 Mar 2018	Low Tide (ft)	-0.9
D9	28 Mar 2018	Low Tide Time	1420
D9	28 Mar 2018	Comments	Kelp; Seagrass; Algae; 5 Persons; 1 Surfer; Water clear

Station	Date	Parameter	Value
D10	07 Mar 2018	Arrive Time	909
D10	07 Mar 2018	Weather	Partly Cloudy
D10	07 Mar 2018	Wind Speed (kts)	2.5
D10	07 Mar 2018	Wind Dir	N
D10	07 Mar 2018	Animal Life	None
D10	07 Mar 2018	Floatables	None
D10	07 Mar 2018	Water Color	Green
D10	07 Mar 2018	Current Direction	N
D10	07 Mar 2018	Water Temp (C)	3.3
D10	07 Mar 2018	Wave Height Low (ft)	2
D10	07 Mar 2018	High Tide (ft)	4.4
D10	07 Mar 2018	High Tide Time	1216
D10	07 Mar 2018	Low Tide (ft)	1
D10	07 Mar 2018	Low Tide Time	716
D10	07 Mar 2018	Comments	5 Persons; 15 Surfers; Water clear
D10	14 Mar 2018	Arrive Time	904
D10	14 Mar 2018	Weather	Partly Cloudy
D10	14 Mar 2018	Wind Speed (kts)	5.7
D10	14 Mar 2018	Wind Dir	W
D10	14 Mar 2018	Animal Life	10 Birds
D10	14 Mar 2018	Floatables	None
D10	14 Mar 2018	Water Color	Green
D10	14 Mar 2018	Current Direction	W
D10	14 Mar 2018	Water Temp (C)	4.4
D10	14 Mar 2018	Wave Height Low (ft)	5
D10	14 Mar 2018	High Tide (ft)	5.1
D10	14 Mar 2018	High Tide Time	801
D10	14 Mar 2018	Low Tide (ft)	-0.4
D10	14 Mar 2018	Low Tide Time	1451
D10	14 Mar 2018	Comments	Kelp; Seagrass; 5 Persons; 5 Surfers; Water clear
D10	21 Mar 2018	Arrive Time	1035
D10	21 Mar 2018	Weather	Sunny
D10	21 Mar 2018	Wind Speed (kts)	6
D10	21 Mar 2018	Wind Dir	N
D10	21 Mar 2018	Animal Life	None
D10	21 Mar 2018	Floatables	None
D10	21 Mar 2018	Water Color	Green
D10	21 Mar 2018	Current Direction	N
D10	21 Mar 2018	Water Temp (C)	14
D10	21 Mar 2018	Wave Height Low (ft)	2
D10	21 Mar 2018	High Tide (ft)	3.6
D10	21 Mar 2018	High Tide Time	31
D10	21 Mar 2018	Low Tide (ft)	0.3
D10	21 Mar 2018	Low Tide Time	632
D10	21 Mar 2018	Comments	Kelp; Seagrass; 16 Persons; 9 Surfers; 2 Swimmers; Water clear
D10	28 Mar 2018	Arrive Time	1020
D10	28 Mar 2018	Weather	Sunny
D10	28 Mar 2018	Wind Speed (kts)	3.6
D10	28 Mar 2018	Wind Dir	W
D10	28 Mar 2018	Animal Life	None
D10	28 Mar 2018	Floatables	None

Station	Date	Parameter	Value
D10	28 Mar 2018	Water Color	Brown
D10	28 Mar 2018	Current Direction	N
D10	28 Mar 2018	Water Temp (C)	15.5
D10	28 Mar 2018	Wave Height Low (ft)	3
D10	28 Mar 2018	High Tide (ft)	5.5
D10	28 Mar 2018	High Tide Time	732
D10	28 Mar 2018	Low Tide (ft)	-0.9
D10	28 Mar 2018	Low Tide Time	1420
D10	28 Mar 2018	Comments	Kelp; Seagrass; Algae; 15 Persons; 7 Surfers; Water clear
D11	01 Mar 2018	Arrive Time	1248
D11	01 Mar 2018	Weather	Sunny
D11	01 Mar 2018	Wind Speed (kts)	7
D11	01 Mar 2018	Wind Dir	NW
D11	01 Mar 2018	Animal Life	None
D11	01 Mar 2018	Floatables	None
D11	01 Mar 2018	Water Color	Green
D11	01 Mar 2018	Current Direction	NW
D11	01 Mar 2018	Water Temp (C)	16
D11	01 Mar 2018	Wave Height Low (ft)	3
D11	01 Mar 2018	High Tide (ft)	6.2
D11	01 Mar 2018	High Tide Time	814
D11	01 Mar 2018	Low Tide (ft)	-1.4
D11	01 Mar 2018	Low Tide Time	1501
D11	01 Mar 2018	Comments	Kelp; Seagrass; Algae; 3 Surfers; Water turbid; Resample for exceedance on 2/28/18
D11	07 Mar 2018	Arrive Time	941
D11	07 Mar 2018	Weather	Partly Cloudy
D11	07 Mar 2018	Wind Speed (kts)	2.9
D11	07 Mar 2018	Wind Dir	N
D11	07 Mar 2018	Animal Life	None
D11	07 Mar 2018	Floatables	None
D11	07 Mar 2018	Water Color	Green
D11	07 Mar 2018	Current Direction	N
D11	07 Mar 2018	Water Temp (C)	11.3
D11	07 Mar 2018	Wave Height Low (ft)	2
D11	07 Mar 2018	High Tide (ft)	4.4
D11	07 Mar 2018	High Tide Time	1216
D11	07 Mar 2018	Low Tide (ft)	1
D11	07 Mar 2018	Low Tide Time	716
D11	07 Mar 2018	Comments	2 Persons; 40 Surfers; Water clear
D11	14 Mar 2018	Arrive Time	917
D11	14 Mar 2018	Weather	Partly Cloudy
D11	14 Mar 2018	Wind Speed (kts)	6.3
D11	14 Mar 2018	Wind Dir	W
D11	14 Mar 2018	Animal Life	7 Birds
D11	14 Mar 2018	Floatables	None
D11	14 Mar 2018	Water Color	Green
D11	14 Mar 2018	Current Direction	W
D11	14 Mar 2018	Water Temp (C)	4.3
D11	14 Mar 2018	Wave Height Low (ft)	4
D11	14 Mar 2018	High Tide (ft)	5.1
D11	14 Mar 2018	High Tide Time	801

Station	Date	Parameter	Value
D11	14 Mar 2018	Low Tide (ft)	-0.4
D11	14 Mar 2018	Low Tide Time	1451
D11	14 Mar 2018	Comments	7 Persons; 3 Surfers; Water clear
D11	15 Mar 2018	Arrive Time	1225
D11	15 Mar 2018	Weather	Sunny
D11	15 Mar 2018	Wind Speed (kts)	5
D11	15 Mar 2018	Wind Dir	W
D11	15 Mar 2018	Animal Life	None
D11	15 Mar 2018	Floatables	None
D11	15 Mar 2018	Water Color	Green
D11	15 Mar 2018	Current Direction	W
D11	15 Mar 2018	Water Temp (C)	12
D11	15 Mar 2018	Wave Height Low (ft)	3
D11	15 Mar 2018	High Tide (ft)	5.2
D11	15 Mar 2018	High Tide Time	835
D11	15 Mar 2018	Low Tide (ft)	-0.5
D11	15 Mar 2018	Low Tide Time	1517
D11	15 Mar 2018	Comments	Kelp; Seagrass; 1 Person; Water turbid; Resample
D11	21 Mar 2018	Arrive Time	1048
D11	21 Mar 2018	Weather	Sunny
D11	21 Mar 2018	Wind Speed (kts)	7.7
D11	21 Mar 2018	Wind Dir	N
D11	21 Mar 2018	Animal Life	None
D11	21 Mar 2018	Floatables	None
D11	21 Mar 2018	Water Color	Green
D11	21 Mar 2018	Current Direction	N
D11	21 Mar 2018	Water Temp (C)	16
D11	21 Mar 2018	Wave Height Low (ft)	2
D11	21 Mar 2018	High Tide (ft)	3.6
D11	21 Mar 2018	High Tide Time	31
D11	21 Mar 2018	Low Tide (ft)	0.3
D11	21 Mar 2018	Low Tide Time	632
D11	21 Mar 2018	Comments	Seagrass; 10 Persons; 7 Surfers; Water clear
D11	28 Mar 2018	Arrive Time	1034
D11	28 Mar 2018	Weather	Sunny
D11	28 Mar 2018	Wind Speed (kts)	2.1
D11	28 Mar 2018	Wind Dir	W
D11	28 Mar 2018	Animal Life	None
D11	28 Mar 2018	Floatables	None
D11	28 Mar 2018	Water Color	Green
D11	28 Mar 2018	Current Direction	N
D11	28 Mar 2018	Water Temp (C)	16.8
D11	28 Mar 2018	Wave Height Low (ft)	3
D11	28 Mar 2018	High Tide (ft)	5.5
D11	28 Mar 2018	High Tide Time	732
D11	28 Mar 2018	Low Tide (ft)	-0.9
D11	28 Mar 2018	Low Tide Time	1420
D11	28 Mar 2018	Comments	Kelp; Seagrass; 5 Persons; 4 Surfers; 3 Swimmers; Water clear
D12	07 Mar 2018	Arrive Time	1001
D12	07 Mar 2018	Weather	Partly Cloudy
D12	07 Mar 2018	Wind Speed (kts)	6.8

Station	Date	Parameter	Value
D12	07 Mar 2018	Wind Dir	E
D12	07 Mar 2018	Animal Life	None
D12	07 Mar 2018	Floatables	None
D12	07 Mar 2018	Water Color	Green
D12	07 Mar 2018	Current Direction	E
D12	07 Mar 2018	Water Temp (C)	3.9
D12	07 Mar 2018	Wave Height Low (ft)	1
D12	07 Mar 2018	High Tide (ft)	4.4
D12	07 Mar 2018	High Tide Time	1216
D12	07 Mar 2018	Low Tide (ft)	1
D12	07 Mar 2018	Low Tide Time	716
D12	07 Mar 2018	Comments	1 Jogger; 11 Persons; 1 Surfer; Water clear
D12	14 Mar 2018	Arrive Time	939
D12	14 Mar 2018	Weather	Partly Cloudy
D12	14 Mar 2018	Wind Speed (kts)	6.9
D12	14 Mar 2018	Wind Dir	W
D12	14 Mar 2018	Animal Life	4 Seagulls
D12	14 Mar 2018	Floatables	None
D12	14 Mar 2018	Water Color	Green
D12	14 Mar 2018	Current Direction	W
D12	14 Mar 2018	Water Temp (C)	6.6
D12	14 Mar 2018	Wave Height Low (ft)	3
D12	14 Mar 2018	High Tide (ft)	5.1
D12	14 Mar 2018	High Tide Time	801
D12	14 Mar 2018	Low Tide (ft)	-0.4
D12	14 Mar 2018	Low Tide Time	1451
D12	14 Mar 2018	Comments	Kelp; Seagrass; 1 Jogger; 24 Persons; Water clear
D12	21 Mar 2018	Arrive Time	1111
D12	21 Mar 2018	Weather	Sunny
D12	21 Mar 2018	Wind Speed (kts)	5
D12	21 Mar 2018	Wind Dir	N
D12	21 Mar 2018	Animal Life	None
D12	21 Mar 2018	Floatables	None
D12	21 Mar 2018	Water Color	Green
D12	21 Mar 2018	Current Direction	N
D12	21 Mar 2018	Water Temp (C)	14.1
D12	21 Mar 2018	Wave Height Low (ft)	2
D12	21 Mar 2018	High Tide (ft)	3.6
D12	21 Mar 2018	High Tide Time	31
D12	21 Mar 2018	Low Tide (ft)	0.3
D12	21 Mar 2018	Low Tide Time	632
D12	21 Mar 2018	Comments	Kelp; 39 Persons; 20 Swimmers; Water clear
D12	28 Mar 2018	Arrive Time	1055
D12	28 Mar 2018	Weather	Sunny
D12	28 Mar 2018	Wind Speed (kts)	3.8
D12	28 Mar 2018	Wind Dir	W
D12	28 Mar 2018	Animal Life	None
D12	28 Mar 2018	Floatables	None
D12	28 Mar 2018	Water Color	Green
D12	28 Mar 2018	Current Direction	N
D12	28 Mar 2018	Water Temp (C)	15
D12	28 Mar 2018	Wave Height Low (ft)	3

Station	Date	Parameter	Value
D12	28 Mar 2018	High Tide (ft)	5.5
D12	28 Mar 2018	High Tide Time	732
D12	28 Mar 2018	Low Tide (ft)	-0.9
D12	28 Mar 2018	Low Tide Time	1420
D12	28 Mar 2018	Comments	Kelp; Seagrass; 6 Persons; 5 Swimmers; 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 Mar 2018	6*	15*	10*	4*	5*	4*	7*	5*
02 Mar 2018	6*	15*	10*	4*	5*	4*	7*	5*
03 Mar 2018	6*	15*	10*	4*	5*	4*	7*	5*
04 Mar 2018	6*	15*	10*	4*	5*	4*	7*	5*
05 Mar 2018	11	16	8	3	4	3	6	4
06 Mar 2018	11	16	8	3	4	3	6	4
07 Mar 2018	17*	25*	11*	4*	5*	4*	7*	5*
08 Mar 2018	17*	25*	11*	4*	5*	4*	7*	5*
09 Mar 2018	17*	25*	11*	4*	5*	4*	7*	5*
10 Mar 2018	17*	25*	11*	4*	5*	4*	7*	5*
11 Mar 2018	17*	25*	11*	4*	5*	4*	7*	5*
12 Mar 2018	12	15	8	3	4	3	6	5
13 Mar 2018	12	15	8	3	4	3	6	5
14 Mar 2018	12	15	8	3	4	3	6	5
15 Mar 2018	12	15	8	3	4	3	6	5
16 Mar 2018	12	15	8	3	4	3	6	5
17 Mar 2018	12	15	8	3	4	3	6	5
18 Mar 2018	13*	10*	5*	4*	4*	4*	5*	5*
19 Mar 2018	14	13	7	4	4	3	8	5
20 Mar 2018	14	13	7	4	4	3	8	5
21 Mar 2018	14	13	7	4	4	3	8	5
22 Mar 2018	16*	10*	4*	2*	2*	2*	6*	4*
23 Mar 2018	16*	10*	4*	2*	2*	2*	6*	4*
24 Mar 2018	16*	10*	4*	2*	2*	2*	6*	4*
25 Mar 2018	16*	10*	4*	2*	2*	2*	6*	4*
26 Mar 2018	11	7	4	2	2	2	7	4
27 Mar 2018	11	7	4	2	2	2	7	4
28 Mar 2018	10*	8*	4*	2*	2*	2*	8*	4*
29 Mar 2018	10*	8*	4*	2*	2*	2*	8*	4*
30 Mar 2018	10*	8*	4*	2*	2*	2*	8*	4*
31 Mar 2018	10*	8*	4*	2*	2*	2*	8*	4*

* 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 Mar 2018	2*	3*	3*	2*	2*	2*	2*	2*
02 Mar 2018	2*	3*	3*	2*	2*	2*	2*	2*
03 Mar 2018	2*	3*	3*	2*	2*	2*	2*	2*
04 Mar 2018	2*	3*	3*	2*	2*	2*	2*	2*
05 Mar 2018	3	3	2	2	2	2	2	2
06 Mar 2018	3	3	2	2	2	2	2	2
07 Mar 2018	3*	3*	3*	2*	2*	2*	2*	2*
08 Mar 2018	3*	3*	3*	2*	2*	2*	2*	2*
09 Mar 2018	3*	3*	3*	2*	2*	2*	2*	2*
10 Mar 2018	3*	3*	3*	2*	2*	2*	2*	2*
11 Mar 2018	3*	3*	3*	2*	2*	2*	2*	2*
12 Mar 2018	3	3	2	2	2	2	2	2
13 Mar 2018	3	3	2	2	2	2	2	2
14 Mar 2018	3	3	2	2	2	2	2	2
15 Mar 2018	3	3	2	2	2	2	2	2
16 Mar 2018	3	3	2	2	2	2	2	2
17 Mar 2018	3	3	2	2	2	2	2	2
18 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
19 Mar 2018	3	2	2	2	2	2	2	2
20 Mar 2018	3	2	2	2	2	2	2	2
21 Mar 2018	3	2	2	2	2	2	2	2
22 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
23 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
24 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
25 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
26 Mar 2018	3	2	2	2	2	2	2	2
27 Mar 2018	3	2	2	2	2	2	2	2
28 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
29 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
30 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*
31 Mar 2018	3*	2*	2*	2*	2*	2*	2*	2*

* 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 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
02 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
03 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
04 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
05 Mar 2018	2	2	2	2	2	2	2	2
06 Mar 2018	2	2	2	2	2	2	2	2
07 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
08 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
09 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
10 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
11 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
12 Mar 2018	2	2	2	2	2	2	2	2
13 Mar 2018	2	2	2	2	2	2	2	2
14 Mar 2018	2	2	2	2	2	2	2	2
15 Mar 2018	2	2	2	2	2	2	2	2
16 Mar 2018	2	2	2	2	2	2	2	2
17 Mar 2018	2	2	2	2	2	2	2	2
18 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
19 Mar 2018	2	2	2	2	2	2	2	2
20 Mar 2018	2	2	2	2	2	2	2	2
21 Mar 2018	2	2	2	2	2	2	2	2
22 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
23 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
24 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
25 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
26 Mar 2018	2	2	2	2	2	2	2	2
27 Mar 2018	2	2	2	2	2	2	2	2
28 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
29 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
30 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*
31 Mar 2018	2*	2*	2*	2*	2*	2*	2*	2*

* 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
05 Mar 2018	IC							
12 Mar 2018	IC							
19 Mar 2018	IC							
26 Mar 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
05 Mar 2018	IC							
12 Mar 2018	IC							
19 Mar 2018	IC							
26 Mar 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
05 Mar 2018	IC							
12 Mar 2018	IC							
19 Mar 2018	IC							
26 Mar 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
05 Mar 2018	IC							
12 Mar 2018	IC							
19 Mar 2018	IC							
26 Mar 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* (Entero) 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	Entero	F:T	Temp	XMS	DO	Sal	pH
A1	26 Mar 2018	903	1	<2	<2	<2	1.00	12.6	78.06	6.8	33.54	8.0
A1	26 Mar 2018	903	12	<2	<2	<2	1.00	11.3	84.63	5.2	33.55	7.8
A1	26 Mar 2018	903	18	<2	<2	<2	1.00	11.0	83.39	4.7	33.59	7.8
A1	19 Mar 2018	904	1	4e	<2	<2	0.50	13.3	79.79	7.0	33.51	8.0
A1	19 Mar 2018	904	12	4e	<2	<2	0.50	11.4	84.98	5.1	33.55	7.8
A1	19 Mar 2018	904	18	46	<2	<2	0.04	11.1	82.98	4.6	33.61	7.8
A1	12 Mar 2018	929	1	<2	<2	2e	1.00	15.4	81.61	8.5	33.48	8.1
A1	12 Mar 2018	929	12	<2	<2	<2	1.00	14.1	77.12	7.9	33.49	8.1
A1	12 Mar 2018	929	18	4e	2e	2e	0.50	13.0	79.75	6.7	33.50	8.0
A1	05 Mar 2018	833	1	2e	<2	<2	1.00	14.3	78.58	7.9	33.47	8.1
A1	05 Mar 2018	833	12	34e	<2	<2	0.06	12.2	83.22	5.8	33.56	7.9
A1	05 Mar 2018	833	18	340e	20e	4e	0.06	11.6	82.26	5.1	33.56	7.8
A6	26 Mar 2018	934	1	<2	<2	<2	1.00	13.2	72.57	7.1	33.55	8.0
A6	26 Mar 2018	934	12	2e	<2	<2	1.00	11.2	82.40	4.8	33.59	7.8
A6	26 Mar 2018	934	18	2e	<2	<2	1.00	11.1	81.93	4.6	33.61	7.8
A6	19 Mar 2018	938	1	<2	<2	<2	1.00	14.6	75.53	8.5	33.48	8.1
A6	19 Mar 2018	938	12	32e	<2	<2	0.06	11.3	82.49	4.9	33.57	7.8
A6	19 Mar 2018	938	18	86	2e	<2	0.02	11.2	82.02	4.6	33.59	7.8
A6	12 Mar 2018	959	1	<2	<2	<2	1.00	15.4	81.32	8.6	33.47	8.1
A6	12 Mar 2018	959	12	2e	<2	<2	1.00	13.9	79.59	7.7	33.49	8.1
A6	12 Mar 2018	959	18	<2	<2	<2	1.00	13.6	78.45	7.3	33.49	8.0
A6	05 Mar 2018	904	1	20e	<2	<2	0.10	14.3	80.93	8.2	33.50	8.1
A6	05 Mar 2018	904	12	4e	<2	<2	0.50	12.6	83.04	6.0	33.52	7.9
A6	05 Mar 2018	904	18	56	2e	2e	0.04	11.9	83.27	5.3	33.54	7.9
A7	26 Mar 2018	918	1	<2	<2	<2	1.00	13.1	78.34	7.4	33.55	8.0
A7	26 Mar 2018	918	12	<2	<2	<2	1.00	11.1	82.61	4.6	33.60	7.8
A7	26 Mar 2018	918	18	<2	<2	<2	1.00	11.0	81.95	4.5	33.62	7.8
A7	19 Mar 2018	921	1	2e	2e	2e	1.00	14.1	78.23	7.7	33.50	8.1
A7	19 Mar 2018	921	12	14e	<2	<2	0.14	11.3	83.31	5.0	33.57	7.8
A7	19 Mar 2018	921	18	66	2e	<2	0.03	11.1	82.44	4.6	33.60	7.8
A7	12 Mar 2018	944	1	<2	<2	<2	1.00	15.4	81.71	8.5	33.47	8.1
A7	12 Mar 2018	944	12	<2	<2	<2	1.00	13.3	79.29	7.2	33.50	8.0
A7	12 Mar 2018	944	18	<2	<2	<2	1.00	13.1	79.25	6.9	33.50	8.0
A7	05 Mar 2018	849	1	<2	<2	2e	1.00	14.4	79.11	8.1	33.47	8.1
A7	05 Mar 2018	849	12	<2	<2	<2	1.00	12.5	82.66	6.0	33.52	7.9
A7	05 Mar 2018	849	18	6e	<2	<2	0.33	11.8	82.90	5.3	33.54	7.8

