



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

(POINT LOMA METROPOLITAN WASTEWATER TREATMENT PLANT)  
NPDES PERMIT No. CA 0107409

## **MARCH 2016**

CITY OF SAN DIEGO  
OCEAN MONITORING PROGRAM  
PUBLIC UTILITIES DEPARTMENT  
ENVIRONMENTAL MONITORING AND TECHNICAL SERVICES DIVISION





THE CITY OF SAN DIEGO

April 30, 2016

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 2016 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2009-0001, 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

TDS/ger

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

Environmental Monitoring and Technical Services Division • Public Utilities

2392 Kincaid Road • San Diego, CA 92101-0811

Tel (619) 758-2300 Fax (619) 758-2309





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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. R9-2009-0001, NPDES Permit No. CA0107409 for the Point Loma Wastewater Treatment Plant (PLWTP), Point Loma Ocean Outfall (PLOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the PLWTP are presented in separate reports.

## MATERIALS AND METHODS

### ***Shore Stations***

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

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

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

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

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for ammonium and bacteriological analyses are then drawn from these bottles into sterile sample bottles for processing at the City's Toxicology Laboratory (ammonium) and Marine Microbiology Laboratory (bacteria), respectively. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of eight scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. The CTD data are presented in both graphical

and tabular form. Additionally, data for depths closest to those where bacteriological samples are collected are extracted from the CTD profiles and presented with the bacteriological data.

### ***Offshore Stations***

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

Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomorphic dissolved organic matter (CDOM), and visual observations of weather and water conditions. Monitoring at sites within State waters also include the collection of discrete grab samples for ammonium analysis (see Table 4.2).

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

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

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

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

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

- (1) Total coliform density shall not exceed 1000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 200 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 35 CFU/100 mL.

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

### 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 2016 Quality Assurance Report, which will be completed in March 2017.

## SUMMARY OF RESULTS

### ***Shore Stations***

- During March 2016, each of the eight shore stations was in compliance with the water-contact standards specified in the Ocean Plan for total coliform, fecal coliform, and *Enterococcus* bacteria.
- 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***

- Of the eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8), only five stations (A1, A6, A7, C7, C8) were sampled five times during March (i.e. March 5, 10, 14, 20, 30). Stations C4, C5, and C6 were abandoned on March 5 due to large ocean swells.
- During March, three of the kelp bed stations were out of compliance with various water-contact standard specified in the Ocean Plan as follows:
  - o The single sample maximum (SSM) standard for *Enterococcus* was exceeded at stations A1, A6, and A7 on one or more days during the month.
  - o The SSM for total coliforms was exceeded at stations A1 and A6 on March 10.
- Per permit requirements, resamples were collected in response to these SSM exceedances (see Table 3.8 for details).

- Water column temperatures ranged from 12.06 to 17.07°C during the month. The difference between surface and bottom waters ranged from 0.11 to 3.94°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.33 to 7.19 µg/L during the month, suggesting the presence of phytoplankton blooms during the month.
- There were no notable visual observations for March.

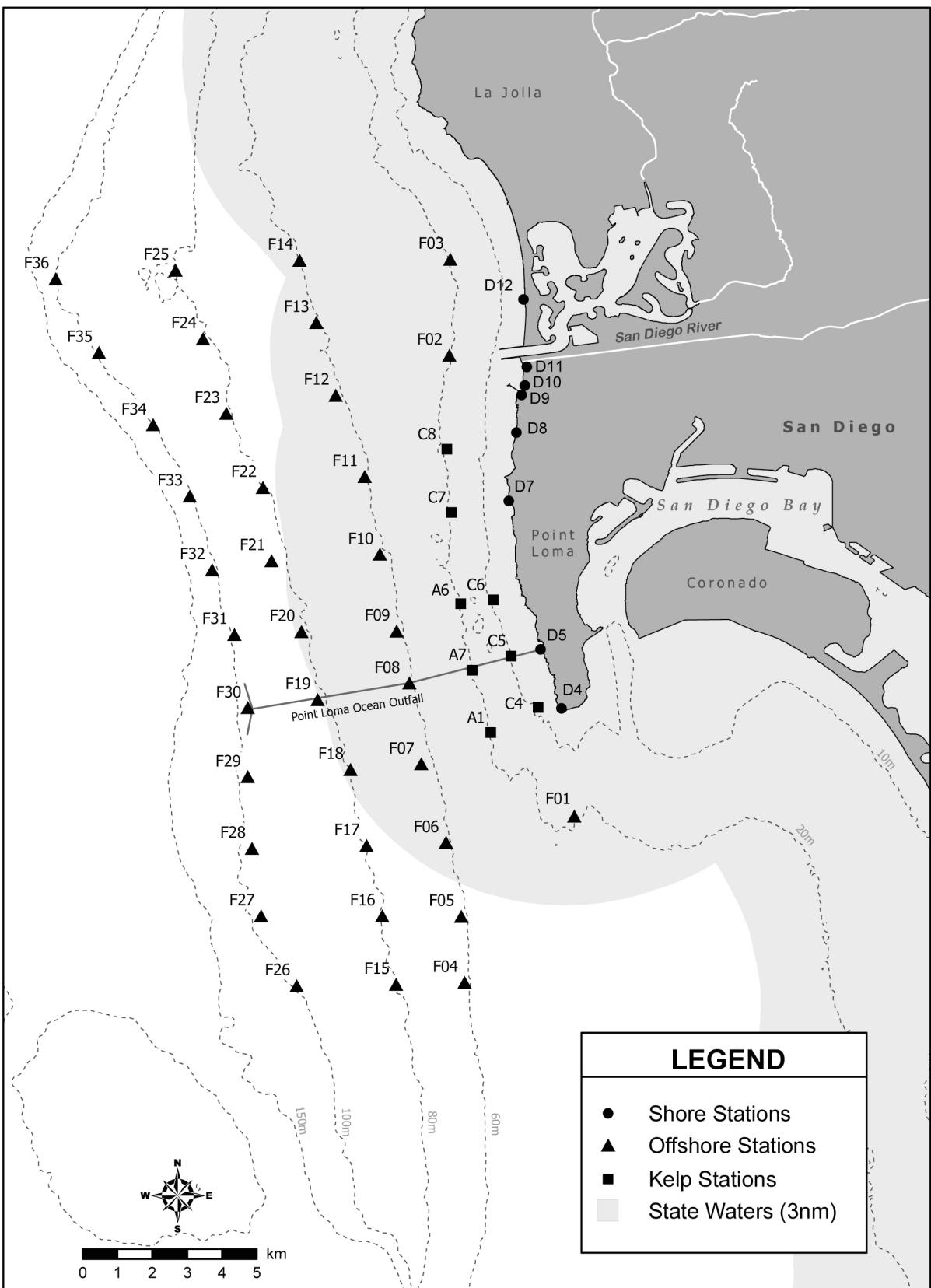
### ***Offshore Stations***

- Quarterly sampling was not conducted during March at the offshore stations. The next quarterly sampling is scheduled for May 2016.



## 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	D9	D10	D11	D12
01 Mar 2016	5	5	23	26	6	12	8	3
02 Mar 2016	5	5	23	26	6	12	8	3
03 Mar 2016	5	5	23	26	6	12	8	3
04 Mar 2016	6	5	27	18	7	13	9	3
05 Mar 2016	6	5	27	18	7	13	9	3
06 Mar 2016	6	5	27	18	7	13	9	3
07 Mar 2016	6	5	27	18	7	13	9	3
08 Mar 2016	6	5	27	18	7	13	9	3
09 Mar 2016	6	5	27	18	7	13	9	3
10 Mar 2016	4	6	15	18	11	8	9	3
11 Mar 2016	4	6	15	18	11	8	9	3
12 Mar 2016	4	6	15	18	11	8	9	3
13 Mar 2016	4	6	15	18	11	8	9	3
14 Mar 2016	4	6	15	18	11	8	9	3
15 Mar 2016	4	6	15	18	11	8	9	3
16 Mar 2016	4	5	23	18	14	11	14	3
17 Mar 2016	4	5	23	18	14	11	14	3
18 Mar 2016	4	5	23	18	14	11	14	3
19 Mar 2016	4	5	23	18	14	11	14	3
20 Mar 2016	4	5	23	18	14	11	14	3
21 Mar 2016	4	5	23	18	14	11	14	3
22 Mar 2016	5	6	19	13	14	9	12	4
23 Mar 2016	5	6	19	13	14	9	12	4
24 Mar 2016	5	6	19	13	14	9	12	4
25 Mar 2016	5	6	19	13	14	9	12	4
26 Mar 2016	5	6	19	13	14	9	12	4
27 Mar 2016	5	6	19	13	14	9	12	4
28 Mar 2016	13	6	9	13	17	9	8	4
29 Mar 2016	13	6	9	13	17	9	8	4
30 Mar 2016	13	6	9	13	17	9	8	4
31 Mar 2016	13	6	9	13	17	9	8	4

\* Geometric mean calculated using n<5

**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	D9	D10	D11	D12
01 Mar 2016	2	2	7	3	2	3	2	2
02 Mar 2016	2	2	7	3	2	3	2	2
03 Mar 2016	2	2	7	3	2	3	2	2
04 Mar 2016	2	2	7	3	2	4	2	2
05 Mar 2016	2	2	7	3	2	4	2	2
06 Mar 2016	2	2	7	3	2	4	2	2
07 Mar 2016	2	2	7	3	2	4	2	2
08 Mar 2016	2	2	7	3	2	4	2	2
09 Mar 2016	2	2	7	3	2	4	2	2
10 Mar 2016	2	2	7	2	2	3	2	2
11 Mar 2016	2	2	7	2	2	3	2	2
12 Mar 2016	2	2	7	2	2	3	2	2
13 Mar 2016	2	2	7	2	2	3	2	2
14 Mar 2016	2	2	7	2	2	3	2	2
15 Mar 2016	2	2	7	2	2	3	2	2
16 Mar 2016	2	2	7	2	2	3	2	2
17 Mar 2016	2	2	7	2	2	3	2	2
18 Mar 2016	2	2	7	2	2	3	2	2
19 Mar 2016	2	2	7	2	2	3	2	2
20 Mar 2016	2	2	7	2	2	3	2	2
21 Mar 2016	2	2	7	2	2	3	2	2
22 Mar 2016	2	2	6	2	2	3	2	3
23 Mar 2016	2	2	6	2	2	3	2	3
24 Mar 2016	2	2	6	2	2	3	2	3
25 Mar 2016	2	2	6	2	2	3	2	3
26 Mar 2016	2	2	6	2	2	3	2	3
27 Mar 2016	2	2	6	2	2	3	2	3
28 Mar 2016	6	2	4	2	2	2	2	3
29 Mar 2016	6	2	4	2	2	2	2	3
30 Mar 2016	6	2	4	2	2	2	2	3
31 Mar 2016	6	2	4	2	2	2	2	3