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C4	26 Mar 2018	1054	1	<2	<2	<2	1.00	12.9	76.22	7.1	33.55	8.0
C4	26 Mar 2018	1054	3	<2	<2	<2	1.00	12.7	76.46	6.8	33.56	8.0
C4	26 Mar 2018	1054	9	<2	<2	<2	1.00	11.4	74.51	5.6	33.57	7.9
C4	19 Mar 2018	1057	1	2e	<2	<2	1.00	14.4	76.72	7.6	33.50	8.1
C4	19 Mar 2018	1057	3	4e	<2	<2	0.50	13.3	78.02	6.7	33.58	8.0
C4	19 Mar 2018	1057	9	4e	<2	<2	0.50	11.6	83.54	5.2	33.54	7.8
C4	12 Mar 2018	1117	1	<2	<2	<2	1.00	15.4	77.80	8.5	33.46	8.1
C4	12 Mar 2018	1117	3	<2	<2	<2	1.00	15.4	77.17	8.6	33.47	8.1
C4	12 Mar 2018	1117	9	<2	<2	<2	1.00	14.8	77.37	8.5	33.49	8.1
C4	05 Mar 2018	1025	1	<2	<2	<2	1.00	14.4	79.63	8.1	33.52	8.1
C4	05 Mar 2018	1025	3	<2	<2	<2	1.00	14.2	79.71	7.9	33.52	8.1
C4	05 Mar 2018	1025	9	2e	<2	<2	1.00	13.8	76.90	7.6	33.52	8.1
C5	26 Mar 2018	1044	1	<2	<2	<2	1.00	13.9	61.78	7.3	33.54	8.0
C5	26 Mar 2018	1044	3	<2	<2	<2	1.00	13.8	61.47	7.2	33.55	8.0
C5	26 Mar 2018	1044	9	<2	<2	<2	1.00	11.4	75.58	5.0	33.55	7.8
C5	19 Mar 2018	1043	1	<2	<2	<2	1.00	14.7	75.66	7.8	33.49	8.1
C5	19 Mar 2018	1043	3	2e	<2	<2	1.00	14.5	75.68	7.5	33.52	8.1
C5	19 Mar 2018	1043	9	4e	2e	<2	0.50	12.1	82.82	5.4	33.55	7.9
C5	12 Mar 2018	1104	1	<2	<2	<2	1.00	15.5	77.55	9.0	33.46	8.2
C5	12 Mar 2018	1104	3	<2	<2	<2	1.00	15.5	77.43	9.0	33.46	8.2
C5	12 Mar 2018	1104	9	<2	<2	<2	1.00	14.6	81.76	8.3	33.49	8.1
C5	05 Mar 2018	1013	1	<2	<2	<2	1.00	15.0	77.75	8.2	33.52	8.1
C5	05 Mar 2018	1013	3	<2	<2	<2	1.00	14.7	77.16	8.1	33.53	8.1
C5	05 Mar 2018	1013	9	4e	<2	<2	0.50	13.1	83.55	6.7	33.51	8.0
C6	26 Mar 2018	1031	1	<2	<2	<2	1.00	13.8	67.09	7.3	33.54	8.0
C6	26 Mar 2018	1031	3	<2	<2	<2	1.00	13.7	66.61	7.3	33.54	8.0
C6	26 Mar 2018	1031	9	2e	2e	<2	1.00	11.6	78.02	5.1	33.55	7.8
C6	19 Mar 2018	1028	1	2e	<2	<2	1.00	14.9	75.57	8.5	33.47	8.2
C6	19 Mar 2018	1028	3	<2	<2	<2	1.00	14.4	75.72	7.8	33.52	8.1
C6	19 Mar 2018	1028	9	<2	<2	<2	1.00	12.3	83.13	5.5	33.53	7.9
C6	12 Mar 2018	1052	1	<2	<2	<2	1.00	15.6	79.33	9.1	33.46	8.2
C6	12 Mar 2018	1052	3	<2	<2	<2	1.00	15.6	79.19	9.1	33.46	8.2
C6	12 Mar 2018	1052	9	<2	<2	<2	1.00	14.6	78.43	8.6	33.48	8.1
C6	05 Mar 2018	959	1	<2	<2	<2	1.00	14.9	77.77	8.0	33.46	8.1
C6	05 Mar 2018	959	3	<2	<2	<2	1.00	14.6	77.41	8.0	33.48	8.1
C6	05 Mar 2018	959	9	2e	<2	<2	1.00	12.7	82.80	6.1	33.52	7.9
C7	26 Mar 2018	952	1	<2	<2	<2	1.00	13.4	74.40	7.5	33.53	8.0
C7	26 Mar 2018	952	12	20e	2e	<2	0.10	11.1	80.67	4.6	33.60	7.8
C7	26 Mar 2018	952	18	18e	<2	<2	0.11	11.0	80.93	4.5	33.62	7.8
C7	19 Mar 2018	953	1	<2	<2	<2	1.00	14.7	74.73	8.1	33.45	8.1
C7	19 Mar 2018	953	12	24e	<2	<2	0.08	11.5	81.21	5.0	33.56	7.8

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C7	19 Mar 2018	953	18	140e	8e	2e	0.06	11.0	80.75	4.5	33.61	7.8
C7	12 Mar 2018	1015	1	<2	<2	<2	1.00	15.2	79.82	8.6	33.47	8.1
C7	12 Mar 2018	1015	12	<2	<2	<2	1.00	14.2	75.10	8.2	33.49	8.1
C7	12 Mar 2018	1015	18	2e	<2	<2	1.00	13.2	81.83	6.8	33.55	8.0
C7	05 Mar 2018	923	1	<2	<2	<2	1.00	14.4	78.91	8.0	33.44	8.1
C7	05 Mar 2018	923	12	<2	<2	<2	1.00	13.2	81.36	6.7	33.52	8.0
C7	05 Mar 2018	923	18	4e	<2	<2	0.50	11.6	83.01	5.3	33.56	7.9
C8	26 Mar 2018	1005	1	<2	<2	<2	1.00	13.1	74.81	6.8	33.53	8.0
C8	26 Mar 2018	1005	12	<2	<2	<2	1.00	11.2	82.85	4.9	33.58	7.8
C8	26 Mar 2018	1005	18	12e	<2	<2	0.17	11.2	78.74	4.7	33.59	7.8
C8	19 Mar 2018	1006	1	2e	<2	<2	1.00	14.3	76.75	7.9	33.49	8.1
C8	19 Mar 2018	1006	12	<2	<2	<2	1.00	12.3	81.35	6.1	33.52	7.9
C8	19 Mar 2018	1006	18	12e	<2	<2	0.17	11.3	81.96	4.9	33.59	7.8
C8	12 Mar 2018	1028	1	10e	<2	<2	0.20	15.5	79.67	8.5	33.44	8.1
C8	12 Mar 2018	1028	12	<2	<2	<2	1.00	14.3	73.59	8.3	33.48	8.1
C8	12 Mar 2018	1028	18	2e	<2	<2	1.00	13.9	77.71	7.5	33.50	8.1
C8	05 Mar 2018	937	1	<2	<2	<2	1.00	14.2	81.35	7.7	33.48	8.0
C8	05 Mar 2018	937	12	<2	<2	<2	1.00	13.8	81.12	7.5	33.50	8.0
C8	05 Mar 2018	937	18	2e	<2	2e	1.00	13.1	82.16	6.5	33.51	8.0

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	05 Mar 2018	Depth (m)	18
A1	05 Mar 2018	Arrive Time	833
A1	05 Mar 2018	Depart Time	837
A1	05 Mar 2018	Air Temp (C)	13
A1	05 Mar 2018	Weather	Haze
A1	05 Mar 2018	Visibility (mi)	12
A1	05 Mar 2018	Wind Speed (kts)	3
A1	05 Mar 2018	Wind Dir	NW
A1	05 Mar 2018	Water Color	Green
A1	05 Mar 2018	Wave Ht Low (ft)	1
A1	05 Mar 2018	Wave Period (sec)	13
A1	05 Mar 2018	Sea State	Light chop
A1	05 Mar 2018	High Tide (ft)	4.23
A1	05 Mar 2018	High Tide Time	1108
A1	05 Mar 2018	Low Tide (ft)	0.51
A1	05 Mar 2018	Low Tide Time	515
A1	05 Mar 2018	Comments	none
A1	12 Mar 2018	Depth (m)	19
A1	12 Mar 2018	Arrive Time	929
A1	12 Mar 2018	Depart Time	937
A1	12 Mar 2018	Air Temp (C)	16
A1	12 Mar 2018	Weather	Haze
A1	12 Mar 2018	Visibility (mi)	6
A1	12 Mar 2018	Wind Speed (kts)	5
A1	12 Mar 2018	Wind Dir	N
A1	12 Mar 2018	Water Color	Greenish-Blue
A1	12 Mar 2018	Wave Ht Low (ft)	3
A1	12 Mar 2018	Wave Period (sec)	11
A1	12 Mar 2018	Sea State	Calm
A1	12 Mar 2018	High Tide (ft)	4.5
A1	12 Mar 2018	High Tide Time	645
A1	12 Mar 2018	Low Tide (ft)	2.17
A1	12 Mar 2018	Low Tide Time	1253
A1	12 Mar 2018	Comments	none
A1	19 Mar 2018	Depth (m)	19
A1	19 Mar 2018	Arrive Time	904
A1	19 Mar 2018	Depart Time	916
A1	19 Mar 2018	Air Temp (C)	13
A1	19 Mar 2018	Weather	Partly Cloudy
A1	19 Mar 2018	Visibility (mi)	12
A1	19 Mar 2018	Wind Speed (kts)	4
A1	19 Mar 2018	Wind Dir	N
A1	19 Mar 2018	Water Color	Brownish-Green
A1	19 Mar 2018	Wave Ht Low (ft)	3
A1	19 Mar 2018	Wave Period (sec)	9
A1	19 Mar 2018	Sea State	Calm
A1	19 Mar 2018	High Tide (ft)	4.64
A1	19 Mar 2018	High Tide Time	1055
A1	19 Mar 2018	Low Tide (ft)	0.22

Station	Date	Parameter	Value
A1	19 Mar 2018	Low Tide Time	457
A1	19 Mar 2018	Comments	none
A1	26 Mar 2018	Depth (m)	19
A1	26 Mar 2018	Arrive Time	903
A1	26 Mar 2018	Depart Time	909
A1	26 Mar 2018	Air Temp (C)	12
A1	26 Mar 2018	Weather	Haze
A1	26 Mar 2018	Visibility (mi)	4
A1	26 Mar 2018	Wind Speed (kts)	6
A1	26 Mar 2018	Wind Dir	E
A1	26 Mar 2018	Water Color	Greenish-Blue
A1	26 Mar 2018	Wave Ht Low (ft)	8
A1	26 Mar 2018	Wave Period (sec)	7
A1	26 Mar 2018	Sea State	Confused swell
A1	26 Mar 2018	High Tide (ft)	4.85
A1	26 Mar 2018	High Tide Time	533
A1	26 Mar 2018	Low Tide (ft)	-0.49
A1	26 Mar 2018	Low Tide Time	53
A1	26 Mar 2018	Comments	none
A6	05 Mar 2018	Depth (m)	20
A6	05 Mar 2018	Arrive Time	904
A6	05 Mar 2018	Depart Time	910
A6	05 Mar 2018	Air Temp (C)	13
A6	05 Mar 2018	Weather	Haze
A6	05 Mar 2018	Visibility (mi)	12
A6	05 Mar 2018	Wind Speed (kts)	1
A6	05 Mar 2018	Wind Dir	N
A6	05 Mar 2018	Water Color	Green
A6	05 Mar 2018	Wave Ht Low (ft)	1
A6	05 Mar 2018	Wave Period (sec)	13
A6	05 Mar 2018	Sea State	Light chop
A6	05 Mar 2018	High Tide (ft)	4.23
A6	05 Mar 2018	High Tide Time	1108
A6	05 Mar 2018	Low Tide (ft)	0.51
A6	05 Mar 2018	Low Tide Time	515
A6	05 Mar 2018	Comments	Lobster floats
A6	12 Mar 2018	Depth (m)	19
A6	12 Mar 2018	Arrive Time	959
A6	12 Mar 2018	Depart Time	1004
A6	12 Mar 2018	Air Temp (C)	16
A6	12 Mar 2018	Weather	Haze
A6	12 Mar 2018	Visibility (mi)	6
A6	12 Mar 2018	Wind Speed (kts)	7
A6	12 Mar 2018	Wind Dir	N
A6	12 Mar 2018	Water Color	Greenish-Blue
A6	12 Mar 2018	Wave Ht Low (ft)	3
A6	12 Mar 2018	Wave Period (sec)	11
A6	12 Mar 2018	Sea State	Calm
A6	12 Mar 2018	High Tide (ft)	4.5
A6	12 Mar 2018	High Tide Time	645
A6	12 Mar 2018	Low Tide (ft)	2.17
A6	12 Mar 2018	Low Tide Time	1253

Station	Date	Parameter	Value
A6	12 Mar 2018	Comments	Lobster floats
A6	19 Mar 2018	Depth (m)	19
A6	19 Mar 2018	Arrive Time	938
A6	19 Mar 2018	Depart Time	942
A6	19 Mar 2018	Air Temp (C)	13
A6	19 Mar 2018	Weather	Partly Cloudy
A6	19 Mar 2018	Visibility (mi)	12
A6	19 Mar 2018	Wind Speed (kts)	4
A6	19 Mar 2018	Wind Dir	N
A6	19 Mar 2018	Water Color	Greenish-Blue
A6	19 Mar 2018	Wave Ht Low (ft)	3
A6	19 Mar 2018	Wave Period (sec)	9
A6	19 Mar 2018	Sea State	Calm
A6	19 Mar 2018	High Tide (ft)	4.64
A6	19 Mar 2018	High Tide Time	1055
A6	19 Mar 2018	Low Tide (ft)	0.22
A6	19 Mar 2018	Low Tide Time	457
A6	19 Mar 2018	Comments	none
A6	26 Mar 2018	Depth (m)	21
A6	26 Mar 2018	Arrive Time	934
A6	26 Mar 2018	Depart Time	939
A6	26 Mar 2018	Air Temp (C)	13
A6	26 Mar 2018	Weather	Haze
A6	26 Mar 2018	Visibility (mi)	4
A6	26 Mar 2018	Wind Speed (kts)	6
A6	26 Mar 2018	Wind Dir	SE
A6	26 Mar 2018	Water Color	Greenish-Blue
A6	26 Mar 2018	Wave Ht Low (ft)	8
A6	26 Mar 2018	Wave Period (sec)	7
A6	26 Mar 2018	Sea State	Confused swell
A6	26 Mar 2018	High Tide (ft)	4.85
A6	26 Mar 2018	High Tide Time	533
A6	26 Mar 2018	Low Tide (ft)	-0.49
A6	26 Mar 2018	Low Tide Time	53
A6	26 Mar 2018	Comments	Grey whale on station
A7	05 Mar 2018	Depth (m)	20
A7	05 Mar 2018	Arrive Time	849
A7	05 Mar 2018	Depart Time	854
A7	05 Mar 2018	Air Temp (C)	13
A7	05 Mar 2018	Weather	Haze
A7	05 Mar 2018	Visibility (mi)	12
A7	05 Mar 2018	Wind Speed (kts)	2
A7	05 Mar 2018	Wind Dir	NW
A7	05 Mar 2018	Water Color	Green
A7	05 Mar 2018	Wave Ht Low (ft)	1
A7	05 Mar 2018	Wave Period (sec)	13
A7	05 Mar 2018	Sea State	Light chop
A7	05 Mar 2018	High Tide (ft)	4.23
A7	05 Mar 2018	High Tide Time	1108
A7	05 Mar 2018	Low Tide (ft)	0.51
A7	05 Mar 2018	Low Tide Time	515
A7	05 Mar 2018	Comments	Lobster floats

Station	Date	Parameter	Value
A7	12 Mar 2018	Depth (m)	19
A7	12 Mar 2018	Arrive Time	944
A7	12 Mar 2018	Depart Time	948
A7	12 Mar 2018	Air Temp (C)	16
A7	12 Mar 2018	Weather	Haze
A7	12 Mar 2018	Visibility (mi)	6
A7	12 Mar 2018	Wind Speed (kts)	6
A7	12 Mar 2018	Wind Dir	N
A7	12 Mar 2018	Water Color	Greenish-Blue
A7	12 Mar 2018	Wave Ht Low (ft)	3
A7	12 Mar 2018	Wave Period (sec)	11
A7	12 Mar 2018	Sea State	Calm
A7	12 Mar 2018	High Tide (ft)	4.5
A7	12 Mar 2018	High Tide Time	645
A7	12 Mar 2018	Low Tide (ft)	2.17
A7	12 Mar 2018	Low Tide Time	1253
A7	12 Mar 2018	Comments	none
A7	19 Mar 2018	Depth (m)	20
A7	19 Mar 2018	Arrive Time	921
A7	19 Mar 2018	Depart Time	928
A7	19 Mar 2018	Air Temp (C)	13
A7	19 Mar 2018	Weather	Partly Cloudy
A7	19 Mar 2018	Visibility (mi)	12
A7	19 Mar 2018	Wind Speed (kts)	4
A7	19 Mar 2018	Wind Dir	E
A7	19 Mar 2018	Water Color	Greenish-Blue
A7	19 Mar 2018	Wave Ht Low (ft)	3
A7	19 Mar 2018	Wave Period (sec)	9
A7	19 Mar 2018	Sea State	Calm
A7	19 Mar 2018	High Tide (ft)	4.64
A7	19 Mar 2018	High Tide Time	1055
A7	19 Mar 2018	Low Tide (ft)	0.22
A7	19 Mar 2018	Low Tide Time	457
A7	19 Mar 2018	Comments	none
A7	26 Mar 2018	Depth (m)	20
A7	26 Mar 2018	Arrive Time	918
A7	26 Mar 2018	Depart Time	923
A7	26 Mar 2018	Air Temp (C)	12
A7	26 Mar 2018	Weather	Haze
A7	26 Mar 2018	Visibility (mi)	4
A7	26 Mar 2018	Wind Speed (kts)	6
A7	26 Mar 2018	Wind Dir	E
A7	26 Mar 2018	Water Color	Greenish-Blue
A7	26 Mar 2018	Wave Ht Low (ft)	8
A7	26 Mar 2018	Wave Period (sec)	7
A7	26 Mar 2018	Sea State	Confused swell
A7	26 Mar 2018	High Tide (ft)	4.85
A7	26 Mar 2018	High Tide Time	533
A7	26 Mar 2018	Low Tide (ft)	-0.49
A7	26 Mar 2018	Low Tide Time	53
A7	26 Mar 2018	Comments	Grey whales on station

Station	Date	Parameter	Value
C4	05 Mar 2018	Depth (m)	11
C4	05 Mar 2018	Arrive Time	1025
C4	05 Mar 2018	Depart Time	1028
C4	05 Mar 2018	Air Temp (C)	14
C4	05 Mar 2018	Weather	Haze
C4	05 Mar 2018	Visibility (mi)	12
C4	05 Mar 2018	Wind Speed (kts)	7
C4	05 Mar 2018	Wind Dir	N
C4	05 Mar 2018	Water Color	Greenish-Blue
C4	05 Mar 2018	Wave Ht Low (ft)	1
C4	05 Mar 2018	Wave Period (sec)	13
C4	05 Mar 2018	Sea State	Light chop
C4	05 Mar 2018	High Tide (ft)	4.23
C4	05 Mar 2018	High Tide Time	1108
C4	05 Mar 2018	Low Tide (ft)	0.51
C4	05 Mar 2018	Low Tide Time	515
C4	05 Mar 2018	Comments	Kelp debris
C4	12 Mar 2018	Depth (m)	10
C4	12 Mar 2018	Arrive Time	1117
C4	12 Mar 2018	Depart Time	1121
C4	12 Mar 2018	Air Temp (C)	16
C4	12 Mar 2018	Weather	Haze
C4	12 Mar 2018	Visibility (mi)	6
C4	12 Mar 2018	Wind Speed (kts)	9
C4	12 Mar 2018	Wind Dir	NW
C4	12 Mar 2018	Water Color	Green
C4	12 Mar 2018	Wave Ht Low (ft)	3
C4	12 Mar 2018	Wave Period (sec)	11
C4	12 Mar 2018	Sea State	Light chop
C4	12 Mar 2018	High Tide (ft)	4.5
C4	12 Mar 2018	High Tide Time	645
C4	12 Mar 2018	Low Tide (ft)	2.17
C4	12 Mar 2018	Low Tide Time	1253
C4	12 Mar 2018	Comments	Kelp
C4	19 Mar 2018	Depth (m)	11
C4	19 Mar 2018	Arrive Time	1057
C4	19 Mar 2018	Depart Time	1100
C4	19 Mar 2018	Air Temp (C)	13
C4	19 Mar 2018	Weather	Partly Cloudy
C4	19 Mar 2018	Visibility (mi)	12
C4	19 Mar 2018	Wind Speed (kts)	3
C4	19 Mar 2018	Wind Dir	S
C4	19 Mar 2018	Water Color	Greenish-Blue
C4	19 Mar 2018	Wave Ht Low (ft)	3
C4	19 Mar 2018	Wave Period (sec)	9
C4	19 Mar 2018	Sea State	Calm
C4	19 Mar 2018	High Tide (ft)	4.64
C4	19 Mar 2018	High Tide Time	1055
C4	19 Mar 2018	Low Tide (ft)	0.22
C4	19 Mar 2018	Low Tide Time	457
C4	19 Mar 2018	Comments	none
C4	26 Mar 2018	Depth (m)	10