\* Geometric mean calculated using n<5

**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	D9	D10	D11	D12
01 Mar 2016	2	2	2	12	3	4	4	3
02 Mar 2016	2	2	2	12	3	4	4	3
03 Mar 2016	2	2	2	12	3	4	4	3
04 Mar 2016	2	2	2	10	3	4	3	3
05 Mar 2016	2	2	2	10	3	4	3	3
06 Mar 2016	2	2	2	10	3	4	3	3
07 Mar 2016	2	2	2	10	3	4	3	3
08 Mar 2016	2	2	2	10	3	4	3	3
09 Mar 2016	2	2	2	10	3	4	3	3
10 Mar 2016	2	2	2	3	2	4	4	2
11 Mar 2016	2	2	2	3	2	4	4	2
12 Mar 2016	2	2	2	2	2	4	4	2
13 Mar 2016	2	2	2	2	2	4	4	2
14 Mar 2016	2	2	2	2	2	4	4	2
15 Mar 2016	2	2	2	2	2	4	4	2
16 Mar 2016	2	2	2	2	2	3	4	2
17 Mar 2016	2	2	2	2	2	3	4	2
18 Mar 2016	2	2	2	2	2	3	4	2
19 Mar 2016	2	2	2	2	2	3	4	2
20 Mar 2016	2	2	2	2	2	3	4	2
21 Mar 2016	2	2	2	2	2	3	4	2
22 Mar 2016	3	2	3	2	2	2	4	4
23 Mar 2016	3	2	3	2	2	2	4	4
24 Mar 2016	3	2	3	2	2	2	4	4
25 Mar 2016	3	2	3	2	2	2	4	4
26 Mar 2016	3	2	3	2	2	2	4	4
27 Mar 2016	3	2	3	2	2	2	4	4
28 Mar 2016	5	2	3	2	2	2	4	4
29 Mar 2016	5	2	3	2	2	2	4	4
30 Mar 2016	5	2	3	2	2	2	4	4
31 Mar 2016	5	2	3	2	2	2	4	4

\* Geometric mean calculated using n<5

**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	D9	D10	D11	D12
04 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
10 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
16 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
22 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
28 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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	D9	D10	D11	D12
04 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
10 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
16 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
22 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
28 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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	D9	D10	D11	D12
04 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
10 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
16 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
22 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
28 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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	D9	D10	D11	D12
04 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
10 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
16 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
22 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC
28 Mar 2016	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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	04 Mar 2016	905	6e	<2	<2	0.33
	10 Mar 2016	943	<2	<2	<2	1.00
	16 Mar 2016	947	<2	<2	<2	1.00
	22 Mar 2016	826	40e	6e	20e	0.15
	28 Mar 2016	936	400	160e	24e	0.40
D5	04 Mar 2016	853	10e	<2	<2	0.20
	10 Mar 2016	933	4e	<2	<2	0.50
	16 Mar 2016	921	<2	<2	<2	1.00
	22 Mar 2016	848	40e	<2	4e	0.05
	28 Mar 2016	911	<2	2e	<2	1.00
D7	04 Mar 2016	927	8e	<2	4e	0.25
	10 Mar 2016	1015	<2	<2	<2	1.00
	16 Mar 2016	1017	<20	<2	<2	0.10
	22 Mar 2016	730	100e	44	12e	0.44
	28 Mar 2016	1000	<2	<2	<2	1.00
D8	04 Mar 2016	940	12e	2e	2e	0.17
	10 Mar 2016	1030	20e	<2	2e	0.10
	16 Mar 2016	1032	<20	2e	<2	0.10
	22 Mar 2016	800	4e	<2	<2	0.50
	28 Mar 2016	1014	20e	<2	2e	0.10
D9	04 Mar 2016	951	4e	<2	<2	0.50
	10 Mar 2016	1044	<20	<2	<2	0.10
	16 Mar 2016	1043	<20	<2	<2	0.10
	22 Mar 2016	1026	20e	<2	<2	0.10
	28 Mar 2016	1032	40e	<2	<2	0.05
D10	04 Mar 2016	1000	6e	4e	<2	0.67
	10 Mar 2016	1056	4e	<2	<2	0.50
	16 Mar 2016	1053	<20	<2	2e	0.10
	22 Mar 2016	1013	8e	<2	4e	0.25
	28 Mar 2016	1043	<20	<2	<2	0.10
D11	04 Mar 2016	1008	32e	<2	6e	0.06
	10 Mar 2016	1109	2e	<2	10e	1.00
	16 Mar 2016	1104	<20	<2	6e	0.10
	22 Mar 2016	1002	10e	<2	2e	0.20
	28 Mar 2016	1056	<2	<2	2e	1.00

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enteric</b>	<b>F:T</b>
D12	04 Mar 2016	1028	<2	<2	2e	1.00
D12	10 Mar 2016	1127	<2	<2	<2	1.00
D12	16 Mar 2016	1125	2e	<2	<2	1.00
D12	22 Mar 2016	945	60e	20e	100e	0.33
D12	28 Mar 2016	1121	<2	<2	<2	1.00

ns = not sampled

ND = no data

**Table 2.9**

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

Station	Date	Parameter	Value
D4	04 Mar 2016	Arrive Time	905
D4	04 Mar 2016	Weather	Partly Cloudy
D4	04 Mar 2016	Wind Speed (kts)	1.5
D4	04 Mar 2016	Wind Dir	NW
D4	04 Mar 2016	Animal Life	None
D4	04 Mar 2016	Floatables	None
D4	04 Mar 2016	Water Color	Green
D4	04 Mar 2016	Current Direction	NW
D4	04 Mar 2016	Wave Height Low (ft)	2
D4	04 Mar 2016	High Tide (ft)	4.7
D4	04 Mar 2016	High Tide Time	512
D4	04 Mar 2016	Low Tide (ft)	-0.1
D4	04 Mar 2016	Low Tide Time	1228
D4	04 Mar 2016	Comments	Kelp; Seagrass; Water clear
D4	10 Mar 2016	Arrive Time	943
D4	10 Mar 2016	Weather	Sunny
D4	10 Mar 2016	Wind Speed (kts)	4.6
D4	10 Mar 2016	Wind Dir	NW
D4	10 Mar 2016	Animal Life	None
D4	10 Mar 2016	Floatables	None
D4	10 Mar 2016	Water Color	Green
D4	10 Mar 2016	Current Direction	NW
D4	10 Mar 2016	Wave Height Low (ft)	3
D4	10 Mar 2016	High Tide (ft)	5.4
D4	10 Mar 2016	High Tide Time	941
D4	10 Mar 2016	Low Tide (ft)	-0.2
D4	10 Mar 2016	Low Tide Time	340
D4	10 Mar 2016	Comments	Algae; Water clear
D4	16 Mar 2016	Arrive Time	947
D4	16 Mar 2016	Weather	Sunny
D4	16 Mar 2016	Wind Speed (kts)	1.9
D4	16 Mar 2016	Wind Dir	N
D4	16 Mar 2016	Animal Life	None
D4	16 Mar 2016	Floatables	None
D4	16 Mar 2016	Water Color	Green
D4	16 Mar 2016	Current Direction	N
D4	16 Mar 2016	Wave Height Low (ft)	4
D4	16 Mar 2016	High Tide (ft)	4.5
D4	16 Mar 2016	High Tide Time	412
D4	16 Mar 2016	Low Tide (ft)	0.1
D4	16 Mar 2016	Low Tide Time	1152
D4	16 Mar 2016	Comments	Water clear
D4	22 Mar 2016	Arrive Time	826
D4	22 Mar 2016	Weather	Sunny
D4	22 Mar 2016	Wind Speed (kts)	10
D4	22 Mar 2016	Wind Dir	W
D4	22 Mar 2016	Animal Life	None
D4	22 Mar 2016	Floatables	None