Station	Date	Parameter	Value
C4	26 Mar 2018	Arrive Time	1054
C4	26 Mar 2018	Depart Time	1058
C4	26 Mar 2018	Air Temp (C)	13
C4	26 Mar 2018	Weather	Haze
C4	26 Mar 2018	Visibility (mi)	5
C4	26 Mar 2018	Wind Speed (kts)	6
C4	26 Mar 2018	Wind Dir	S
C4	26 Mar 2018	Water Color	Greenish-Blue
C4	26 Mar 2018	Wave Ht Low (ft)	8
C4	26 Mar 2018	Wave Period (sec)	7
C4	26 Mar 2018	Sea State	Confused swell
C4	26 Mar 2018	High Tide (ft)	4.85
C4	26 Mar 2018	High Tide Time	533
C4	26 Mar 2018	Low Tide (ft)	-0.49
C4	26 Mar 2018	Low Tide Time	53
C4	26 Mar 2018	Comments	Kelp
C5	05 Mar 2018	Depth (m)	12
C5	05 Mar 2018	Arrive Time	1013
C5	05 Mar 2018	Depart Time	1016
C5	05 Mar 2018	Air Temp (C)	14
C5	05 Mar 2018	Weather	Haze
C5	05 Mar 2018	Visibility (mi)	12
C5	05 Mar 2018	Wind Speed (kts)	5
C5	05 Mar 2018	Wind Dir	N
C5	05 Mar 2018	Water Color	Green
C5	05 Mar 2018	Wave Ht Low (ft)	1
C5	05 Mar 2018	Wave Period (sec)	13
C5	05 Mar 2018	Sea State	Calm
C5	05 Mar 2018	High Tide (ft)	4.23
C5	05 Mar 2018	High Tide Time	1108
C5	05 Mar 2018	Low Tide (ft)	0.51
C5	05 Mar 2018	Low Tide Time	515
C5	05 Mar 2018	Comments	Kelp
C5	12 Mar 2018	Depth (m)	11
C5	12 Mar 2018	Arrive Time	1104
C5	12 Mar 2018	Depart Time	1110
C5	12 Mar 2018	Air Temp (C)	16
C5	12 Mar 2018	Weather	Haze
C5	12 Mar 2018	Visibility (mi)	6
C5	12 Mar 2018	Wind Speed (kts)	8
C5	12 Mar 2018	Wind Dir	NW
C5	12 Mar 2018	Water Color	Green
C5	12 Mar 2018	Wave Ht Low (ft)	3
C5	12 Mar 2018	Wave Period (sec)	11
C5	12 Mar 2018	Sea State	Light chop
C5	12 Mar 2018	High Tide (ft)	4.5
C5	12 Mar 2018	High Tide Time	645
C5	12 Mar 2018	Low Tide (ft)	2.17
C5	12 Mar 2018	Low Tide Time	1253
C5	12 Mar 2018	Comments	Kelp
C5	19 Mar 2018	Depth (m)	12
C5	19 Mar 2018	Arrive Time	1043

Station	Date	Parameter	Value
C5	19 Mar 2018	Depart Time	1049
C5	19 Mar 2018	Air Temp (C)	14
C5	19 Mar 2018	Weather	Partly Cloudy
C5	19 Mar 2018	Visibility (mi)	12
C5	19 Mar 2018	Wind Speed (kts)	2
C5	19 Mar 2018	Wind Dir	NW
C5	19 Mar 2018	Water Color	Greenish-Blue
C5	19 Mar 2018	Wave Ht Low (ft)	3
C5	19 Mar 2018	Wave Period (sec)	9
C5	19 Mar 2018	Sea State	Calm
C5	19 Mar 2018	High Tide (ft)	4.64
C5	19 Mar 2018	High Tide Time	1055
C5	19 Mar 2018	Low Tide (ft)	0.22
C5	19 Mar 2018	Low Tide Time	457
C5	19 Mar 2018	Comments	none
C5	26 Mar 2018	Depth (m)	11
C5	26 Mar 2018	Arrive Time	1044
C5	26 Mar 2018	Depart Time	1047
C5	26 Mar 2018	Air Temp (C)	13
C5	26 Mar 2018	Weather	Haze
C5	26 Mar 2018	Visibility (mi)	5
C5	26 Mar 2018	Wind Speed (kts)	6
C5	26 Mar 2018	Wind Dir	SE
C5	26 Mar 2018	Water Color	Greenish-Blue
C5	26 Mar 2018	Wave Ht Low (ft)	8
C5	26 Mar 2018	Wave Period (sec)	7
C5	26 Mar 2018	Sea State	Confused swell
C5	26 Mar 2018	High Tide (ft)	4.85
C5	26 Mar 2018	High Tide Time	533
C5	26 Mar 2018	Low Tide (ft)	-0.49
C5	26 Mar 2018	Low Tide Time	53
C5	26 Mar 2018	Comments	Kelp
C6	05 Mar 2018	Depth (m)	11
C6	05 Mar 2018	Arrive Time	959
C6	05 Mar 2018	Depart Time	1005
C6	05 Mar 2018	Air Temp (C)	14
C6	05 Mar 2018	Weather	Haze
C6	05 Mar 2018	Visibility (mi)	12
C6	05 Mar 2018	Wind Speed (kts)	3
C6	05 Mar 2018	Wind Dir	N
C6	05 Mar 2018	Water Color	Green
C6	05 Mar 2018	Wave Ht Low (ft)	1
C6	05 Mar 2018	Wave Period (sec)	13
C6	05 Mar 2018	Sea State	Light chop
C6	05 Mar 2018	High Tide (ft)	4.23
C6	05 Mar 2018	High Tide Time	1108
C6	05 Mar 2018	Low Tide (ft)	0.51
C6	05 Mar 2018	Low Tide Time	515
C6	05 Mar 2018	Comments	Kelp
C6	12 Mar 2018	Depth (m)	10
C6	12 Mar 2018	Arrive Time	1052
C6	12 Mar 2018	Depart Time	1057

Station	Date	Parameter	Value
C6	12 Mar 2018	Air Temp (C)	16
C6	12 Mar 2018	Weather	Haze
C6	12 Mar 2018	Visibility (mi)	6
C6	12 Mar 2018	Wind Speed (kts)	5
C6	12 Mar 2018	Wind Dir	NW
C6	12 Mar 2018	Water Color	Greenish-Blue
C6	12 Mar 2018	Wave Ht Low (ft)	3
C6	12 Mar 2018	Wave Period (sec)	11
C6	12 Mar 2018	Sea State	Light chop
C6	12 Mar 2018	High Tide (ft)	4.5
C6	12 Mar 2018	High Tide Time	645
C6	12 Mar 2018	Low Tide (ft)	2.17
C6	12 Mar 2018	Low Tide Time	1253
C6	12 Mar 2018	Comments	Kelp
C6	19 Mar 2018	Depth (m)	10
C6	19 Mar 2018	Arrive Time	1028
C6	19 Mar 2018	Depart Time	1032
C6	19 Mar 2018	Air Temp (C)	14
C6	19 Mar 2018	Weather	Partly Cloudy
C6	19 Mar 2018	Visibility (mi)	12
C6	19 Mar 2018	Wind Speed (kts)	4
C6	19 Mar 2018	Wind Dir	N
C6	19 Mar 2018	Water Color	Greenish-Blue
C6	19 Mar 2018	Wave Ht Low (ft)	3
C6	19 Mar 2018	Wave Period (sec)	9
C6	19 Mar 2018	Sea State	Calm
C6	19 Mar 2018	High Tide (ft)	4.64
C6	19 Mar 2018	High Tide Time	1055
C6	19 Mar 2018	Low Tide (ft)	0.22
C6	19 Mar 2018	Low Tide Time	457
C6	19 Mar 2018	Comments	none
C6	26 Mar 2018	Depth (m)	10
C6	26 Mar 2018	Arrive Time	1031
C6	26 Mar 2018	Depart Time	1035
C6	26 Mar 2018	Air Temp (C)	13
C6	26 Mar 2018	Weather	Haze
C6	26 Mar 2018	Visibility (mi)	5
C6	26 Mar 2018	Wind Speed (kts)	7
C6	26 Mar 2018	Wind Dir	S
C6	26 Mar 2018	Water Color	Greenish-Blue
C6	26 Mar 2018	Wave Ht Low (ft)	8
C6	26 Mar 2018	Wave Period (sec)	7
C6	26 Mar 2018	Sea State	Confused swell
C6	26 Mar 2018	High Tide (ft)	4.85
C6	26 Mar 2018	High Tide Time	533
C6	26 Mar 2018	Low Tide (ft)	-0.49
C6	26 Mar 2018	Low Tide Time	53
C6	26 Mar 2018	Comments	Kelp
C7	05 Mar 2018	Depth (m)	19
C7	05 Mar 2018	Arrive Time	923
C7	05 Mar 2018	Depart Time	928
C7	05 Mar 2018	Air Temp (C)	14

Station	Date	Parameter	Value
C7	05 Mar 2018	Weather	Haze
C7	05 Mar 2018	Visibility (mi)	12
C7	05 Mar 2018	Wind Speed (kts)	1
C7	05 Mar 2018	Wind Dir	NW
C7	05 Mar 2018	Water Color	Greenish-Blue
C7	05 Mar 2018	Wave Ht Low (ft)	1
C7	05 Mar 2018	Wave Period (sec)	13
C7	05 Mar 2018	Sea State	Light chop
C7	05 Mar 2018	High Tide (ft)	4.23
C7	05 Mar 2018	High Tide Time	1108
C7	05 Mar 2018	Low Tide (ft)	0.51
C7	05 Mar 2018	Low Tide Time	515
C7	05 Mar 2018	Comments	none
C7	12 Mar 2018	Depth (m)	19
C7	12 Mar 2018	Arrive Time	1015
C7	12 Mar 2018	Depart Time	1021
C7	12 Mar 2018	Air Temp (C)	16
C7	12 Mar 2018	Weather	Haze
C7	12 Mar 2018	Visibility (mi)	6
C7	12 Mar 2018	Wind Speed (kts)	5
C7	12 Mar 2018	Wind Dir	N
C7	12 Mar 2018	Water Color	Greenish-Blue
C7	12 Mar 2018	Wave Ht Low (ft)	3
C7	12 Mar 2018	Wave Period (sec)	11
C7	12 Mar 2018	Sea State	Light chop
C7	12 Mar 2018	High Tide (ft)	4.5
C7	12 Mar 2018	High Tide Time	645
C7	12 Mar 2018	Low Tide (ft)	2.17
C7	12 Mar 2018	Low Tide Time	1253
C7	12 Mar 2018	Comments	Kelp debris
C7	19 Mar 2018	Depth (m)	19
C7	19 Mar 2018	Arrive Time	953
C7	19 Mar 2018	Depart Time	958
C7	19 Mar 2018	Air Temp (C)	13
C7	19 Mar 2018	Weather	Partly Cloudy
C7	19 Mar 2018	Visibility (mi)	12
C7	19 Mar 2018	Wind Speed (kts)	4
C7	19 Mar 2018	Wind Dir	N
C7	19 Mar 2018	Water Color	Greenish-Blue
C7	19 Mar 2018	Wave Ht Low (ft)	3
C7	19 Mar 2018	Wave Period (sec)	9
C7	19 Mar 2018	Sea State	Calm
C7	19 Mar 2018	High Tide (ft)	4.64
C7	19 Mar 2018	High Tide Time	1055
C7	19 Mar 2018	Low Tide (ft)	0.22
C7	19 Mar 2018	Low Tide Time	457
C7	19 Mar 2018	Comments	none
C7	26 Mar 2018	Depth (m)	18
C7	26 Mar 2018	Arrive Time	952
C7	26 Mar 2018	Depart Time	955
C7	26 Mar 2018	Air Temp (C)	13
C7	26 Mar 2018	Weather	Haze

Station	Date	Parameter	Value
C7	26 Mar 2018	Visibility (mi)	5
C7	26 Mar 2018	Wind Speed (kts)	8
C7	26 Mar 2018	Wind Dir	E
C7	26 Mar 2018	Water Color	Greenish-Blue
C7	26 Mar 2018	Wave Ht Low (ft)	8
C7	26 Mar 2018	Wave Period (sec)	7
C7	26 Mar 2018	Sea State	Confused swell
C7	26 Mar 2018	High Tide (ft)	4.85
C7	26 Mar 2018	High Tide Time	533
C7	26 Mar 2018	Low Tide (ft)	-0.49
C7	26 Mar 2018	Low Tide Time	53
C7	26 Mar 2018	Comments	Boats
C8	05 Mar 2018	Depth (m)	20
C8	05 Mar 2018	Arrive Time	937
C8	05 Mar 2018	Depart Time	941
C8	05 Mar 2018	Air Temp (C)	13
C8	05 Mar 2018	Weather	Haze
C8	05 Mar 2018	Visibility (mi)	12
C8	05 Mar 2018	Wind Speed (kts)	2
C8	05 Mar 2018	Wind Dir	N
C8	05 Mar 2018	Water Color	Greenish-Blue
C8	05 Mar 2018	Wave Ht Low (ft)	1
C8	05 Mar 2018	Wave Period (sec)	13
C8	05 Mar 2018	Sea State	Light chop
C8	05 Mar 2018	High Tide (ft)	4.23
C8	05 Mar 2018	High Tide Time	1108
C8	05 Mar 2018	Low Tide (ft)	0.51
C8	05 Mar 2018	Low Tide Time	515
C8	05 Mar 2018	Comments	Kelp debris
C8	12 Mar 2018	Depth (m)	20
C8	12 Mar 2018	Arrive Time	1028
C8	12 Mar 2018	Depart Time	1035
C8	12 Mar 2018	Air Temp (C)	15
C8	12 Mar 2018	Weather	Haze
C8	12 Mar 2018	Visibility (mi)	6
C8	12 Mar 2018	Wind Speed (kts)	7
C8	12 Mar 2018	Wind Dir	NW
C8	12 Mar 2018	Water Color	Greenish-Blue
C8	12 Mar 2018	Wave Ht Low (ft)	3
C8	12 Mar 2018	Wave Period (sec)	11
C8	12 Mar 2018	Sea State	Light chop
C8	12 Mar 2018	High Tide (ft)	4.5
C8	12 Mar 2018	High Tide Time	645
C8	12 Mar 2018	Low Tide (ft)	2.17
C8	12 Mar 2018	Low Tide Time	1253
C8	12 Mar 2018	Comments	none
C8	19 Mar 2018	Depth (m)	20
C8	19 Mar 2018	Arrive Time	1006
C8	19 Mar 2018	Depart Time	1011
C8	19 Mar 2018	Air Temp (C)	13
C8	19 Mar 2018	Weather	Partly Cloudy
C8	19 Mar 2018	Visibility (mi)	12

Station	Date	Parameter	Value
C8	19 Mar 2018	Wind Speed (kts)	4
C8	19 Mar 2018	Wind Dir	NE
C8	19 Mar 2018	Water Color	Greenish-Blue
C8	19 Mar 2018	Wave Ht Low (ft)	3
C8	19 Mar 2018	Wave Period (sec)	9
C8	19 Mar 2018	Sea State	Calm
C8	19 Mar 2018	High Tide (ft)	4.64
C8	19 Mar 2018	High Tide Time	1055
C8	19 Mar 2018	Low Tide (ft)	0.22
C8	19 Mar 2018	Low Tide Time	457
C8	19 Mar 2018	Comments	none
C8	26 Mar 2018	Depth (m)	20
C8	26 Mar 2018	Arrive Time	1005
C8	26 Mar 2018	Depart Time	1009
C8	26 Mar 2018	Air Temp (C)	13
C8	26 Mar 2018	Weather	Haze
C8	26 Mar 2018	Visibility (mi)	5
C8	26 Mar 2018	Wind Speed (kts)	5
C8	26 Mar 2018	Wind Dir	SE
C8	26 Mar 2018	Water Color	Greenish-Blue
C8	26 Mar 2018	Wave Ht Low (ft)	8
C8	26 Mar 2018	Wave Period (sec)	7
C8	26 Mar 2018	Sea State	Confused swell
C8	26 Mar 2018	High Tide (ft)	4.85
C8	26 Mar 2018	High Tide Time	533
C8	26 Mar 2018	Low Tide (ft)	-0.49
C8	26 Mar 2018	Low Tide Time	53
C8	26 Mar 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 ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A1	05 Mar 2018	1	14.27	78.58	7.9	33.47	8.1	24.9	0.93
A1	05 Mar 2018	2	14.28	79.99	8.0	33.48	8.1	25.0	0.91
A1	05 Mar 2018	3	14.22	79.58	7.9	33.48	8.1	25.0	0.94
A1	05 Mar 2018	4	14.03	79.72	7.8	33.51	8.1	25.0	1.05
A1	05 Mar 2018	5	13.87	80.50	7.6	33.51	8.0	25.1	1.14
A1	05 Mar 2018	6	13.77	80.97	7.4	33.51	8.0	25.1	1.21
A1	05 Mar 2018	7	13.57	81.51	7.1	33.52	8.0	25.1	1.25
A1	05 Mar 2018	8	13.06	81.91	6.8	33.56	8.0	25.3	1.24
A1	05 Mar 2018	9	12.61	82.62	6.3	33.55	7.9	25.3	1.12
A1	05 Mar 2018	10	12.51	82.93	6.1	33.53	7.9	25.4	1.00
A1	05 Mar 2018	11	12.43	83.11	6.0	33.53	7.9	25.4	0.90
A1	05 Mar 2018	12	12.16	83.22	5.8	33.56	7.9	25.4	0.82
A1	05 Mar 2018	13	11.90	83.34	5.5	33.55	7.9	25.5	0.72
A1	05 Mar 2018	14	11.74	83.24	5.3	33.55	7.8	25.5	0.62
A1	05 Mar 2018	15	11.67	82.89	5.2	33.55	7.8	25.5	0.56
A1	05 Mar 2018	16	11.61	82.59	5.2	33.56	7.8	25.5	0.53
A1	05 Mar 2018	17	11.59	82.45	5.1	33.56	7.8	25.5	0.52
A1	05 Mar 2018	18	11.57	82.26	5.1	33.56	7.8	25.6	0.48
A1	05 Mar 2018	19	11.54	82.23	5.1	33.57	7.8	25.6	0.43
A1	05 Mar 2018	20	11.55	81.90	5.1	33.56	7.8	25.6	0.40
A1	12 Mar 2018	1	15.37	81.61	8.5	33.48	8.1	24.7	1.23
A1	12 Mar 2018	2	15.37	81.57	8.5	33.48	8.1	24.7	1.26
A1	12 Mar 2018	3	15.30	81.41	8.5	33.48	8.1	24.7	1.42
A1	12 Mar 2018	4	15.16	80.10	8.7	33.48	8.1	24.8	1.82
A1	12 Mar 2018	5	14.97	78.04	8.9	33.48	8.1	24.8	2.30
A1	12 Mar 2018	6	14.77	75.24	8.9	33.48	8.1	24.8	2.89
A1	12 Mar 2018	7	14.64	72.92	8.7	33.48	8.1	24.9	3.18
A1	12 Mar 2018	8	14.36	73.16	8.4	33.50	8.1	24.9	3.32
A1	12 Mar 2018	9	14.23	74.93	8.2	33.49	8.1	25.0	3.08
A1	12 Mar 2018	10	14.19	75.73	8.2	33.49	8.1	25.0	2.88
A1	12 Mar 2018	11	14.17	76.05	8.1	33.48	8.1	25.0	2.54
A1	12 Mar 2018	12	14.08	77.12	7.9	33.49	8.1	25.0	2.22
A1	12 Mar 2018	13	13.94	78.61	7.6	33.49	8.0	25.0	2.16
A1	12 Mar 2018	14	13.81	79.36	7.4	33.49	8.0	25.1	2.14
A1	12 Mar 2018	15	13.69	79.82	7.2	33.50	8.0	25.1	1.99
A1	12 Mar 2018	16	13.27	79.81	7.0	33.52	8.0	25.2	2.12
A1	12 Mar 2018	17	13.10	79.84	6.8	33.51	8.0	25.2	2.03
A1	12 Mar 2018	18	12.98	79.75	6.7	33.50	8.0	25.2	1.99
A1	12 Mar 2018	19	12.89	79.57	6.6	33.50	8.0	25.3	2.18
A1	12 Mar 2018	20	12.69	79.66	6.4	33.51	7.9	25.3	2.11
A1	19 Mar 2018	1	13.33	79.79	7.0	33.51	8.0	25.2	1.41
A1	19 Mar 2018	2	13.35	78.67	7.0	33.50	8.0	25.2	1.35
A1	19 Mar 2018	3	13.31	79.35	6.9	33.51	8.0	25.2	1.57
A1	19 Mar 2018	4	13.21	79.75	6.6	33.52	8.0	25.2	1.69
A1	19 Mar 2018	5	12.41	80.16	6.1	33.56	8.0	25.4	1.68
A1	19 Mar 2018	6	12.20	81.71	5.8	33.53	7.9	25.4	1.57
A1	19 Mar 2018	7	12.06	82.08	5.7	33.52	7.9	25.4	1.39
A1	19 Mar 2018	8	11.76	84.16	5.6	33.52	7.9	25.5	1.52

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A1	19 Mar 2018	9	11.61	85.58	5.5	33.52	7.9	25.5	1.33
A1	19 Mar 2018	10	11.57	85.61	5.4	33.52	7.8	25.5	1.05
A1	19 Mar 2018	11	11.45	85.03	5.2	33.54	7.8	25.6	0.98
A1	19 Mar 2018	12	11.36	84.98	5.1	33.55	7.8	25.6	0.93
A1	19 Mar 2018	13	11.26	85.15	5.0	33.56	7.8	25.6	0.92
A1	19 Mar 2018	14	11.20	84.89	4.9	33.57	7.8	25.6	0.93
A1	19 Mar 2018	15	11.19	84.61	4.8	33.58	7.8	25.6	0.94
A1	19 Mar 2018	16	11.15	84.16	4.7	33.59	7.8	25.6	0.93
A1	19 Mar 2018	17	11.12	83.80	4.7	33.59	7.8	25.7	0.98
A1	19 Mar 2018	18	11.06	82.98	4.6	33.61	7.8	25.7	0.91
A1	19 Mar 2018	19	10.99	81.91	4.5	33.62	7.8	25.7	0.83
A1	26 Mar 2018	1	12.64	78.06	6.8	33.54	8.0	25.3	0.83
A1	26 Mar 2018	2	12.63	79.11	6.8	33.55	8.0	25.3	0.89
A1	26 Mar 2018	3	12.58	79.33	6.8	33.54	8.0	25.3	1.03
A1	26 Mar 2018	4	12.50	79.57	6.7	33.54	8.0	25.4	1.09
A1	26 Mar 2018	5	12.40	79.94	6.6	33.54	8.0	25.4	1.27
A1	26 Mar 2018	6	12.28	80.38	6.5	33.54	8.0	25.4	1.36
A1	26 Mar 2018	7	12.18	80.78	6.3	33.53	8.0	25.4	1.45
A1	26 Mar 2018	8	12.12	81.23	6.1	33.53	7.9	25.4	1.45
A1	26 Mar 2018	9	11.75	82.48	5.8	33.53	7.9	25.5	1.33
A1	26 Mar 2018	10	11.77	82.81	5.6	33.54	7.9	25.5	1.34
A1	26 Mar 2018	11	11.44	83.99	5.3	33.55	7.9	25.6	1.12
A1	26 Mar 2018	12	11.35	84.63	5.2	33.55	7.8	25.6	1.00
A1	26 Mar 2018	13	11.24	85.06	5.0	33.56	7.8	25.6	0.93
A1	26 Mar 2018	14	11.28	84.89	5.0	33.55	7.8	25.6	0.81
A1	26 Mar 2018	15	11.15	84.36	5.0	33.58	7.8	25.6	0.76
A1	26 Mar 2018	16	11.10	83.90	4.8	33.58	7.8	25.7	0.80
A1	26 Mar 2018	17	11.05	83.65	4.7	33.59	7.8	25.7	0.75
A1	26 Mar 2018	18	11.04	83.39	4.7	33.59	7.8	25.7	0.65
A1	26 Mar 2018	19	11.03	83.42	4.7	33.60	7.8	25.7	0.62
A6	05 Mar 2018	1	14.35	80.93	8.2	33.50	8.1	25.0	0.65
A6	05 Mar 2018	2	14.34	80.62	8.2	33.50	8.1	25.0	0.65
A6	05 Mar 2018	3	14.27	80.74	8.1	33.50	8.1	25.0	0.71
A6	05 Mar 2018	4	14.24	80.65	8.1	33.50	8.1	25.0	0.81
A6	05 Mar 2018	5	14.24	80.71	7.9	33.49	8.1	25.0	0.88
A6	05 Mar 2018	6	13.98	80.72	7.6	33.50	8.1	25.0	1.00
A6	05 Mar 2018	7	13.64	80.85	7.3	33.50	8.0	25.1	1.21
A6	05 Mar 2018	8	13.41	81.14	7.0	33.51	8.0	25.2	1.30
A6	05 Mar 2018	9	13.15	82.14	6.7	33.51	8.0	25.2	1.21
A6	05 Mar 2018	10	12.92	82.60	6.5	33.52	8.0	25.3	1.11
A6	05 Mar 2018	11	12.79	82.91	6.3	33.52	7.9	25.3	0.95
A6	05 Mar 2018	12	12.59	83.04	6.0	33.52	7.9	25.3	0.83
A6	05 Mar 2018	13	12.30	83.21	5.8	33.53	7.9	25.4	0.65
A6	05 Mar 2018	14	12.05	83.23	5.6	33.54	7.9	25.4	0.52
A6	05 Mar 2018	15	11.99	83.22	5.5	33.53	7.9	25.4	0.52
A6	05 Mar 2018	16	11.97	83.26	5.4	33.53	7.9	25.5	0.46
A6	05 Mar 2018	17	11.95	83.25	5.4	33.53	7.9	25.5	0.44
A6	05 Mar 2018	18	11.89	83.27	5.3	33.54	7.9	25.5	0.42
A6	05 Mar 2018	19	11.81	83.34	5.3	33.54	7.8	25.5	0.45
A6	05 Mar 2018	20	11.66	83.02	5.2	33.55	7.8	25.5	0.43
A6	05 Mar 2018	21	11.71	83.07	5.2	33.54	7.8	25.5	0.38
A6	12 Mar 2018	1	15.43	81.32	8.6	33.47	8.1	24.7	1.23

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	12 Mar 2018	2	15.42	81.40	8.6	33.47	8.1	24.7	1.33
A6	12 Mar 2018	3	15.29	81.10	8.5	33.48	8.1	24.7	1.56
A6	12 Mar 2018	4	14.95	78.76	8.6	33.48	8.1	24.8	2.26
A6	12 Mar 2018	5	14.89	77.47	8.6	33.48	8.1	24.8	2.74
A6	12 Mar 2018	6	14.83	76.92	8.5	33.47	8.1	24.8	3.01
A6	12 Mar 2018	7	14.79	76.52	8.5	33.47	8.1	24.8	3.11
A6	12 Mar 2018	8	14.76	76.42	8.5	33.47	8.1	24.8	3.26
A6	12 Mar 2018	9	14.70	76.71	8.3	33.48	8.1	24.9	3.30
A6	12 Mar 2018	10	14.40	77.33	8.1	33.49	8.1	24.9	2.82
A6	12 Mar 2018	11	14.12	78.59	7.8	33.49	8.1	25.0	2.43
A6	12 Mar 2018	12	13.95	79.59	7.7	33.49	8.1	25.0	2.36
A6	12 Mar 2018	13	13.81	79.45	7.7	33.49	8.0	25.1	2.59
A6	12 Mar 2018	14	13.74	78.09	7.7	33.49	8.0	25.1	2.98
A6	12 Mar 2018	15	13.66	77.75	7.7	33.49	8.0	25.1	2.92
A6	12 Mar 2018	16	13.61	77.35	7.6	33.49	8.0	25.1	2.94
A6	12 Mar 2018	17	13.59	77.84	7.6	33.49	8.0	25.1	3.02
A6	12 Mar 2018	18	13.55	78.45	7.3	33.49	8.0	25.1	2.55
A6	12 Mar 2018	19	13.21	80.26	6.9	33.51	8.0	25.2	2.04
A6	12 Mar 2018	20	12.93	81.64	6.6	33.51	8.0	25.3	1.48
A6	19 Mar 2018	1	14.57	75.53	8.5	33.48	8.1	24.9	1.59
A6	19 Mar 2018	2	14.59	75.43	8.5	33.48	8.1	24.9	1.68
A6	19 Mar 2018	3	14.52	75.53	8.4	33.49	8.1	24.9	1.80
A6	19 Mar 2018	4	14.44	75.66	8.0	33.48	8.1	24.9	2.03
A6	19 Mar 2018	5	13.54	77.16	7.2	33.57	8.1	25.2	2.09
A6	19 Mar 2018	6	12.96	79.36	6.6	33.54	8.0	25.3	2.09
A6	19 Mar 2018	7	12.67	80.05	6.2	33.52	8.0	25.3	2.06
A6	19 Mar 2018	8	11.97	81.14	5.6	33.58	7.9	25.5	1.78
A6	19 Mar 2018	9	11.52	82.09	5.2	33.57	7.8	25.6	1.18
A6	19 Mar 2018	10	11.44	82.43	5.0	33.56	7.8	25.6	0.90
A6	19 Mar 2018	11	11.35	82.41	5.0	33.57	7.8	25.6	0.84
A6	19 Mar 2018	12	11.32	82.49	4.9	33.57	7.8	25.6	0.82
A6	19 Mar 2018	13	11.28	82.35	4.8	33.57	7.8	25.6	0.83
A6	19 Mar 2018	14	11.23	82.15	4.8	33.58	7.8	25.6	0.82
A6	19 Mar 2018	15	11.20	82.19	4.8	33.58	7.8	25.6	0.81
A6	19 Mar 2018	16	11.18	82.16	4.7	33.59	7.8	25.6	0.79
A6	19 Mar 2018	17	11.15	81.99	4.6	33.60	7.8	25.7	0.72
A6	19 Mar 2018	18	11.16	82.02	4.6	33.59	7.8	25.7	0.69
A6	26 Mar 2018	1	13.17	72.57	7.1	33.55	8.0	25.2	1.26
A6	26 Mar 2018	2	12.91	74.51	6.8	33.56	8.0	25.3	1.36
A6	26 Mar 2018	3	12.26	76.07	6.3	33.59	7.9	25.4	1.50
A6	26 Mar 2018	4	11.59	81.17	5.7	33.60	7.9	25.6	1.47
A6	26 Mar 2018	5	11.34	82.92	5.3	33.58	7.8	25.6	1.14
A6	26 Mar 2018	6	11.30	83.50	5.1	33.57	7.8	25.6	1.02
A6	26 Mar 2018	7	11.24	83.49	5.0	33.58	7.8	25.6	0.89
A6	26 Mar 2018	8	11.24	83.15	4.9	33.57	7.8	25.6	0.90
A6	26 Mar 2018	9	11.22	82.92	4.9	33.58	7.8	25.6	0.96
A6	26 Mar 2018	10	11.19	82.55	4.8	33.59	7.8	25.6	0.90
A6	26 Mar 2018	11	11.18	82.36	4.8	33.59	7.8	25.6	0.87
A6	26 Mar 2018	12	11.19	82.40	4.8	33.59	7.8	25.6	0.86
A6	26 Mar 2018	13	11.16	82.30	4.7	33.59	7.8	25.7	0.86
A6	26 Mar 2018	14	11.15	82.28	4.7	33.59	7.8	25.7	0.87
A6	26 Mar 2018	15	11.15	82.19	4.7	33.60	7.8	25.7	0.86
A6	26 Mar 2018	16	11.12	82.12	4.7	33.60	7.8	25.7	0.89

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	26 Mar 2018	17	11.11	82.08	4.6	33.60	7.8	25.7	0.92
A6	26 Mar 2018	18	11.10	81.93	4.6	33.61	7.8	25.7	0.95
A6	26 Mar 2018	19	11.05	81.44	4.6	33.61	7.8	25.7	0.84
A6	26 Mar 2018	20	11.01	81.26	4.4	33.62	7.8	25.7	0.73
A6	26 Mar 2018	21	11.00	80.63	4.4	33.62	7.8	25.7	0.65
A7	05 Mar 2018	1	14.40	79.11	8.1	33.47	8.1	24.9	0.78
A7	05 Mar 2018	2	14.40	76.85	8.1	33.47	8.1	24.9	0.78
A7	05 Mar 2018	3	14.35	77.38	8.1	33.47	8.1	24.9	0.83
A7	05 Mar 2018	4	14.31	79.09	8.1	33.47	8.1	24.9	0.97
A7	05 Mar 2018	5	14.29	78.90	8.0	33.47	8.1	24.9	1.21
A7	05 Mar 2018	6	14.21	79.05	7.8	33.48	8.1	25.0	1.44
A7	05 Mar 2018	7	13.95	79.46	7.4	33.50	8.1	25.0	1.46
A7	05 Mar 2018	8	13.42	80.19	7.0	33.52	8.0	25.2	1.37
A7	05 Mar 2018	9	13.17	80.82	6.7	33.52	8.0	25.2	1.28
A7	05 Mar 2018	10	12.80	81.95	6.4	33.52	7.9	25.3	1.17
A7	05 Mar 2018	11	12.58	82.35	6.2	33.53	7.9	25.3	1.07
A7	05 Mar 2018	12	12.48	82.66	6.0	33.52	7.9	25.3	0.84
A7	05 Mar 2018	13	12.35	82.88	5.9	33.52	7.9	25.4	0.78
A7	05 Mar 2018	14	12.24	82.97	5.8	33.52	7.9	25.4	0.76
A7	05 Mar 2018	15	12.18	83.14	5.7	33.52	7.9	25.4	0.71
A7	05 Mar 2018	16	12.06	83.10	5.6	33.53	7.9	25.4	0.67
A7	05 Mar 2018	17	11.94	83.17	5.4	33.54	7.9	25.5	0.61
A7	05 Mar 2018	18	11.80	82.90	5.3	33.54	7.8	25.5	0.57
A7	05 Mar 2018	19	11.71	82.52	5.3	33.55	7.8	25.5	0.50
A7	12 Mar 2018	1	15.42	81.71	8.5	33.47	8.1	24.7	1.32
A7	12 Mar 2018	2	15.40	81.34	8.5	33.47	8.1	24.7	1.44
A7	12 Mar 2018	3	15.28	81.02	8.6	33.48	8.1	24.7	1.62
A7	12 Mar 2018	4	15.21	80.29	8.6	33.47	8.1	24.7	1.83
A7	12 Mar 2018	5	15.09	79.63	8.5	33.48	8.1	24.8	2.04
A7	12 Mar 2018	6	14.88	78.53	8.3	33.49	8.1	24.8	2.34
A7	12 Mar 2018	7	14.48	77.52	8.1	33.50	8.1	24.9	2.69
A7	12 Mar 2018	8	14.19	77.90	7.9	33.50	8.1	25.0	2.54
A7	12 Mar 2018	9	13.95	80.01	7.6	33.50	8.0	25.0	2.19
A7	12 Mar 2018	10	13.67	80.35	7.4	33.50	8.0	25.1	2.15
A7	12 Mar 2018	11	13.39	80.45	7.3	33.51	8.0	25.2	2.12
A7	12 Mar 2018	12	13.28	79.29	7.2	33.50	8.0	25.2	2.34
A7	12 Mar 2018	13	13.25	79.10	7.2	33.50	8.0	25.2	2.39
A7	12 Mar 2018	14	13.24	78.97	7.2	33.49	8.0	25.2	2.57
A7	12 Mar 2018	15	13.22	78.87	7.2	33.49	8.0	25.2	2.56
A7	12 Mar 2018	16	13.16	78.71	7.1	33.50	8.0	25.2	2.69
A7	12 Mar 2018	17	13.10	78.73	7.0	33.50	8.0	25.2	2.76
A7	12 Mar 2018	18	13.08	79.25	6.9	33.50	8.0	25.2	2.75
A7	12 Mar 2018	19	13.01	80.00	6.7	33.50	8.0	25.2	2.15
A7	12 Mar 2018	20	12.66	81.65	6.3	33.52	7.9	25.3	1.69
A7	19 Mar 2018	1	14.10	78.23	7.7	33.50	8.1	25.0	1.03
A7	19 Mar 2018	2	13.99	78.23	7.6	33.51	8.1	25.0	1.14
A7	19 Mar 2018	3	13.82	78.37	7.4	33.51	8.1	25.1	1.37
A7	19 Mar 2018	4	13.61	78.68	7.1	33.52	8.0	25.1	1.45
A7	19 Mar 2018	5	13.30	79.04	6.7	33.52	8.0	25.2	1.45
A7	19 Mar 2018	6	12.59	79.71	6.1	33.56	8.0	25.4	1.42
A7	19 Mar 2018	7	12.12	80.69	5.6	33.55	7.9	25.4	1.20
A7	19 Mar 2018	8	11.86	81.73	5.4	33.54	7.9	25.5	1.11

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	19 Mar 2018	9	11.66	82.76	5.3	33.54	7.8	25.5	1.23
A7	19 Mar 2018	10	11.56	83.04	5.3	33.54	7.8	25.5	1.17
A7	19 Mar 2018	11	11.47	83.27	5.1	33.55	7.8	25.6	0.91
A7	19 Mar 2018	12	11.31	83.31	5.0	33.57	7.8	25.6	0.87
A7	19 Mar 2018	13	11.25	83.69	4.9	33.57	7.8	25.6	0.87
A7	19 Mar 2018	14	11.19	83.92	4.8	33.58	7.8	25.6	0.83
A7	19 Mar 2018	15	11.17	83.81	4.8	33.58	7.8	25.6	0.86
A7	19 Mar 2018	16	11.12	83.41	4.7	33.59	7.8	25.7	0.82
A7	19 Mar 2018	17	11.09	82.88	4.6	33.60	7.8	25.7	0.81
A7	19 Mar 2018	18	11.07	82.44	4.6	33.60	7.8	25.7	0.76
A7	19 Mar 2018	19	11.04	82.26	4.5	33.61	7.8	25.7	0.72
A7	19 Mar 2018	20	11.03	81.81	4.5	33.61	7.8	25.7	0.75
A7	26 Mar 2018	1	13.09	78.34	7.4	33.55	8.0	25.2	0.79
A7	26 Mar 2018	2	12.68	79.34	6.8	33.56	8.0	25.3	0.95
A7	26 Mar 2018	3	11.72	80.37	5.8	33.55	7.9	25.5	1.03
A7	26 Mar 2018	4	11.41	81.49	5.3	33.55	7.8	25.6	0.85
A7	26 Mar 2018	5	11.27	83.36	5.0	33.56	7.8	25.6	0.82
A7	26 Mar 2018	6	11.22	83.69	5.0	33.57	7.8	25.6	0.81
A7	26 Mar 2018	7	11.20	83.47	4.9	33.57	7.8	25.6	0.82
A7	26 Mar 2018	8	11.18	83.45	4.8	33.58	7.8	25.6	0.81
A7	26 Mar 2018	9	11.13	83.11	4.7	33.59	7.8	25.7	0.70
A7	26 Mar 2018	10	11.17	82.91	4.7	33.59	7.8	25.6	0.69
A7	26 Mar 2018	11	11.11	82.65	4.6	33.60	7.8	25.7	0.71
A7	26 Mar 2018	12	11.11	82.61	4.6	33.60	7.8	25.7	0.72
A7	26 Mar 2018	13	11.08	82.46	4.5	33.60	7.8	25.7	0.71
A7	26 Mar 2018	14	11.07	82.25	4.5	33.60	7.8	25.7	0.71
A7	26 Mar 2018	15	11.06	82.12	4.5	33.61	7.8	25.7	0.72
A7	26 Mar 2018	16	11.01	82.02	4.5	33.61	7.8	25.7	0.77
A7	26 Mar 2018	17	10.98	82.00	4.5	33.62	7.8	25.7	0.81
A7	26 Mar 2018	18	10.98	81.95	4.5	33.62	7.8	25.7	0.79
A7	26 Mar 2018	19	11.01	82.01	4.5	33.61	7.8	25.7	0.78
A7	26 Mar 2018	20	11.01	82.01	4.5	33.61	7.8	25.7	0.76
C4	05 Mar 2018	1	14.41	79.63	8.1	33.52	8.1	25.0	0.54
C4	05 Mar 2018	2	14.39	79.60	8.0	33.52	8.1	25.0	0.56
C4	05 Mar 2018	3	14.23	79.71	7.9	33.52	8.1	25.0	0.58
C4	05 Mar 2018	4	14.11	79.74	7.9	33.52	8.1	25.0	0.61
C4	05 Mar 2018	5	14.02	79.75	7.8	33.52	8.1	25.0	0.72
C4	05 Mar 2018	6	13.95	79.55	7.8	33.52	8.1	25.1	0.89
C4	05 Mar 2018	7	13.89	79.29	7.7	33.51	8.1	25.1	1.12
C4	05 Mar 2018	8	13.86	79.37	7.7	33.51	8.1	25.1	1.32
C4	05 Mar 2018	9	13.80	76.90	7.6	33.52	8.1	25.1	1.51
C4	05 Mar 2018	10	13.60	78.54	7.3	33.52	8.1	25.1	1.29
C4	05 Mar 2018	11	12.51	79.47	6.7	33.56	8.0	25.4	0.82
C4	12 Mar 2018	1	15.40	77.80	8.5	33.46	8.1	24.7	0.70
C4	12 Mar 2018	2	15.40	77.49	8.6	33.46	8.1	24.7	0.70
C4	12 Mar 2018	3	15.37	77.17	8.6	33.47	8.1	24.7	0.74
C4	12 Mar 2018	4	15.33	77.28	8.7	33.47	8.1	24.7	0.89
C4	12 Mar 2018	5	15.20	77.13	8.7	33.48	8.1	24.8	1.24
C4	12 Mar 2018	6	15.16	77.74	8.6	33.47	8.1	24.8	1.62
C4	12 Mar 2018	7	15.10	78.00	8.6	33.47	8.1	24.8	1.78
C4	12 Mar 2018	8	15.00	77.62	8.6	33.48	8.1	24.8	2.03
C4	12 Mar 2018	9	14.81	77.37	8.5	33.49	8.1	24.8	2.18