Station	Date	Parameter	Value
D4	22 Mar 2016	Water Color	Green
D4	22 Mar 2016	Current Direction	W
D4	22 Mar 2016	Wave Height Low (ft)	4
D4	22 Mar 2016	High Tide (ft)	5
D4	22 Mar 2016	High Tide Time	916
D4	22 Mar 2016	Low Tide (ft)	0.5
D4	22 Mar 2016	Low Tide Time	322
D4	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid
D4	28 Mar 2016	Arrive Time	936
D4	28 Mar 2016	Weather	Partly Cloudy
D4	28 Mar 2016	Wind Speed (kts)	4.2
D4	28 Mar 2016	Wind Dir	W
D4	28 Mar 2016	Animal Life	None
D4	28 Mar 2016	Floatables	None
D4	28 Mar 2016	Water Color	Green
D4	28 Mar 2016	Current Direction	W
D4	28 Mar 2016	Wave Height Low (ft)	1
D4	28 Mar 2016	High Tide (ft)	3
D4	28 Mar 2016	High Tide Time	1301
D4	28 Mar 2016	Low Tide (ft)	0.7
D4	28 Mar 2016	Low Tide Time	658
D4	28 Mar 2016	Comments	Kelp; Seagrass; Algae; Water clear
D5	04 Mar 2016	Arrive Time	853
D5	04 Mar 2016	Weather	Partly Cloudy
D5	04 Mar 2016	Wind Speed (kts)	1.7
D5	04 Mar 2016	Wind Dir	NW
D5	04 Mar 2016	Animal Life	None
D5	04 Mar 2016	Floatables	None
D5	04 Mar 2016	Water Color	Green
D5	04 Mar 2016	Current Direction	NW
D5	04 Mar 2016	Wave Height Low (ft)	3
D5	04 Mar 2016	High Tide (ft)	4.7
D5	04 Mar 2016	High Tide Time	512
D5	04 Mar 2016	Low Tide (ft)	-0.1
D5	04 Mar 2016	Low Tide Time	1228
D5	04 Mar 2016	Comments	Kelp; Seagrass; Water clear
D5	10 Mar 2016	Arrive Time	933
D5	10 Mar 2016	Weather	Sunny
D5	10 Mar 2016	Wind Speed (kts)	2.3
D5	10 Mar 2016	Wind Dir	W
D5	10 Mar 2016	Animal Life	1 Seal
D5	10 Mar 2016	Floatables	None
D5	10 Mar 2016	Water Color	Green
D5	10 Mar 2016	Current Direction	W
D5	10 Mar 2016	Wave Height Low (ft)	3
D5	10 Mar 2016	High Tide (ft)	5.4
D5	10 Mar 2016	High Tide Time	941
D5	10 Mar 2016	Low Tide (ft)	-0.2
D5	10 Mar 2016	Low Tide Time	340
D5	10 Mar 2016	Comments	Seagrass; Algae; Water clear
D5	16 Mar 2016	Arrive Time	921

Station	Date	Parameter	Value
D5	16 Mar 2016	Weather	Sunny
D5	16 Mar 2016	Wind Speed (kts)	1.7
D5	16 Mar 2016	Wind Dir	N
D5	16 Mar 2016	Animal Life	30 Birds
D5	16 Mar 2016	Floatables	None
D5	16 Mar 2016	Water Color	Green
D5	16 Mar 2016	Current Direction	N
D5	16 Mar 2016	Wave Height Low (ft)	4
D5	16 Mar 2016	High Tide (ft)	4.5
D5	16 Mar 2016	High Tide Time	412
D5	16 Mar 2016	Low Tide (ft)	0.1
D5	16 Mar 2016	Low Tide Time	1152
D5	16 Mar 2016	Comments	Water clear
D5	22 Mar 2016	Arrive Time	848
D5	22 Mar 2016	Weather	Sunny
D5	22 Mar 2016	Wind Speed (kts)	10
D5	22 Mar 2016	Wind Dir	W
D5	22 Mar 2016	Animal Life	None
D5	22 Mar 2016	Floatables	None
D5	22 Mar 2016	Water Color	Green
D5	22 Mar 2016	Current Direction	W
D5	22 Mar 2016	Wave Height Low (ft)	4
D5	22 Mar 2016	High Tide (ft)	5
D5	22 Mar 2016	High Tide Time	916
D5	22 Mar 2016	Low Tide (ft)	0.5
D5	22 Mar 2016	Low Tide Time	322
D5	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid
D5	28 Mar 2016	Arrive Time	911
D5	28 Mar 2016	Weather	Cloudy
D5	28 Mar 2016	Wind Speed (kts)	2.9
D5	28 Mar 2016	Wind Dir	S
D5	28 Mar 2016	Animal Life	None
D5	28 Mar 2016	Floatables	None
D5	28 Mar 2016	Water Color	Green
D5	28 Mar 2016	Current Direction	S
D5	28 Mar 2016	Wave Height Low (ft)	2
D5	28 Mar 2016	High Tide (ft)	3
D5	28 Mar 2016	High Tide Time	1301
D5	28 Mar 2016	Low Tide (ft)	0.7
D5	28 Mar 2016	Low Tide Time	658
D5	28 Mar 2016	Comments	Kelp; Seagrass; Algae; Water clear
D7	04 Mar 2016	Arrive Time	927
D7	04 Mar 2016	Weather	Partly Cloudy
D7	04 Mar 2016	Wind Speed (kts)	0.7
D7	04 Mar 2016	Wind Dir	W
D7	04 Mar 2016	Animal Life	None
D7	04 Mar 2016	Floatables	None
D7	04 Mar 2016	Water Color	Green
D7	04 Mar 2016	Current Direction	W
D7	04 Mar 2016	Wave Height Low (ft)	3
D7	04 Mar 2016	High Tide (ft)	4.7
D7	04 Mar 2016	High Tide Time	512