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C4	12 Mar 2018	10	14.59	79.32	8.5	33.48	8.1	24.9	1.85
C4	12 Mar 2018	11	14.81	79.43	8.5	33.46	8.1	24.8	1.48
C4	19 Mar 2018	1	14.43	76.72	7.6	33.50	8.1	24.9	0.49
C4	19 Mar 2018	2	14.32	76.86	7.4	33.50	8.1	25.0	0.53
C4	19 Mar 2018	3	13.33	78.02	6.7	33.58	8.0	25.2	0.65
C4	19 Mar 2018	4	12.35	79.91	5.8	33.57	7.9	25.4	0.58
C4	19 Mar 2018	5	11.83	82.44	5.5	33.55	7.9	25.5	0.45
C4	19 Mar 2018	6	11.71	83.40	5.3	33.54	7.9	25.5	0.44
C4	19 Mar 2018	7	11.65	83.58	5.2	33.54	7.8	25.5	0.44
C4	19 Mar 2018	8	11.64	83.61	5.2	33.54	7.8	25.5	0.45
C4	19 Mar 2018	9	11.64	83.54	5.2	33.54	7.8	25.5	0.49
C4	19 Mar 2018	10	11.65	83.29	5.2	33.55	7.8	25.5	0.47
C4	19 Mar 2018	11	11.65	82.78	5.2	33.55	7.8	25.5	0.57
C4	26 Mar 2018	1	12.94	76.22	7.1	33.55	8.0	25.3	0.43
C4	26 Mar 2018	2	12.81	75.82	7.0	33.56	8.0	25.3	0.48
C4	26 Mar 2018	3	12.68	76.46	6.8	33.56	8.0	25.3	0.64
C4	26 Mar 2018	4	12.60	76.61	6.7	33.56	8.0	25.4	0.73
C4	26 Mar 2018	5	12.48	76.72	6.7	33.56	8.0	25.4	0.93
C4	26 Mar 2018	6	12.35	76.85	6.6	33.56	8.0	25.4	1.01
C4	26 Mar 2018	7	12.20	72.25	6.4	33.56	7.9	25.4	0.93
C4	26 Mar 2018	8	11.71	73.05	6.0	33.58	7.9	25.5	0.74
C4	26 Mar 2018	9	11.45	74.51	5.6	33.57	7.9	25.6	0.56
C4	26 Mar 2018	10	11.57	74.25	5.6	33.55	7.9	25.5	0.50
C5	05 Mar 2018	1	14.96	77.75	8.2	33.52	8.1	24.8	0.18
C5	05 Mar 2018	2	14.93	77.18	8.1	33.52	8.1	24.9	0.18
C5	05 Mar 2018	3	14.72	77.16	8.1	33.53	8.1	24.9	0.23
C5	05 Mar 2018	4	14.50	77.30	8.0	33.52	8.1	24.9	0.34
C5	05 Mar 2018	5	14.17	78.69	7.7	33.52	8.1	25.0	0.41
C5	05 Mar 2018	6	13.72	80.61	7.4	33.52	8.1	25.1	0.42
C5	05 Mar 2018	7	13.51	81.84	7.2	33.51	8.0	25.1	0.40
C5	05 Mar 2018	8	13.24	82.80	6.9	33.51	8.0	25.2	0.36
C5	05 Mar 2018	9	13.09	83.55	6.7	33.51	8.0	25.2	0.32
C5	05 Mar 2018	10	12.87	83.74	6.5	33.51	8.0	25.3	0.31
C5	05 Mar 2018	11	12.37	83.72	6.2	33.54	7.9	25.4	0.27
C5	12 Mar 2018	1	15.51	77.55	9.0	33.46	8.2	24.7	1.06
C5	12 Mar 2018	2	15.50	77.31	9.0	33.46	8.2	24.7	1.10
C5	12 Mar 2018	3	15.47	77.43	9.0	33.46	8.2	24.7	1.13
C5	12 Mar 2018	4	15.43	77.79	9.0	33.47	8.2	24.7	1.19
C5	12 Mar 2018	5	15.34	79.47	9.0	33.47	8.2	24.7	1.28
C5	12 Mar 2018	6	15.15	80.62	8.9	33.48	8.2	24.8	1.31
C5	12 Mar 2018	7	14.99	80.88	8.8	33.48	8.1	24.8	1.36
C5	12 Mar 2018	8	14.71	80.73	8.5	33.50	8.1	24.9	1.50
C5	12 Mar 2018	9	14.58	81.76	8.3	33.49	8.1	24.9	1.48
C5	12 Mar 2018	10	14.35	81.69	8.2	33.51	8.1	25.0	1.22
C5	12 Mar 2018	11	14.23	80.77	8.0	33.49	8.1	25.0	1.07
C5	19 Mar 2018	1	14.73	75.66	7.8	33.49	8.1	24.9	0.60
C5	19 Mar 2018	2	14.71	75.58	7.8	33.49	8.1	24.9	0.67
C5	19 Mar 2018	3	14.49	75.68	7.5	33.52	8.1	24.9	0.79
C5	19 Mar 2018	4	13.48	77.50	6.7	33.58	8.0	25.2	0.84
C5	19 Mar 2018	5	12.85	81.02	6.0	33.55	7.9	25.3	0.60

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C5	19 Mar 2018	6	12.51	83.28	5.7	33.55	7.9	25.4	0.50
C5	19 Mar 2018	7	12.37	83.40	5.6	33.54	7.9	25.4	0.54
C5	19 Mar 2018	8	12.27	83.01	5.5	33.53	7.9	25.4	0.60
C5	19 Mar 2018	9	12.08	82.82	5.4	33.55	7.9	25.4	0.70
C5	19 Mar 2018	10	11.93	82.51	5.3	33.54	7.9	25.5	0.77
C5	19 Mar 2018	11	11.93	82.33	5.3	33.54	7.9	25.5	0.67
C5	26 Mar 2018	1	13.95	61.78	7.3	33.54	8.0	25.1	0.35
C5	26 Mar 2018	2	13.83	61.56	7.2	33.55	8.0	25.1	0.43
C5	26 Mar 2018	3	13.75	61.47	7.2	33.55	8.0	25.1	0.56
C5	26 Mar 2018	4	13.60	61.36	6.9	33.55	8.0	25.1	0.67
C5	26 Mar 2018	5	12.97	62.27	6.3	33.58	8.0	25.3	0.62
C5	26 Mar 2018	6	12.19	68.68	5.8	33.57	7.9	25.4	0.60
C5	26 Mar 2018	7	11.82	73.60	5.3	33.56	7.9	25.5	0.58
C5	26 Mar 2018	8	11.54	74.98	5.1	33.56	7.8	25.6	0.51
C5	26 Mar 2018	9	11.45	75.58	5.0	33.55	7.8	25.6	0.52
C5	26 Mar 2018	10	11.44	75.97	4.9	33.55	7.8	25.6	0.52
C5	26 Mar 2018	11	11.45	75.37	4.9	33.55	7.8	25.6	0.54
C6	05 Mar 2018	1	14.90	77.77	8.0	33.46	8.1	24.8	0.37
C6	05 Mar 2018	2	14.82	77.62	8.0	33.47	8.1	24.8	0.39
C6	05 Mar 2018	3	14.60	77.41	8.0	33.48	8.1	24.9	0.46
C6	05 Mar 2018	4	14.45	77.69	8.0	33.49	8.1	24.9	0.57
C6	05 Mar 2018	5	14.23	77.87	7.9	33.51	8.1	25.0	0.97
C6	05 Mar 2018	6	14.16	79.04	7.7	33.50	8.1	25.0	1.19
C6	05 Mar 2018	7	13.51	81.50	7.0	33.52	8.0	25.1	1.01
C6	05 Mar 2018	8	13.10	82.49	6.4	33.52	8.0	25.2	0.68
C6	05 Mar 2018	9	12.71	82.80	6.1	33.52	7.9	25.3	0.39
C6	05 Mar 2018	10	12.44	83.23	6.2	33.52	7.9	25.4	0.28
C6	12 Mar 2018	1	15.55	79.33	9.1	33.46	8.2	24.7	0.76
C6	12 Mar 2018	2	15.55	79.14	9.1	33.46	8.2	24.7	0.73
C6	12 Mar 2018	3	15.55	79.19	9.1	33.46	8.2	24.7	0.75
C6	12 Mar 2018	4	15.53	79.20	9.1	33.46	8.2	24.7	0.86
C6	12 Mar 2018	5	15.49	79.34	9.1	33.46	8.2	24.7	1.11
C6	12 Mar 2018	6	15.49	79.34	9.0	33.46	8.2	24.7	1.25
C6	12 Mar 2018	7	15.33	79.32	8.9	33.47	8.2	24.7	1.42
C6	12 Mar 2018	8	14.89	79.14	8.8	33.48	8.2	24.8	1.86
C6	12 Mar 2018	9	14.62	78.43	8.6	33.48	8.1	24.9	2.56
C6	12 Mar 2018	10	14.52	78.33	8.4	33.47	8.1	24.9	2.28
C6	19 Mar 2018	1	14.87	75.57	8.5	33.47	8.2	24.8	1.10
C6	19 Mar 2018	2	14.84	75.57	8.4	33.47	8.2	24.8	1.20
C6	19 Mar 2018	3	14.38	75.72	7.8	33.52	8.1	25.0	1.26
C6	19 Mar 2018	4	13.44	77.58	6.8	33.58	8.0	25.2	1.23
C6	19 Mar 2018	5	12.84	80.10	6.0	33.55	7.9	25.3	0.82
C6	19 Mar 2018	6	12.53	82.23	5.7	33.55	7.9	25.4	0.59
C6	19 Mar 2018	7	12.41	82.80	5.6	33.54	7.9	25.4	0.61
C6	19 Mar 2018	8	12.34	83.16	5.5	33.54	7.9	25.4	0.60
C6	19 Mar 2018	9	12.32	83.13	5.5	33.53	7.9	25.4	0.45
C6	19 Mar 2018	10	12.37	82.97	5.5	33.54	7.9	25.4	0.41
C6	26 Mar 2018	1	13.77	67.09	7.3	33.54	8.0	25.1	0.50
C6	26 Mar 2018	2	13.76	66.64	7.2	33.54	8.0	25.1	0.55
C6	26 Mar 2018	3	13.73	66.61	7.3	33.54	8.0	25.1	0.74

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C6	26 Mar 2018	4	13.61	66.57	7.0	33.55	8.0	25.1	0.85
C6	26 Mar 2018	5	13.00	67.96	6.5	33.57	8.0	25.3	0.76
C6	26 Mar 2018	6	12.20	71.67	5.9	33.58	7.9	25.4	0.66
C6	26 Mar 2018	7	11.85	76.54	5.4	33.56	7.9	25.5	0.59
C6	26 Mar 2018	8	11.70	78.21	5.2	33.55	7.8	25.5	0.52
C6	26 Mar 2018	9	11.65	78.02	5.1	33.55	7.8	25.5	0.50
C6	26 Mar 2018	10	11.60	77.53	5.1	33.55	7.8	25.5	0.49
C7	05 Mar 2018	1	14.38	78.91	8.0	33.44	8.1	24.9	0.75
C7	05 Mar 2018	2	14.29	77.94	8.0	33.45	8.1	24.9	0.82
C7	05 Mar 2018	3	14.17	78.46	7.9	33.47	8.1	25.0	1.02
C7	05 Mar 2018	4	14.06	78.91	7.8	33.49	8.1	25.0	1.27
C7	05 Mar 2018	5	14.04	79.24	7.8	33.49	8.1	25.0	1.37
C7	05 Mar 2018	6	13.96	79.44	7.7	33.50	8.1	25.0	1.54
C7	05 Mar 2018	7	13.88	79.74	7.6	33.50	8.0	25.1	1.77
C7	05 Mar 2018	8	13.86	79.96	7.5	33.50	8.0	25.1	1.80
C7	05 Mar 2018	9	13.82	79.94	7.4	33.50	8.0	25.1	1.82
C7	05 Mar 2018	10	13.75	80.15	7.3	33.50	8.0	25.1	1.73
C7	05 Mar 2018	11	13.44	80.49	7.0	33.52	8.0	25.2	1.54
C7	05 Mar 2018	12	13.15	81.36	6.7	33.52	8.0	25.2	1.36
C7	05 Mar 2018	13	13.02	81.90	6.5	33.52	8.0	25.2	1.19
C7	05 Mar 2018	14	12.95	82.01	6.5	33.51	8.0	25.3	1.18
C7	05 Mar 2018	15	12.82	82.04	6.3	33.52	8.0	25.3	1.15
C7	05 Mar 2018	16	12.49	82.36	6.1	33.53	7.9	25.4	1.01
C7	05 Mar 2018	17	12.25	82.53	5.7	33.53	7.9	25.4	0.82
C7	05 Mar 2018	18	11.65	83.01	5.3	33.56	7.9	25.5	0.58
C7	05 Mar 2018	19	11.46	83.43	5.1	33.56	7.8	25.6	0.42
C7	12 Mar 2018	1	15.16	79.82	8.6	33.47	8.1	24.8	1.98
C7	12 Mar 2018	2	15.21	79.95	8.6	33.46	8.1	24.7	1.75
C7	12 Mar 2018	3	14.96	79.12	8.6	33.50	8.1	24.8	1.76
C7	12 Mar 2018	4	14.79	77.63	8.6	33.48	8.1	24.9	2.06
C7	12 Mar 2018	5	14.66	76.08	8.6	33.49	8.1	24.9	2.78
C7	12 Mar 2018	6	14.57	75.07	8.6	33.48	8.1	24.9	3.50
C7	12 Mar 2018	7	14.52	74.69	8.5	33.48	8.1	24.9	4.02
C7	12 Mar 2018	8	14.44	74.66	8.5	33.49	8.1	24.9	4.28
C7	12 Mar 2018	9	14.37	74.61	8.4	33.49	8.1	24.9	4.19
C7	12 Mar 2018	10	14.32	74.56	8.3	33.49	8.1	25.0	4.08
C7	12 Mar 2018	11	14.26	74.87	8.2	33.49	8.1	25.0	4.21
C7	12 Mar 2018	12	14.25	75.10	8.2	33.49	8.1	25.0	4.50
C7	12 Mar 2018	13	14.23	75.37	8.1	33.49	8.1	25.0	4.14
C7	12 Mar 2018	14	14.21	75.64	8.1	33.49	8.1	25.0	4.06
C7	12 Mar 2018	15	14.14	76.06	8.0	33.49	8.1	25.0	3.65
C7	12 Mar 2018	16	14.08	77.45	7.8	33.49	8.1	25.0	3.26
C7	12 Mar 2018	17	13.91	79.20	7.4	33.51	8.1	25.1	2.72
C7	12 Mar 2018	18	13.18	81.83	6.8	33.55	8.0	25.2	1.97
C7	19 Mar 2018	1	14.70	74.73	8.1	33.45	8.1	24.8	1.80
C7	19 Mar 2018	2	14.70	74.71	8.1	33.45	8.1	24.8	1.98
C7	19 Mar 2018	3	14.70	74.67	8.1	33.45	8.1	24.8	2.02
C7	19 Mar 2018	4	14.67	74.44	8.0	33.45	8.1	24.8	2.30
C7	19 Mar 2018	5	14.50	74.32	7.7	33.48	8.1	24.9	2.67
C7	19 Mar 2018	6	13.83	76.34	7.0	33.55	8.0	25.1	2.43
C7	19 Mar 2018	7	13.23	78.12	6.4	33.54	8.0	25.2	1.86
C7	19 Mar 2018	8	12.78	79.68	5.9	33.56	7.9	25.3	1.55

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	19 Mar 2018	9	12.02	80.41	5.6	33.59	7.9	25.5	1.32
C7	19 Mar 2018	10	11.82	80.69	5.3	33.56	7.9	25.5	1.24
C7	19 Mar 2018	11	11.61	81.07	5.2	33.56	7.8	25.5	1.09
C7	19 Mar 2018	12	11.49	81.21	5.0	33.56	7.8	25.6	1.04
C7	19 Mar 2018	13	11.45	81.56	4.9	33.57	7.8	25.6	1.06
C7	19 Mar 2018	14	11.41	81.76	4.9	33.57	7.8	25.6	0.95
C7	19 Mar 2018	15	11.36	81.57	4.8	33.58	7.8	25.6	0.84
C7	19 Mar 2018	16	11.20	81.69	4.7	33.60	7.8	25.6	0.82
C7	19 Mar 2018	17	11.11	81.41	4.6	33.60	7.8	25.7	0.71
C7	19 Mar 2018	18	11.03	80.75	4.5	33.61	7.8	25.7	0.66
C7	19 Mar 2018	19	11.02	80.61	4.5	33.61	7.8	25.7	0.63
C7	26 Mar 2018	1	13.39	74.40	7.5	33.53	8.0	25.2	1.11
C7	26 Mar 2018	2	12.83	74.63	6.6	33.55	8.0	25.3	1.11
C7	26 Mar 2018	3	11.61	77.02	5.8	33.57	7.9	25.6	0.92
C7	26 Mar 2018	4	11.44	80.84	5.4	33.55	7.9	25.6	0.83
C7	26 Mar 2018	5	11.36	83.03	5.2	33.56	7.8	25.6	0.77
C7	26 Mar 2018	6	11.27	83.23	5.0	33.57	7.8	25.6	0.78
C7	26 Mar 2018	7	11.21	83.19	4.9	33.58	7.8	25.6	0.79
C7	26 Mar 2018	8	11.14	82.72	4.8	33.59	7.8	25.6	0.71
C7	26 Mar 2018	9	11.13	81.62	4.7	33.59	7.8	25.7	0.67
C7	26 Mar 2018	10	11.13	81.01	4.6	33.59	7.8	25.7	0.65
C7	26 Mar 2018	11	11.13	80.88	4.6	33.59	7.8	25.7	0.66
C7	26 Mar 2018	12	11.10	80.67	4.6	33.60	7.8	25.7	0.67
C7	26 Mar 2018	13	11.08	80.81	4.6	33.60	7.8	25.7	0.70
C7	26 Mar 2018	14	11.06	80.99	4.5	33.61	7.8	25.7	0.72
C7	26 Mar 2018	15	11.04	80.97	4.5	33.61	7.8	25.7	0.74
C7	26 Mar 2018	16	11.03	80.75	4.5	33.61	7.8	25.7	0.78
C7	26 Mar 2018	17	11.02	80.84	4.5	33.61	7.8	25.7	0.77
C7	26 Mar 2018	18	11.03	80.93	4.5	33.62	7.8	25.7	0.76
C8	05 Mar 2018	1	14.20	81.35	7.7	33.48	8.0	25.0	0.54
C8	05 Mar 2018	2	14.22	81.38	7.7	33.48	8.0	25.0	0.57
C8	05 Mar 2018	3	14.13	80.89	7.8	33.49	8.1	25.0	0.72
C8	05 Mar 2018	4	14.10	80.68	7.8	33.49	8.1	25.0	0.96
C8	05 Mar 2018	5	14.09	80.04	7.8	33.49	8.1	25.0	1.09
C8	05 Mar 2018	6	14.05	80.09	7.8	33.49	8.1	25.0	1.30
C8	05 Mar 2018	7	14.01	80.53	7.7	33.50	8.1	25.0	1.43
C8	05 Mar 2018	8	13.96	80.92	7.7	33.50	8.0	25.0	1.42
C8	05 Mar 2018	9	13.94	81.19	7.6	33.50	8.0	25.0	1.50
C8	05 Mar 2018	10	13.91	81.26	7.6	33.50	8.0	25.0	1.60
C8	05 Mar 2018	11	13.87	80.97	7.5	33.50	8.0	25.1	1.66
C8	05 Mar 2018	12	13.80	81.12	7.5	33.50	8.0	25.1	1.56
C8	05 Mar 2018	13	13.76	81.69	7.4	33.50	8.0	25.1	1.59
C8	05 Mar 2018	14	13.73	82.09	7.3	33.50	8.0	25.1	1.49
C8	05 Mar 2018	15	13.64	82.29	7.2	33.50	8.0	25.1	1.48
C8	05 Mar 2018	16	13.41	82.33	7.0	33.51	8.0	25.2	1.40
C8	05 Mar 2018	17	13.22	82.36	6.8	33.51	8.0	25.2	1.27
C8	05 Mar 2018	18	13.09	82.16	6.5	33.51	8.0	25.2	1.19
C8	05 Mar 2018	19	12.29	82.24	5.9	33.56	7.9	25.4	0.94
C8	05 Mar 2018	20	12.16	82.32	5.6	33.52	7.9	25.4	0.72
C8	12 Mar 2018	1	15.51	79.67	8.5	33.44	8.1	24.7	1.26
C8	12 Mar 2018	2	15.48	79.59	8.4	33.45	8.1	24.7	1.25
C8	12 Mar 2018	3	15.36	79.42	8.4	33.47	8.1	24.7	1.56

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	12 Mar 2018	4	15.05	78.99	8.6	33.48	8.1	24.8	2.03
C8	12 Mar 2018	5	14.90	77.66	8.7	33.48	8.1	24.8	2.53
C8	12 Mar 2018	6	14.82	77.11	8.7	33.48	8.1	24.8	3.07
C8	12 Mar 2018	7	14.55	75.82	8.6	33.49	8.1	24.9	3.48
C8	12 Mar 2018	8	14.36	73.56	8.5	33.49	8.1	24.9	4.37
C8	12 Mar 2018	9	14.33	73.06	8.4	33.48	8.1	24.9	5.11
C8	12 Mar 2018	10	14.33	73.34	8.4	33.48	8.1	24.9	5.16
C8	12 Mar 2018	11	14.32	73.41	8.4	33.48	8.1	24.9	5.12
C8	12 Mar 2018	12	14.31	73.59	8.3	33.48	8.1	24.9	5.13
C8	12 Mar 2018	13	14.30	73.70	8.3	33.48	8.1	24.9	4.99
C8	12 Mar 2018	14	14.29	74.10	8.3	33.48	8.1	25.0	5.11
C8	12 Mar 2018	15	14.22	74.55	8.2	33.49	8.1	25.0	4.93
C8	12 Mar 2018	16	14.09	75.24	8.0	33.49	8.1	25.0	4.17
C8	12 Mar 2018	17	14.06	76.42	7.8	33.49	8.1	25.0	3.66
C8	12 Mar 2018	18	13.93	77.71	7.5	33.50	8.1	25.0	2.96
C8	12 Mar 2018	19	13.35	80.31	7.0	33.54	8.0	25.2	2.29
C8	12 Mar 2018	20	13.21	81.36	6.8	33.51	8.0	25.2	1.58
C8	19 Mar 2018	1	14.28	76.75	7.9	33.49	8.1	25.0	1.27
C8	19 Mar 2018	2	14.28	76.74	7.9	33.49	8.1	25.0	1.35
C8	19 Mar 2018	3	14.25	76.67	7.8	33.49	8.1	25.0	1.47
C8	19 Mar 2018	4	14.18	76.60	7.7	33.49	8.1	25.0	1.74
C8	19 Mar 2018	5	13.96	76.53	7.5	33.50	8.1	25.0	2.16
C8	19 Mar 2018	6	13.75	76.96	7.4	33.50	8.1	25.1	2.31
C8	19 Mar 2018	7	13.59	77.97	7.3	33.51	8.0	25.1	2.22
C8	19 Mar 2018	8	13.46	79.34	7.2	33.50	8.0	25.1	2.31
C8	19 Mar 2018	9	13.35	79.92	7.1	33.50	8.0	25.2	2.22
C8	19 Mar 2018	10	13.07	80.41	6.8	33.52	8.0	25.2	2.21
C8	19 Mar 2018	11	12.53	81.16	6.4	33.53	8.0	25.3	2.16
C8	19 Mar 2018	12	12.31	81.35	6.1	33.52	7.9	25.4	2.13
C8	19 Mar 2018	13	12.23	81.88	6.0	33.51	7.9	25.4	1.88
C8	19 Mar 2018	14	11.98	82.08	5.8	33.52	7.9	25.4	1.87
C8	19 Mar 2018	15	11.84	82.25	5.6	33.52	7.9	25.5	1.66
C8	19 Mar 2018	16	11.77	82.50	5.4	33.53	7.9	25.5	1.45
C8	19 Mar 2018	17	11.60	82.38	5.2	33.56	7.9	25.5	1.30
C8	19 Mar 2018	18	11.33	81.96	4.9	33.59	7.8	25.6	0.96
C8	19 Mar 2018	19	11.19	81.12	4.7	33.59	7.8	25.6	0.76
C8	19 Mar 2018	20	11.17	80.13	4.6	33.59	7.8	25.6	0.75
C8	26 Mar 2018	1	13.12	74.81	6.8	33.53	8.0	25.2	0.94
C8	26 Mar 2018	2	13.09	74.69	6.7	33.53	8.0	25.2	1.00
C8	26 Mar 2018	3	12.67	74.69	6.2	33.58	8.0	25.4	1.08
C8	26 Mar 2018	4	11.79	76.57	5.8	33.59	7.9	25.5	1.12
C8	26 Mar 2018	5	11.70	80.26	5.5	33.56	7.9	25.5	0.98
C8	26 Mar 2018	6	11.68	81.12	5.4	33.55	7.8	25.5	0.95
C8	26 Mar 2018	7	11.64	81.19	5.4	33.55	7.8	25.5	0.94
C8	26 Mar 2018	8	11.53	81.34	5.3	33.56	7.8	25.6	0.92
C8	26 Mar 2018	9	11.42	82.63	5.2	33.56	7.8	25.6	0.89
C8	26 Mar 2018	10	11.38	83.09	5.1	33.56	7.8	25.6	0.88
C8	26 Mar 2018	11	11.27	82.98	5.0	33.58	7.8	25.6	0.90
C8	26 Mar 2018	12	11.24	82.85	4.9	33.58	7.8	25.6	0.95
C8	26 Mar 2018	13	11.22	82.87	4.9	33.58	7.8	25.6	1.05
C8	26 Mar 2018	14	11.22	82.57	4.8	33.58	7.8	25.6	1.07
C8	26 Mar 2018	15	11.21	82.42	4.8	33.59	7.8	25.6	1.12
C8	26 Mar 2018	16	11.20	82.17	4.8	33.59	7.8	25.6	1.09

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	26 Mar 2018	17	11.18	80.21	4.7	33.59	7.8	25.6	1.02
C8	26 Mar 2018	18	11.18	78.74	4.7	33.59	7.8	25.6	0.95
C8	26 Mar 2018	19	11.18	77.41	4.6	33.59	7.8	25.6	0.93