Station	Date	Parameter	Value
D7	04 Mar 2016	Low Tide (ft)	-0.1
D7	04 Mar 2016	Low Tide Time	1228
D7	04 Mar 2016	Comments	Kelp; Seagrass; 2 Surfers; Water clear
D7	10 Mar 2016	Arrive Time	1015
D7	10 Mar 2016	Weather	Sunny
D7	10 Mar 2016	Wind Speed (kts)	2.5
D7	10 Mar 2016	Wind Dir	NW
D7	10 Mar 2016	Animal Life	None
D7	10 Mar 2016	Floatables	None
D7	10 Mar 2016	Water Color	Green
D7	10 Mar 2016	Current Direction	NW
D7	10 Mar 2016	Wave Height Low (ft)	5
D7	10 Mar 2016	High Tide (ft)	5.4
D7	10 Mar 2016	High Tide Time	941
D7	10 Mar 2016	Low Tide (ft)	-0.5
D7	10 Mar 2016	Low Tide Time	1602
D7	10 Mar 2016	Comments	Seagrass; Algae; Water clear
D7	16 Mar 2016	Arrive Time	1017
D7	16 Mar 2016	Weather	Sunny
D7	16 Mar 2016	Wind Speed (kts)	2.7
D7	16 Mar 2016	Wind Dir	N
D7	16 Mar 2016	Animal Life	None
D7	16 Mar 2016	Floatables	None
D7	16 Mar 2016	Water Color	Green
D7	16 Mar 2016	Current Direction	N
D7	16 Mar 2016	Wave Height Low (ft)	5
D7	16 Mar 2016	High Tide (ft)	4.5
D7	16 Mar 2016	High Tide Time	412
D7	16 Mar 2016	Low Tide (ft)	0.1
D7	16 Mar 2016	Low Tide Time	1152
D7	16 Mar 2016	Comments	5 Surfers; Water clear
D7	22 Mar 2016	Arrive Time	730
D7	22 Mar 2016	Weather	Partly Cloudy
D7	22 Mar 2016	Wind Speed (kts)	10
D7	22 Mar 2016	Wind Dir	W
D7	22 Mar 2016	Animal Life	None
D7	22 Mar 2016	Floatables	None
D7	22 Mar 2016	Water Color	Green
D7	22 Mar 2016	Current Direction	W
D7	22 Mar 2016	Wave Height Low (ft)	4
D7	22 Mar 2016	High Tide (ft)	5
D7	22 Mar 2016	High Tide Time	916
D7	22 Mar 2016	Low Tide (ft)	0.5
D7	22 Mar 2016	Low Tide Time	322
D7	22 Mar 2016	Comments	None
D7	28 Mar 2016	Arrive Time	1000
D7	28 Mar 2016	Weather	Cloudy
D7	28 Mar 2016	Wind Speed (kts)	2.7
D7	28 Mar 2016	Wind Dir	W
D7	28 Mar 2016	Animal Life	None
D7	28 Mar 2016	Floatables	None

Station	Date	Parameter	Value
D7	28 Mar 2016	Water Color	Green
D7	28 Mar 2016	Current Direction	W
D7	28 Mar 2016	Wave Height Low (ft)	1
D7	28 Mar 2016	High Tide (ft)	3
D7	28 Mar 2016	High Tide Time	1301
D7	28 Mar 2016	Low Tide (ft)	0.7
D7	28 Mar 2016	Low Tide Time	658
D7	28 Mar 2016	Comments	Kelp; Seagrass; Algae; Water clear
D8	04 Mar 2016	Arrive Time	940
D8	04 Mar 2016	Weather	Partly Cloudy
D8	04 Mar 2016	Wind Speed (kts)	3.3
D8	04 Mar 2016	Wind Dir	W
D8	04 Mar 2016	Animal Life	2 Dogs
D8	04 Mar 2016	Floatables	None
D8	04 Mar 2016	Water Color	Green
D8	04 Mar 2016	Current Direction	W
D8	04 Mar 2016	Wave Height Low (ft)	2
D8	04 Mar 2016	High Tide (ft)	4.7
D8	04 Mar 2016	High Tide Time	512
D8	04 Mar 2016	Low Tide (ft)	-0.1
D8	04 Mar 2016	Low Tide Time	1228
D8	04 Mar 2016	Comments	Kelp; Seagrass; 2 Persons; Water clear
D8	10 Mar 2016	Arrive Time	1030
D8	10 Mar 2016	Weather	Sunny
D8	10 Mar 2016	Wind Speed (kts)	4.4
D8	10 Mar 2016	Wind Dir	NW
D8	10 Mar 2016	Animal Life	None
D8	10 Mar 2016	Floatables	None
D8	10 Mar 2016	Water Color	Green
D8	10 Mar 2016	Current Direction	NW
D8	10 Mar 2016	Wave Height Low (ft)	4
D8	10 Mar 2016	High Tide (ft)	5.4
D8	10 Mar 2016	High Tide Time	941
D8	10 Mar 2016	Low Tide (ft)	-0.5
D8	10 Mar 2016	Low Tide Time	1602
D8	10 Mar 2016	Comments	Kelp; Seagrass; Water clear
D8	16 Mar 2016	Arrive Time	1032
D8	16 Mar 2016	Weather	Sunny
D8	16 Mar 2016	Wind Speed (kts)	2.3
D8	16 Mar 2016	Wind Dir	N
D8	16 Mar 2016	Animal Life	None
D8	16 Mar 2016	Floatables	None
D8	16 Mar 2016	Water Color	Green
D8	16 Mar 2016	Current Direction	N
D8	16 Mar 2016	Wave Height Low (ft)	4
D8	16 Mar 2016	High Tide (ft)	4.5
D8	16 Mar 2016	High Tide Time	412
D8	16 Mar 2016	Low Tide (ft)	0.1
D8	16 Mar 2016	Low Tide Time	1152
D8	16 Mar 2016	Comments	Water clear
D8	22 Mar 2016	Arrive Time	800