NA = not available

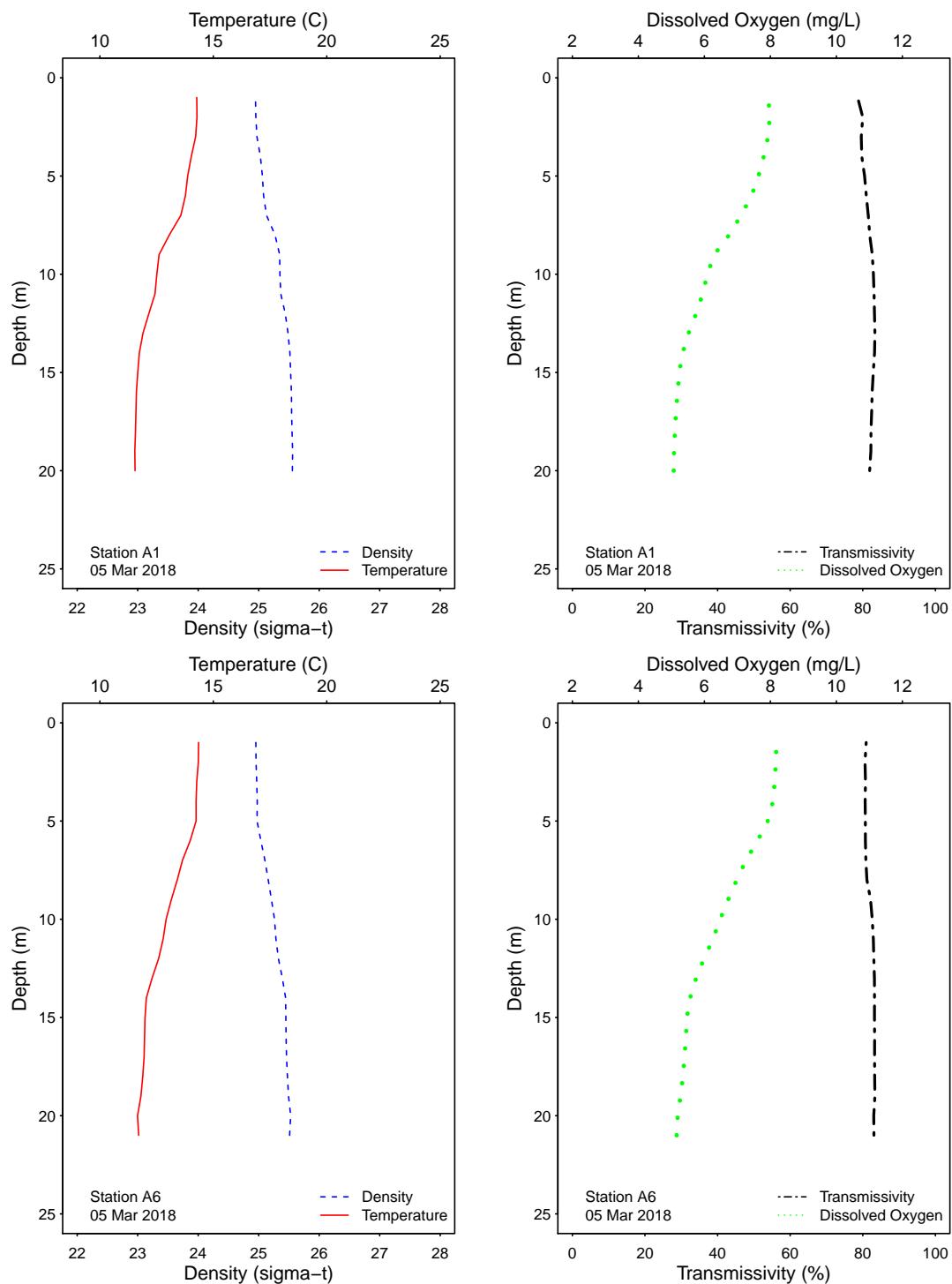


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

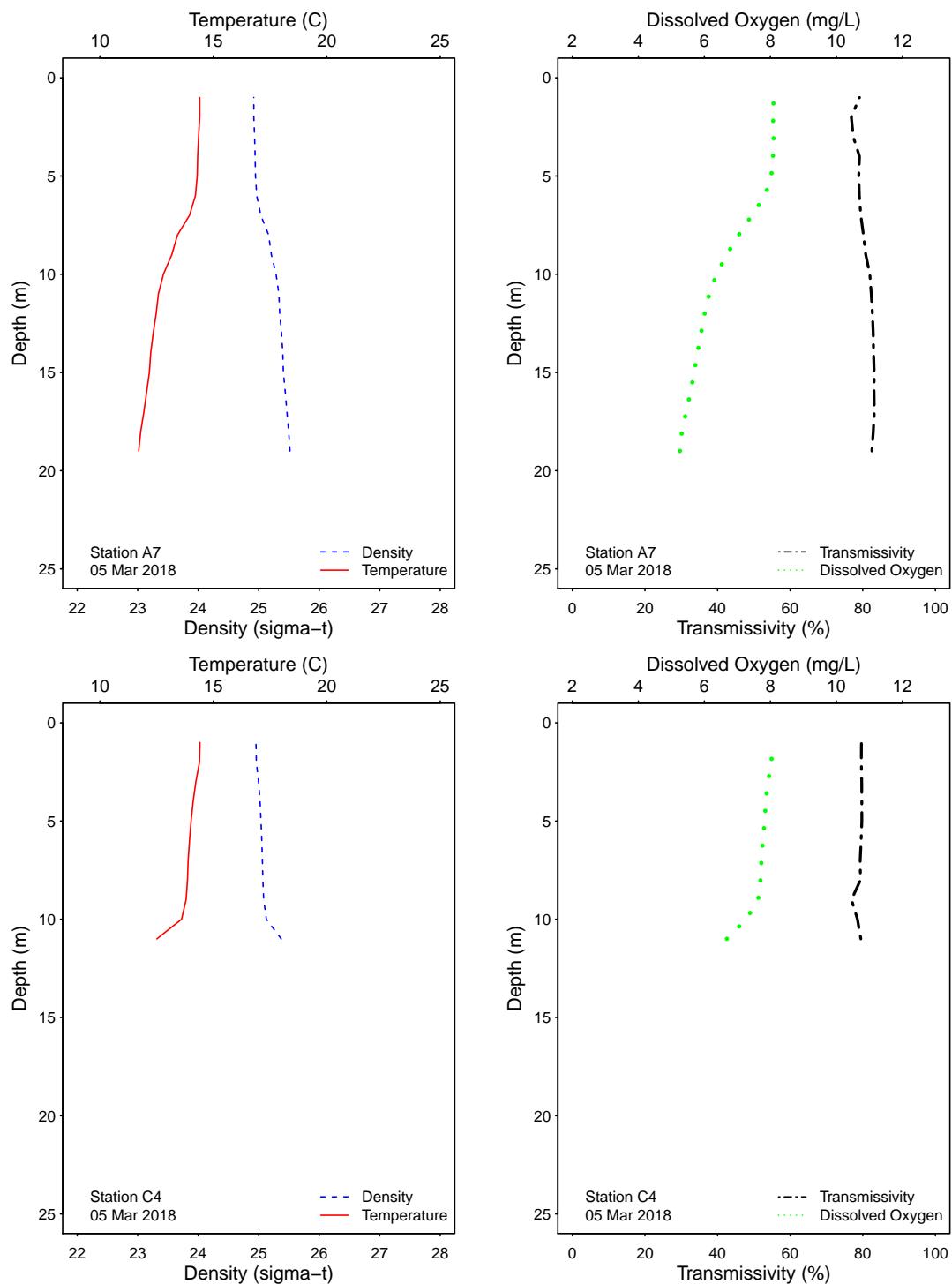


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

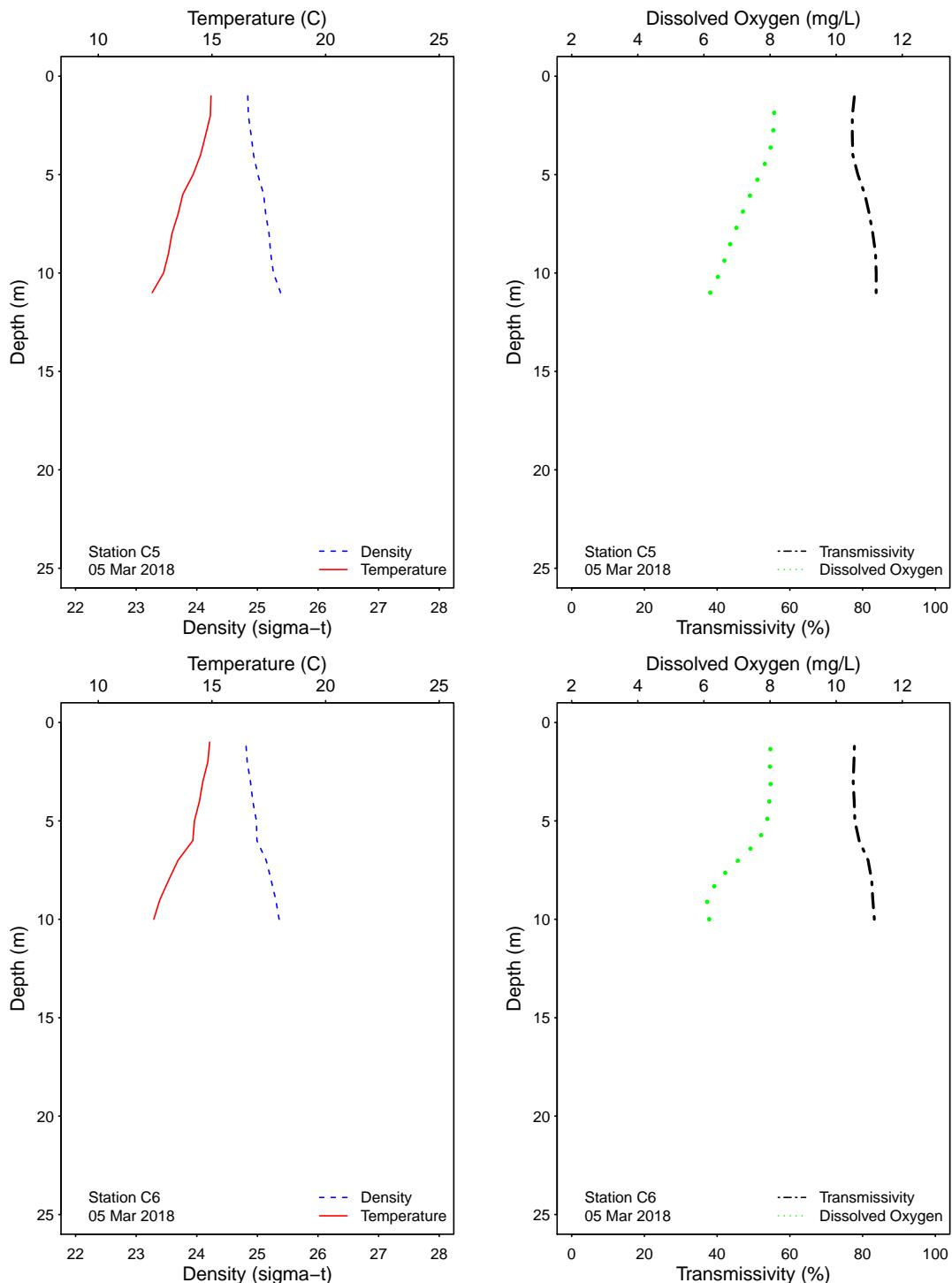


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

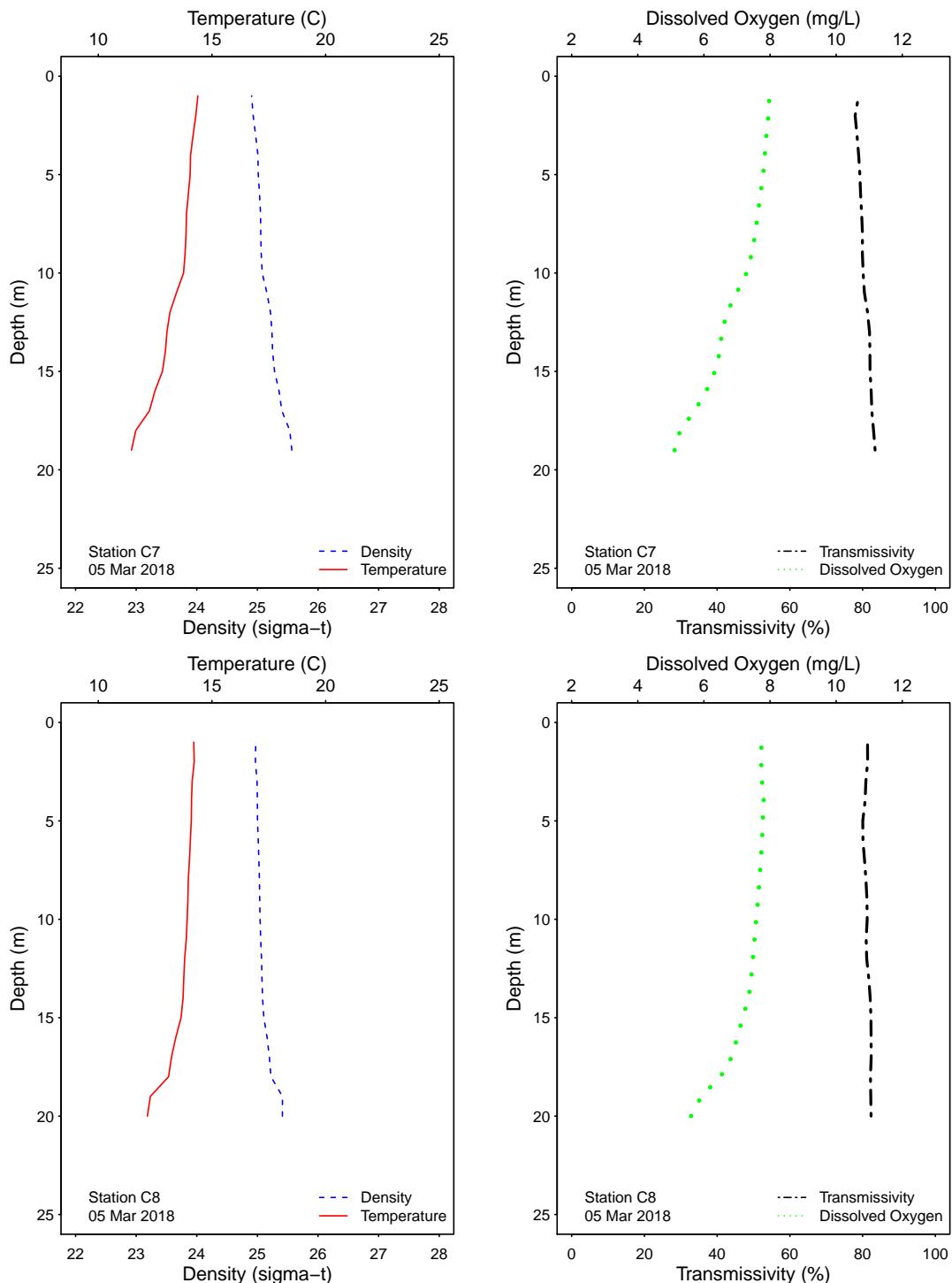


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

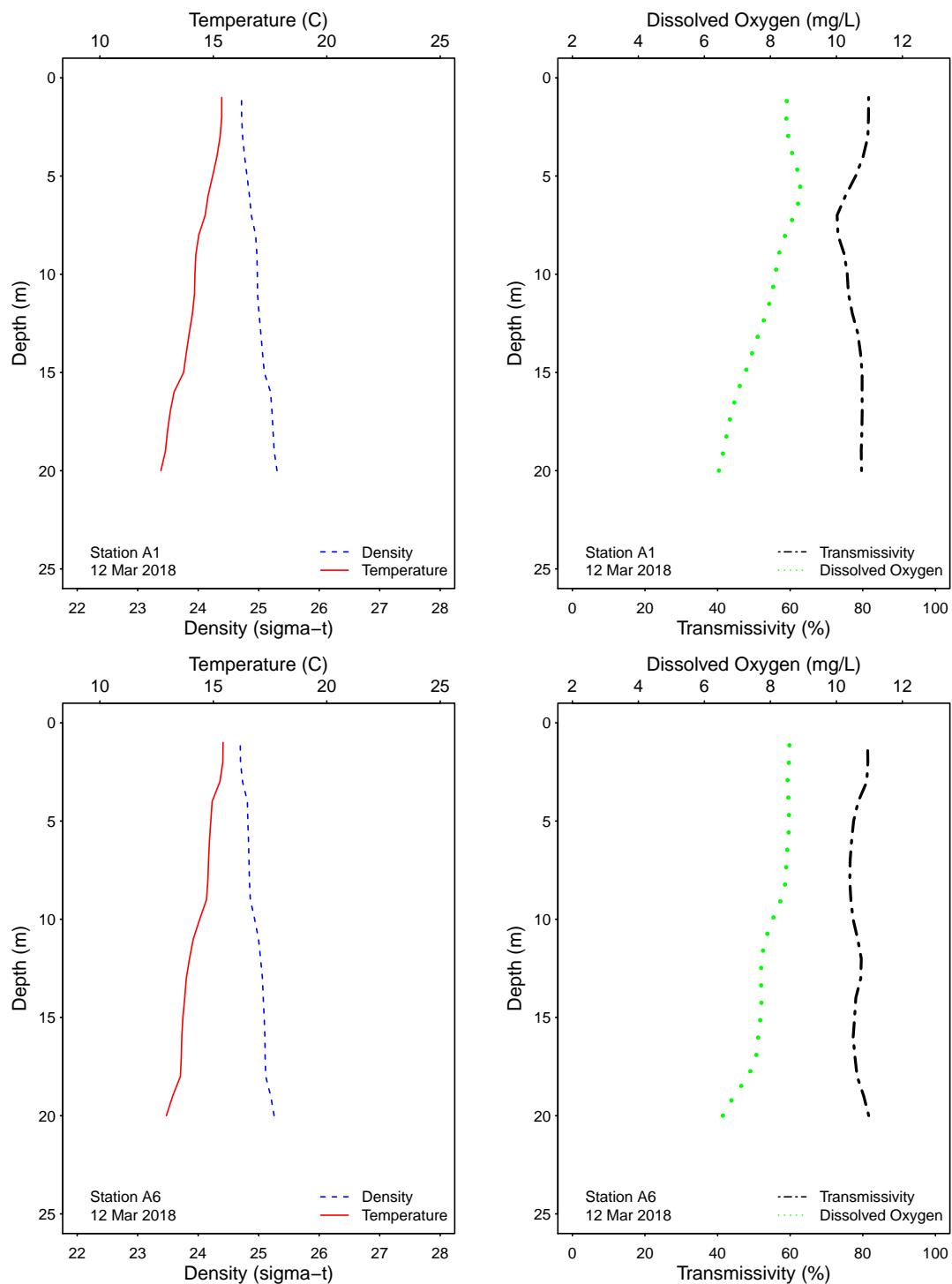


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

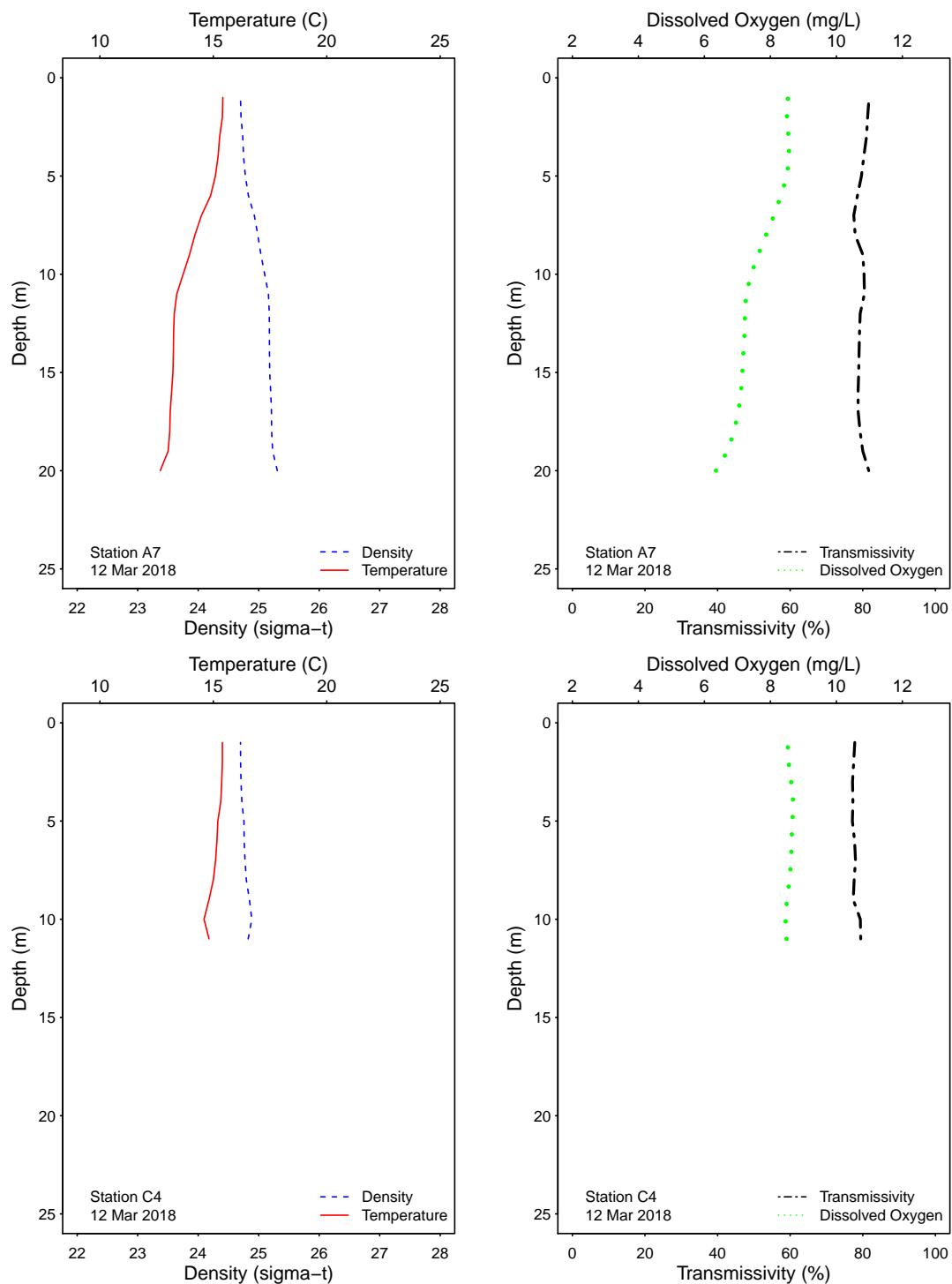


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

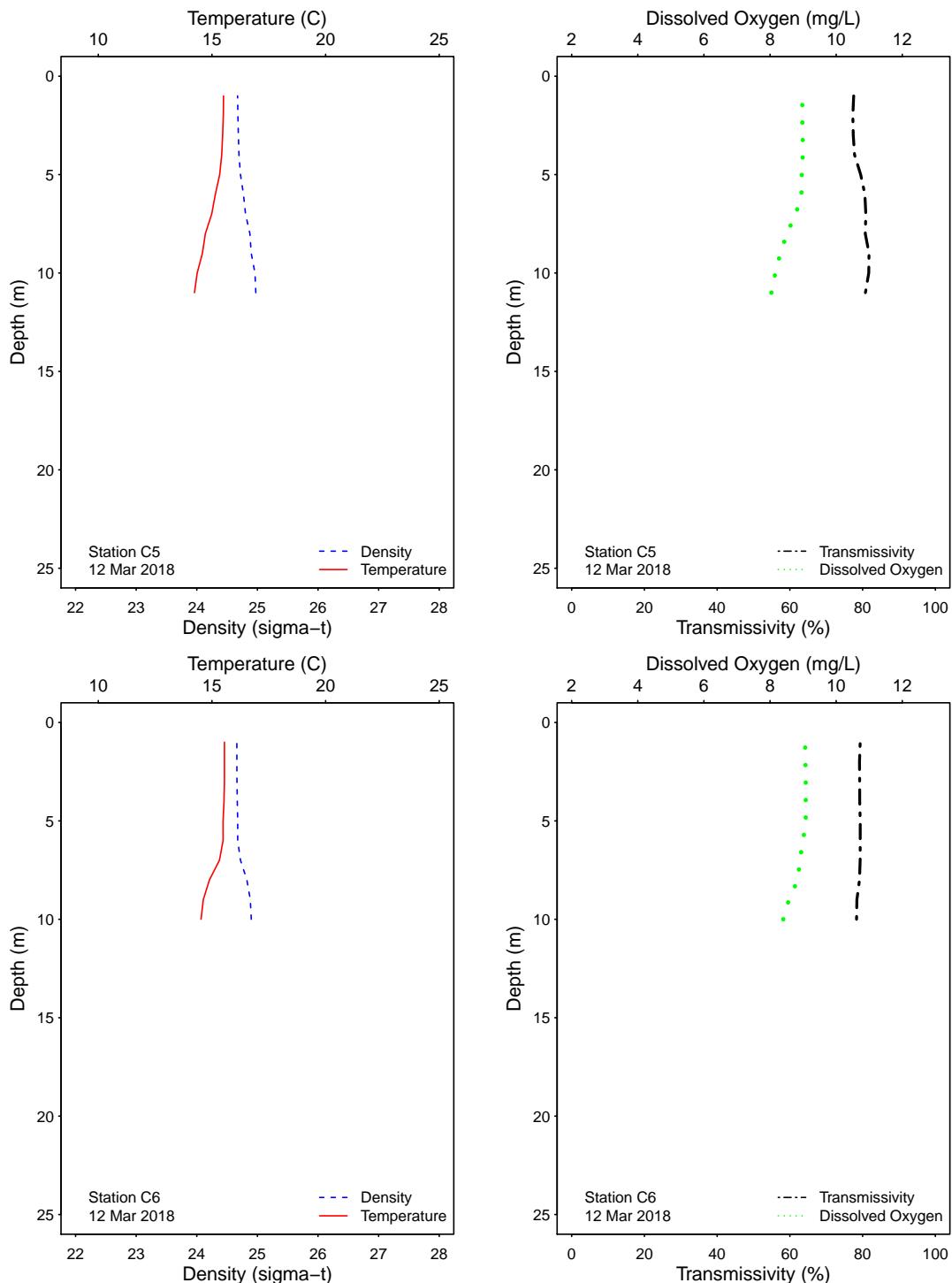


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

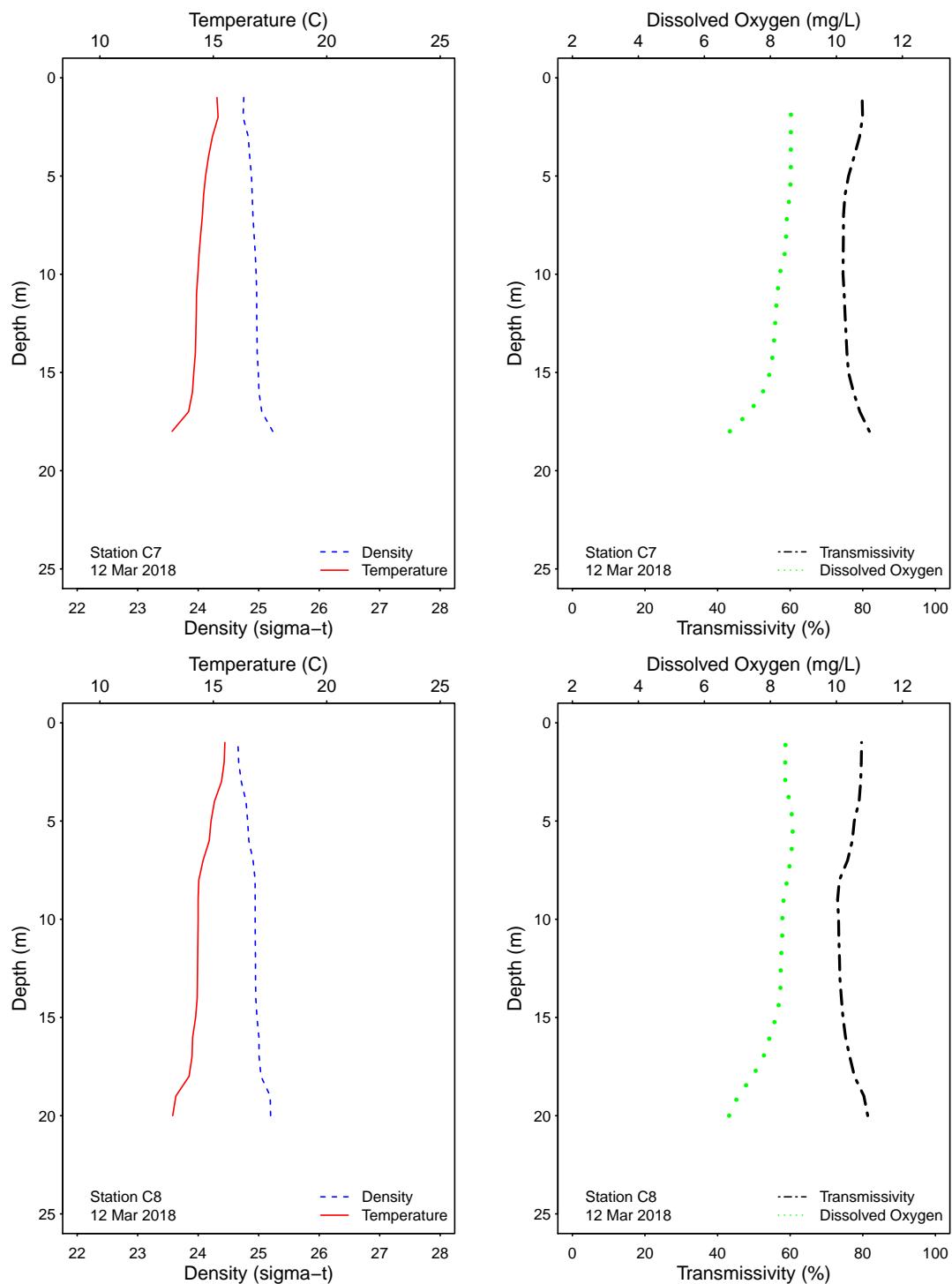


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

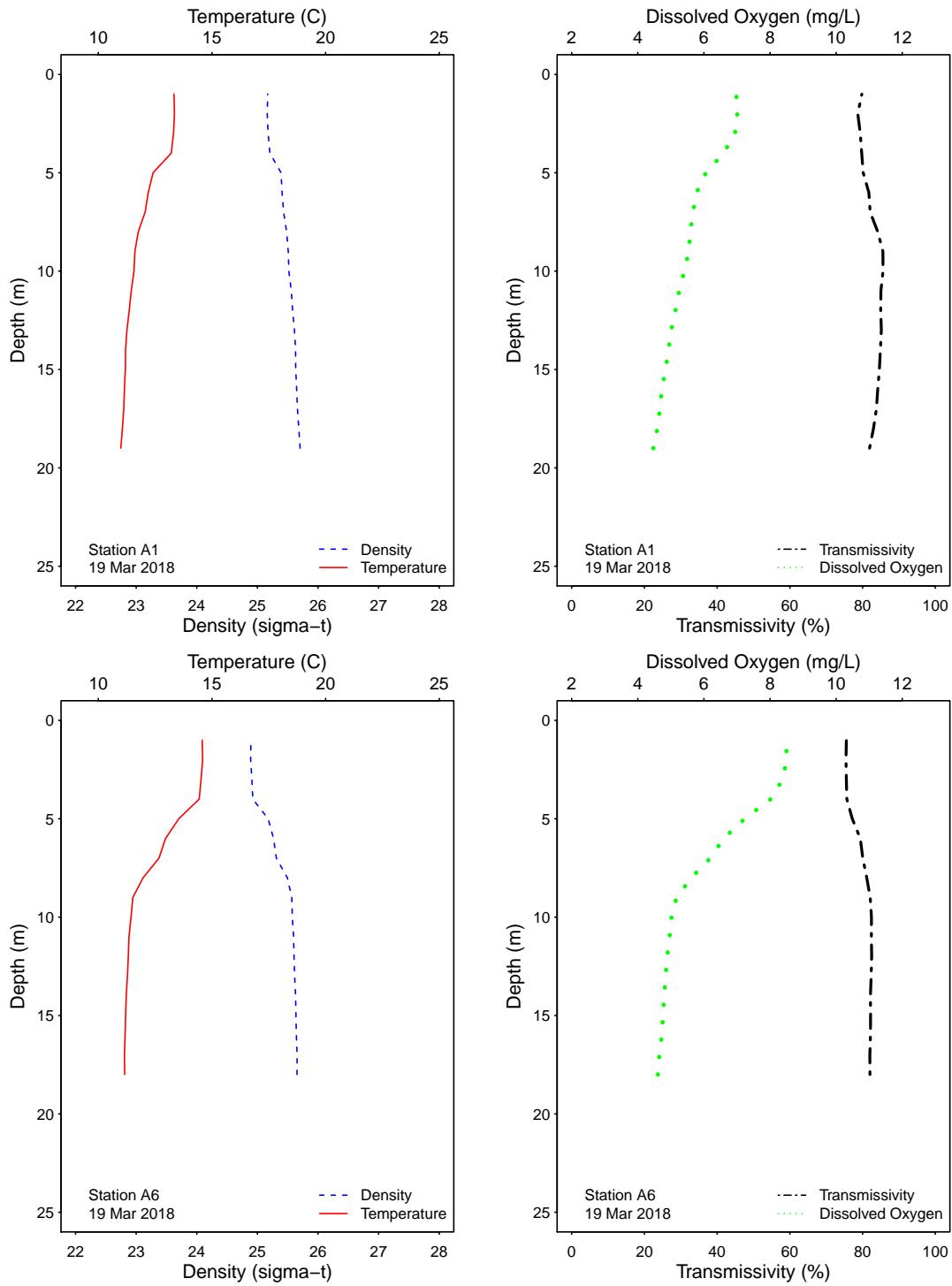


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

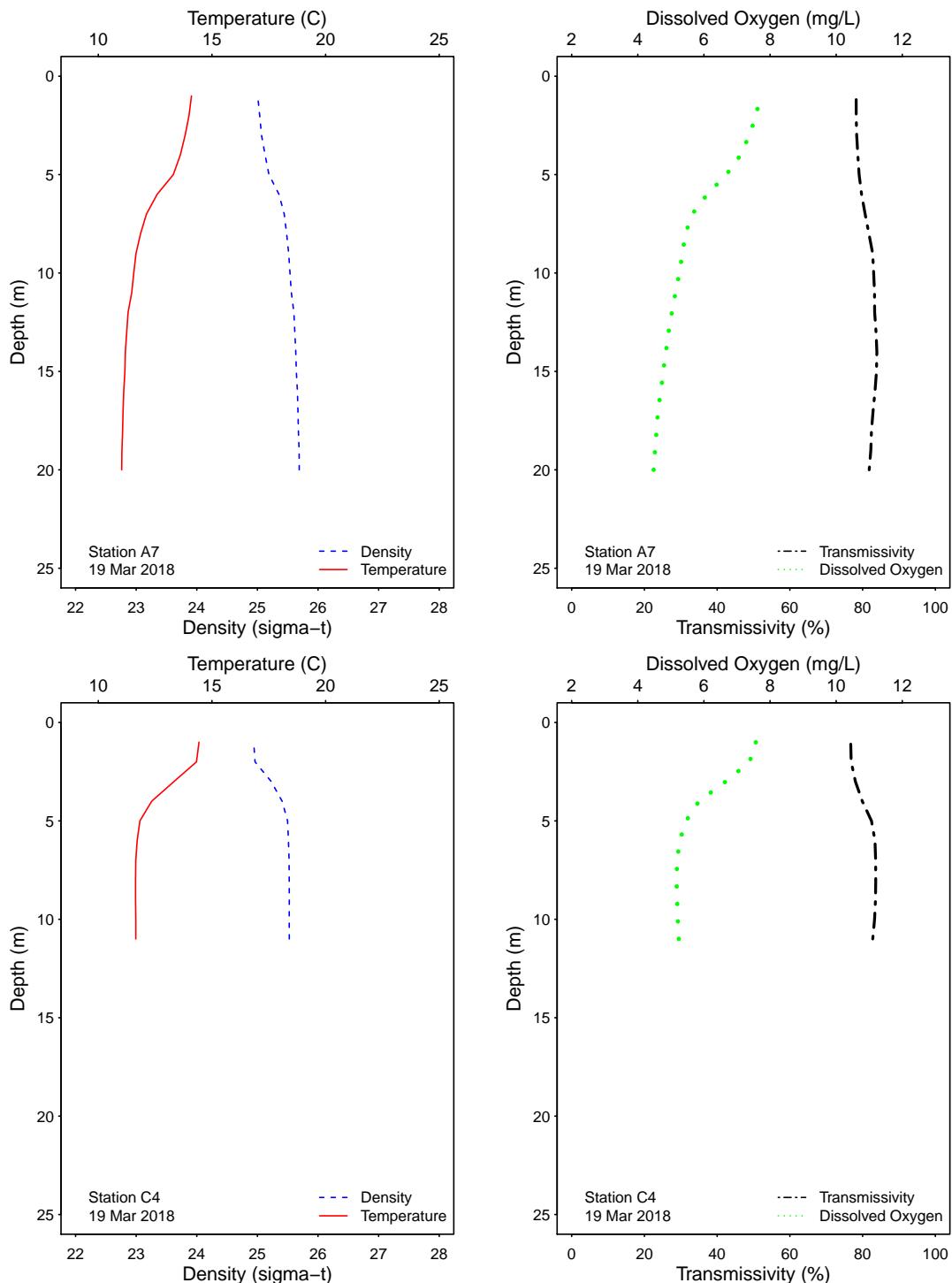


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

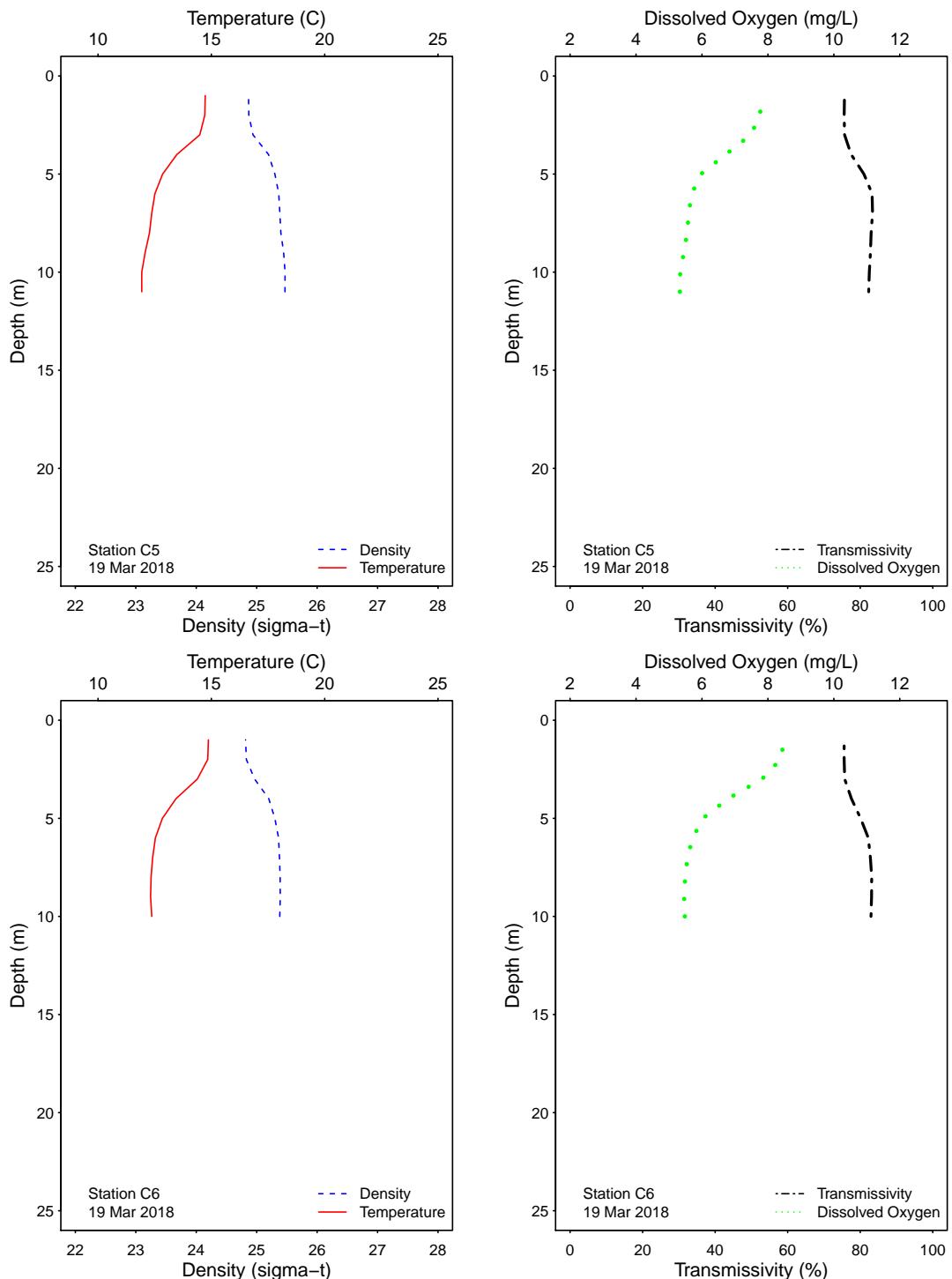


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

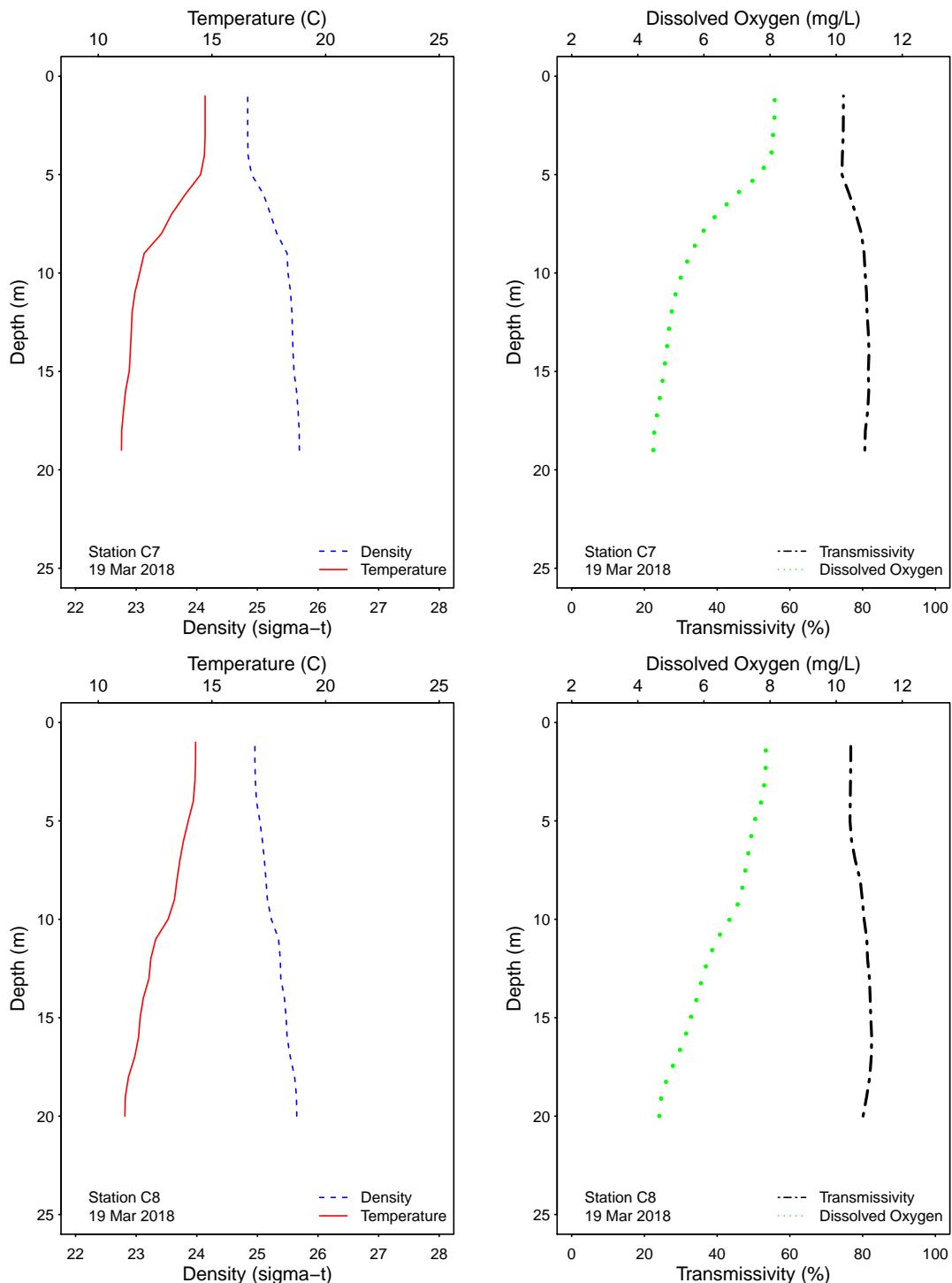


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

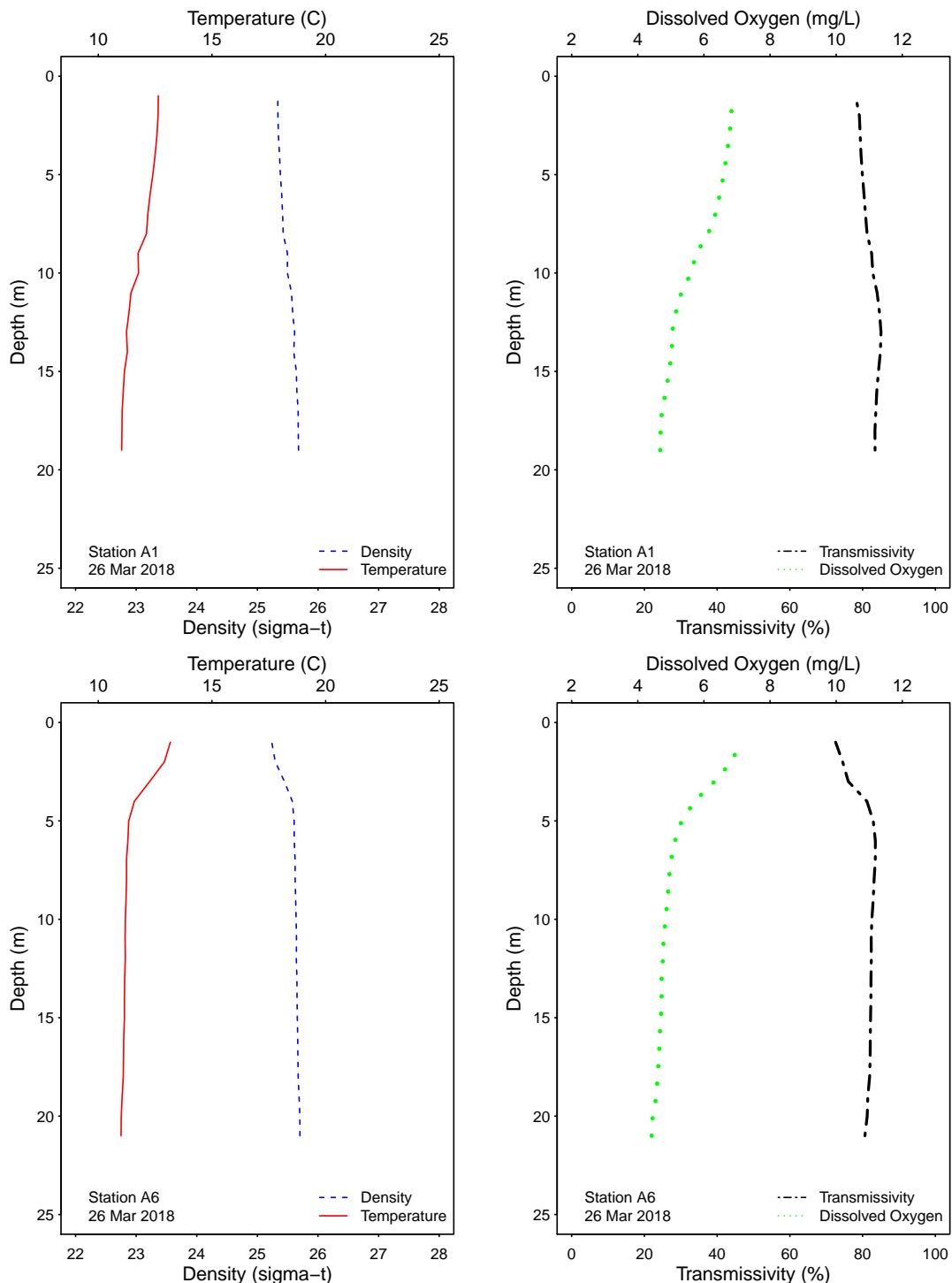