Station	Date	Parameter	Value
D8	22 Mar 2016	Weather	Sunny
D8	22 Mar 2016	Wind Speed (kts)	10
D8	22 Mar 2016	Wind Dir	W
D8	22 Mar 2016	Animal Life	None
D8	22 Mar 2016	Floatables	None
D8	22 Mar 2016	Water Color	Green
D8	22 Mar 2016	Current Direction	W
D8	22 Mar 2016	Wave Height Low (ft)	4
D8	22 Mar 2016	High Tide (ft)	5
D8	22 Mar 2016	High Tide Time	916
D8	22 Mar 2016	Low Tide (ft)	0.5
D8	22 Mar 2016	Low Tide Time	322
D8	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid; Railing falling down
D8	28 Mar 2016	Arrive Time	1014
D8	28 Mar 2016	Weather	Partly Cloudy
D8	28 Mar 2016	Wind Speed (kts)	7.3
D8	28 Mar 2016	Wind Dir	S
D8	28 Mar 2016	Animal Life	None
D8	28 Mar 2016	Floatables	None
D8	28 Mar 2016	Water Color	Green
D8	28 Mar 2016	Current Direction	S
D8	28 Mar 2016	Wave Height Low (ft)	3
D8	28 Mar 2016	High Tide (ft)	3
D8	28 Mar 2016	High Tide Time	1301
D8	28 Mar 2016	Low Tide (ft)	0.7
D8	28 Mar 2016	Low Tide Time	658
D8	28 Mar 2016	Comments	Kelp; Seagrass; Water clear
D9	04 Mar 2016	Arrive Time	951
D9	04 Mar 2016	Weather	Sunny
D9	04 Mar 2016	Wind Speed (kts)	3.3
D9	04 Mar 2016	Wind Dir	W
D9	04 Mar 2016	Animal Life	None
D9	04 Mar 2016	Floatables	None
D9	04 Mar 2016	Water Color	Green
D9	04 Mar 2016	Current Direction	W
D9	04 Mar 2016	Wave Height Low (ft)	3
D9	04 Mar 2016	High Tide (ft)	4.7
D9	04 Mar 2016	High Tide Time	512
D9	04 Mar 2016	Low Tide (ft)	-0.1
D9	04 Mar 2016	Low Tide Time	1228
D9	04 Mar 2016	Comments	Kelp; Seagrass; Water clear
D9	10 Mar 2016	Arrive Time	1044
D9	10 Mar 2016	Weather	Sunny
D9	10 Mar 2016	Wind Speed (kts)	3.3
D9	10 Mar 2016	Wind Dir	NW
D9	10 Mar 2016	Animal Life	None
D9	10 Mar 2016	Floatables	None
D9	10 Mar 2016	Water Color	Green
D9	10 Mar 2016	Current Direction	NW
D9	10 Mar 2016	Wave Height Low (ft)	4
D9	10 Mar 2016	High Tide (ft)	5.4
D9	10 Mar 2016	High Tide Time	941

Station	Date	Parameter	Value
D9	10 Mar 2016	Low Tide (ft)	-0.5
D9	10 Mar 2016	Low Tide Time	1602
D9	10 Mar 2016	Comments	Algae; Water clear
D9	16 Mar 2016	Arrive Time	1043
D9	16 Mar 2016	Weather	Sunny
D9	16 Mar 2016	Wind Speed (kts)	1.5
D9	16 Mar 2016	Wind Dir	N
D9	16 Mar 2016	Animal Life	None
D9	16 Mar 2016	Floatables	None
D9	16 Mar 2016	Water Color	Green
D9	16 Mar 2016	Current Direction	N
D9	16 Mar 2016	Wave Height Low (ft)	4
D9	16 Mar 2016	High Tide (ft)	4.5
D9	16 Mar 2016	High Tide Time	412
D9	16 Mar 2016	Low Tide (ft)	0.1
D9	16 Mar 2016	Low Tide Time	1152
D9	16 Mar 2016	Comments	Water clear
D9	22 Mar 2016	Arrive Time	1026
D9	22 Mar 2016	Weather	Partly Cloudy
D9	22 Mar 2016	Wind Speed (kts)	10
D9	22 Mar 2016	Wind Dir	W
D9	22 Mar 2016	Animal Life	None
D9	22 Mar 2016	Floatables	None
D9	22 Mar 2016	Water Color	Green
D9	22 Mar 2016	Current Direction	W
D9	22 Mar 2016	Wave Height Low (ft)	4
D9	22 Mar 2016	High Tide (ft)	5
D9	22 Mar 2016	High Tide Time	916
D9	22 Mar 2016	Low Tide (ft)	-0.1
D9	22 Mar 2016	Low Tide Time	1539
D9	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid
D9	28 Mar 2016	Arrive Time	1032
D9	28 Mar 2016	Weather	Partly Cloudy
D9	28 Mar 2016	Wind Speed (kts)	11.2
D9	28 Mar 2016	Wind Dir	S
D9	28 Mar 2016	Animal Life	None
D9	28 Mar 2016	Floatables	None
D9	28 Mar 2016	Water Color	Green
D9	28 Mar 2016	Current Direction	S
D9	28 Mar 2016	Wave Height Low (ft)	2
D9	28 Mar 2016	High Tide (ft)	3
D9	28 Mar 2016	High Tide Time	1301
D9	28 Mar 2016	Low Tide (ft)	0.7
D9	28 Mar 2016	Low Tide Time	658
D9	28 Mar 2016	Comments	Seagrass; Algae; Water clear
D10	04 Mar 2016	Arrive Time	1000
D10	04 Mar 2016	Weather	Sunny
D10	04 Mar 2016	Wind Speed (kts)	4
D10	04 Mar 2016	Wind Dir	W
D10	04 Mar 2016	Animal Life	None
D10	04 Mar 2016	Floatables	None

Station	Date	Parameter	Value
D10	04 Mar 2016	Water Color	Green
D10	04 Mar 2016	Current Direction	W
D10	04 Mar 2016	Wave Height Low (ft)	4
D10	04 Mar 2016	High Tide (ft)	4.7
D10	04 Mar 2016	High Tide Time	512
D10	04 Mar 2016	Low Tide (ft)	-0.1
D10	04 Mar 2016	Low Tide Time	1228
D10	04 Mar 2016	Comments	Kelp; Seagrass; 5 Persons; 1 Surfer; Water clear
D10	10 Mar 2016	Arrive Time	1056
D10	10 Mar 2016	Weather	Sunny
D10	10 Mar 2016	Wind Speed (kts)	5.2
D10	10 Mar 2016	Wind Dir	NW
D10	10 Mar 2016	Animal Life	None
D10	10 Mar 2016	Floatables	None
D10	10 Mar 2016	Water Color	Green
D10	10 Mar 2016	Current Direction	NW
D10	10 Mar 2016	Wave Height Low (ft)	4
D10	10 Mar 2016	High Tide (ft)	5.4
D10	10 Mar 2016	High Tide Time	941
D10	10 Mar 2016	Low Tide (ft)	-0.5
D10	10 Mar 2016	Low Tide Time	1602
D10	10 Mar 2016	Comments	12 Persons
D10	16 Mar 2016	Arrive Time	1053
D10	16 Mar 2016	Weather	Sunny
D10	16 Mar 2016	Wind Speed (kts)	4.2
D10	16 Mar 2016	Wind Dir	N
D10	16 Mar 2016	Animal Life	None
D10	16 Mar 2016	Floatables	None
D10	16 Mar 2016	Water Color	Green
D10	16 Mar 2016	Current Direction	N
D10	16 Mar 2016	Wave Height Low (ft)	5
D10	16 Mar 2016	High Tide (ft)	4.5
D10	16 Mar 2016	High Tide Time	412
D10	16 Mar 2016	Low Tide (ft)	0.1
D10	16 Mar 2016	Low Tide Time	1152
D10	16 Mar 2016	Comments	9 Persons; 3 Surfers
D10	22 Mar 2016	Arrive Time	1013
D10	22 Mar 2016	Weather	Partly Cloudy
D10	22 Mar 2016	Wind Speed (kts)	10
D10	22 Mar 2016	Wind Dir	W
D10	22 Mar 2016	Animal Life	None
D10	22 Mar 2016	Floatables	None
D10	22 Mar 2016	Water Color	Green
D10	22 Mar 2016	Current Direction	W
D10	22 Mar 2016	Wave Height Low (ft)	4
D10	22 Mar 2016	High Tide (ft)	5
D10	22 Mar 2016	High Tide Time	916
D10	22 Mar 2016	Low Tide (ft)	-0.1
D10	22 Mar 2016	Low Tide Time	1539
D10	22 Mar 2016	Comments	Kelp; Seagrass; 7 Persons; Water turbid
D10	28 Mar 2016	Arrive Time	1043

Station	Date	Parameter	Value
D10	28 Mar 2016	Weather	Partly Cloudy
D10	28 Mar 2016	Wind Speed (kts)	8.1
D10	28 Mar 2016	Wind Dir	SW
D10	28 Mar 2016	Animal Life	None
D10	28 Mar 2016	Floatables	None
D10	28 Mar 2016	Water Color	Green
D10	28 Mar 2016	Current Direction	SW
D10	28 Mar 2016	Wave Height Low (ft)	4
D10	28 Mar 2016	High Tide (ft)	3
D10	28 Mar 2016	High Tide Time	1301
D10	28 Mar 2016	Low Tide (ft)	0.7
D10	28 Mar 2016	Low Tide Time	658
D10	28 Mar 2016	Comments	Seagrass; 2 Persons; Water clear
D11	04 Mar 2016	Arrive Time	1008
D11	04 Mar 2016	Weather	Sunny
D11	04 Mar 2016	Wind Speed (kts)	4.4
D11	04 Mar 2016	Wind Dir	W
D11	04 Mar 2016	Animal Life	None
D11	04 Mar 2016	Floatables	None
D11	04 Mar 2016	Water Color	Green
D11	04 Mar 2016	Current Direction	W
D11	04 Mar 2016	Wave Height Low (ft)	4
D11	04 Mar 2016	High Tide (ft)	4.7
D11	04 Mar 2016	High Tide Time	512
D11	04 Mar 2016	Low Tide (ft)	-0.1
D11	04 Mar 2016	Low Tide Time	1228
D11	04 Mar 2016	Comments	Kelp; Seagrass; 7 Persons; Water clear
D11	10 Mar 2016	Arrive Time	1109
D11	10 Mar 2016	Weather	Sunny
D11	10 Mar 2016	Wind Speed (kts)	3.3
D11	10 Mar 2016	Wind Dir	NW
D11	10 Mar 2016	Animal Life	None
D11	10 Mar 2016	Floatables	None
D11	10 Mar 2016	Water Color	Green
D11	10 Mar 2016	Current Direction	NW
D11	10 Mar 2016	Wave Height Low (ft)	3
D11	10 Mar 2016	High Tide (ft)	5.4
D11	10 Mar 2016	High Tide Time	941
D11	10 Mar 2016	Low Tide (ft)	-0.5
D11	10 Mar 2016	Low Tide Time	1602
D11	10 Mar 2016	Comments	13 Persons; 2 Surfers; Water clear
D11	16 Mar 2016	Arrive Time	1104
D11	16 Mar 2016	Weather	Sunny
D11	16 Mar 2016	Wind Speed (kts)	1.9
D11	16 Mar 2016	Wind Dir	N
D11	16 Mar 2016	Animal Life	None
D11	16 Mar 2016	Floatables	None
D11	16 Mar 2016	Water Color	Green
D11	16 Mar 2016	Current Direction	N
D11	16 Mar 2016	Wave Height Low (ft)	4
D11	16 Mar 2016	High Tide (ft)	4.5
D11	16 Mar 2016	High Tide Time	412