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

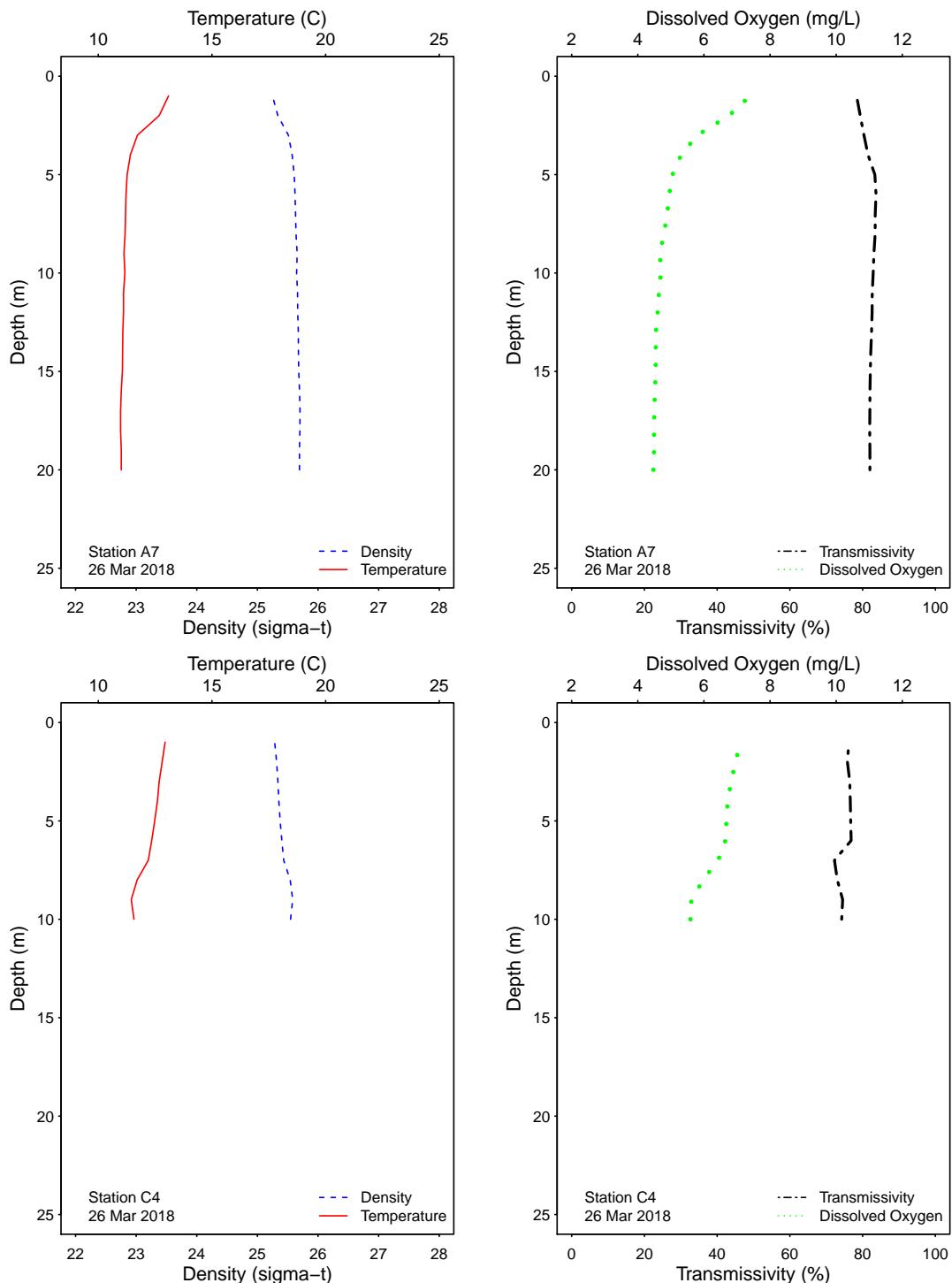


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

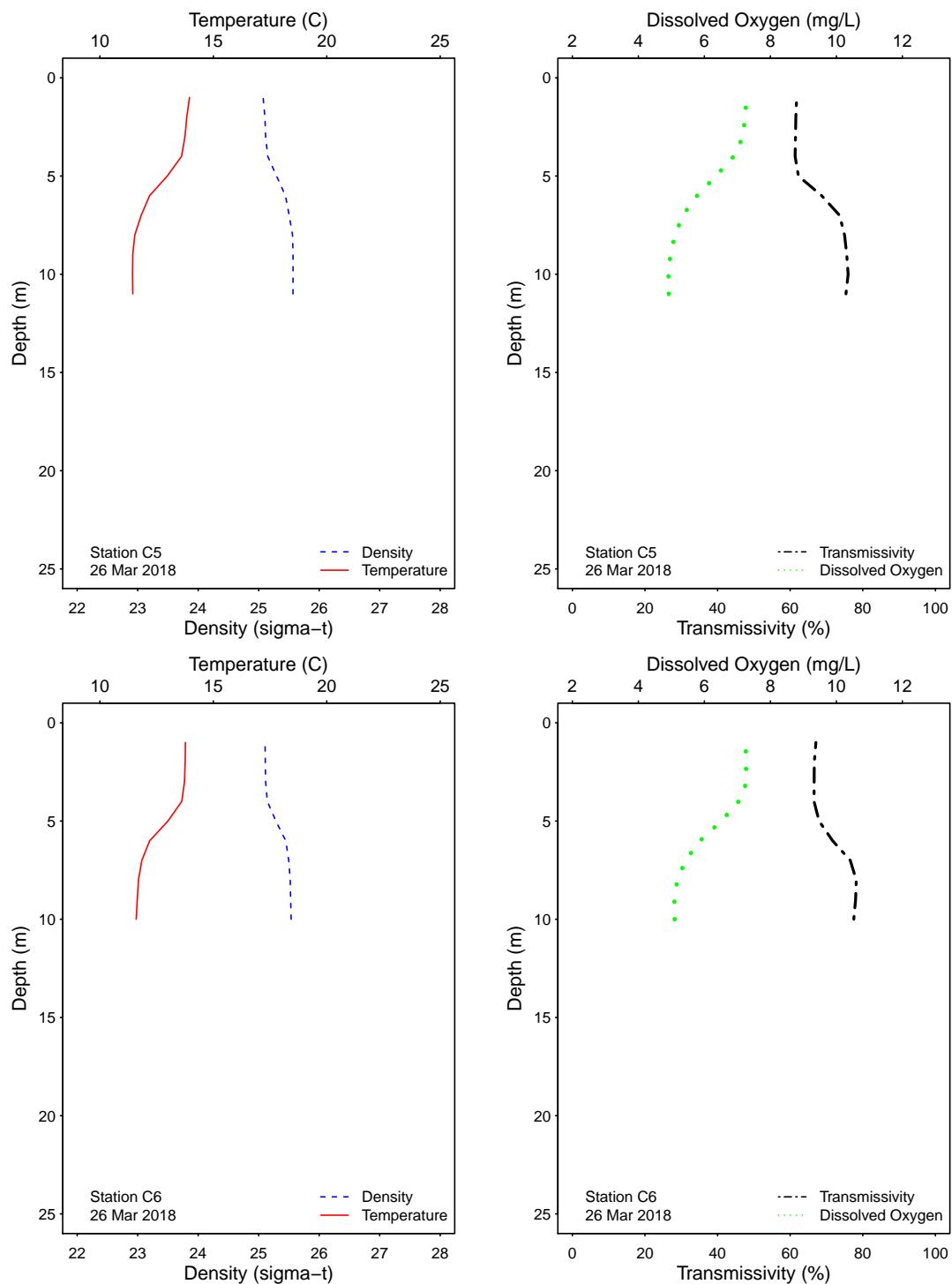


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

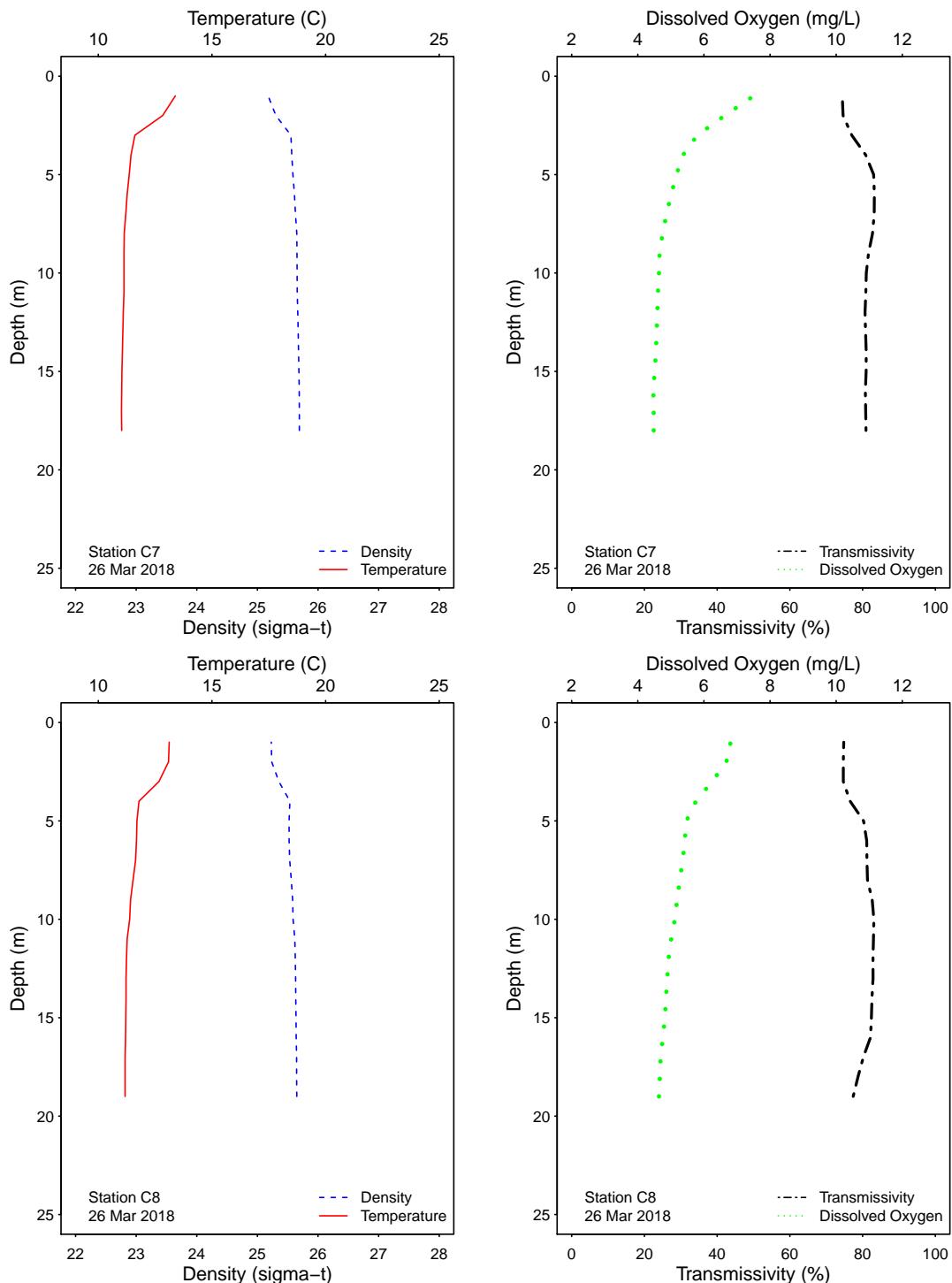


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
A7	05 Mar 2018	18	ZV	LAB DUPLICATE	2e	<2	<2
A7	12 Mar 2018	18	LMA	LAB DUPLICATE	<2	<2	<2
A7	19 Mar 2018	18	AR	LAB DUPLICATE	80	<2	<2
A7	26 Mar 2018	18	AE	LAB DUPLICATE	<2	<2	<2
C7	05 Mar 2018	18	AR	LAB DUPLICATE	2e	<2	<2
C7	12 Mar 2018	18	LMA	LAB DUPLICATE	<2	<2	<2
C7	19 Mar 2018	18	JT	LAB DUPLICATE	80e	8e	<2
C7	26 Mar 2018	18	LMA	LAB DUPLICATE	16e	2e	<2
C8	05 Mar 2018	12	AR	LAB DUPLICATE	4e	2e	<2
C8	12 Mar 2018	12	LMA	LAB DUPLICATE	<2	<2	<2
C8	19 Mar 2018	12	JT	LAB DUPLICATE	<2	<2	<2
C8	26 Mar 2018	12	LMA	LAB DUPLICATE	<2	<2	<2
D12	07 Mar 2018		LMA	FIELD DUPLICATE	<20	<2	<2
D12	07 Mar 2018		LMA	LAB DUPLICATE	<2	<2	2e
D12	14 Mar 2018		JT	FIELD DUPLICATE	16e	2e	20e
D12	14 Mar 2018		JT	LAB DUPLICATE	22e	6e	ns
D12	21 Mar 2018		AE	FIELD DUPLICATE	<2	<2	<2
D12	21 Mar 2018		AE	LAB DUPLICATE	<2	<2	<2
D12	28 Mar 2018		AE	FIELD DUPLICATE	<2	<2	<2
D12	28 Mar 2018		AE	LAB DUPLICATE	<2	<2	<2

ns = not sampled

ND = no data