Station	Date	Parameter	Value
D11	16 Mar 2016	Low Tide (ft)	0.1
D11	16 Mar 2016	Low Tide Time	1152
D11	16 Mar 2016	Comments	1 Person
D11	22 Mar 2016	Arrive Time	1002
D11	22 Mar 2016	Weather	Partly Cloudy
D11	22 Mar 2016	Wind Speed (kts)	10
D11	22 Mar 2016	Wind Dir	W
D11	22 Mar 2016	Animal Life	None
D11	22 Mar 2016	Floatables	None
D11	22 Mar 2016	Water Color	Green
D11	22 Mar 2016	Current Direction	W
D11	22 Mar 2016	Wave Height Low (ft)	4
D11	22 Mar 2016	High Tide (ft)	5
D11	22 Mar 2016	High Tide Time	916
D11	22 Mar 2016	Low Tide (ft)	-0.1
D11	22 Mar 2016	Low Tide Time	1539
D11	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid
D11	28 Mar 2016	Arrive Time	1056
D11	28 Mar 2016	Weather	Cloudy
D11	28 Mar 2016	Wind Speed (kts)	10.8
D11	28 Mar 2016	Wind Dir	SW
D11	28 Mar 2016	Animal Life	None
D11	28 Mar 2016	Floatables	None
D11	28 Mar 2016	Water Color	Green
D11	28 Mar 2016	Current Direction	SW
D11	28 Mar 2016	Wave Height Low (ft)	3
D11	28 Mar 2016	High Tide (ft)	3
D11	28 Mar 2016	High Tide Time	1301
D11	28 Mar 2016	Low Tide (ft)	0.7
D11	28 Mar 2016	Low Tide Time	658
D11	28 Mar 2016	Comments	Seagrass; 1 Surfer; Water clear
D12	04 Mar 2016	Arrive Time	1028
D12	04 Mar 2016	Weather	Sunny
D12	04 Mar 2016	Wind Speed (kts)	6.2
D12	04 Mar 2016	Wind Dir	W
D12	04 Mar 2016	Animal Life	None
D12	04 Mar 2016	Floatables	None
D12	04 Mar 2016	Water Color	Green
D12	04 Mar 2016	Current Direction	W
D12	04 Mar 2016	Wave Height Low (ft)	3
D12	04 Mar 2016	High Tide (ft)	4.7
D12	04 Mar 2016	High Tide Time	512
D12	04 Mar 2016	Low Tide (ft)	-0.1
D12	04 Mar 2016	Low Tide Time	1228
D12	04 Mar 2016	Comments	Kelp; Seagrass; 14 Persons; Water clear
D12	10 Mar 2016	Arrive Time	1127
D12	10 Mar 2016	Weather	Sunny
D12	10 Mar 2016	Wind Speed (kts)	5.5
D12	10 Mar 2016	Wind Dir	W
D12	10 Mar 2016	Animal Life	None
D12	10 Mar 2016	Floatables	None

Station	Date	Parameter	Value
D12	10 Mar 2016	Water Color	Green
D12	10 Mar 2016	Current Direction	W
D12	10 Mar 2016	Wave Height Low (ft)	3
D12	10 Mar 2016	High Tide (ft)	5.4
D12	10 Mar 2016	High Tide Time	941
D12	10 Mar 2016	Low Tide (ft)	-0.5
D12	10 Mar 2016	Low Tide Time	1602
D12	10 Mar 2016	Comments	Seagrass; 60 Persons; Water clear
D12	16 Mar 2016	Arrive Time	1125
D12	16 Mar 2016	Weather	Sunny
D12	16 Mar 2016	Wind Speed (kts)	6.4
D12	16 Mar 2016	Wind Dir	N
D12	16 Mar 2016	Animal Life	None
D12	16 Mar 2016	Floatables	None
D12	16 Mar 2016	Water Color	Green
D12	16 Mar 2016	Current Direction	N
D12	16 Mar 2016	Wave Height Low (ft)	4
D12	16 Mar 2016	High Tide (ft)	4.5
D12	16 Mar 2016	High Tide Time	412
D12	16 Mar 2016	Low Tide (ft)	0.1
D12	16 Mar 2016	Low Tide Time	1152
D12	16 Mar 2016	Comments	70 Persons
D12	22 Mar 2016	Arrive Time	945
D12	22 Mar 2016	Weather	Partly Cloudy
D12	22 Mar 2016	Wind Speed (kts)	10
D12	22 Mar 2016	Wind Dir	W
D12	22 Mar 2016	Animal Life	None
D12	22 Mar 2016	Floatables	None
D12	22 Mar 2016	Water Color	Green
D12	22 Mar 2016	Current Direction	W
D12	22 Mar 2016	Wave Height Low (ft)	4
D12	22 Mar 2016	High Tide (ft)	5
D12	22 Mar 2016	High Tide Time	916
D12	22 Mar 2016	Low Tide (ft)	-0.1
D12	22 Mar 2016	Low Tide Time	1539
D12	22 Mar 2016	Comments	Kelp; Seagrass; Water turbid
D12	28 Mar 2016	Arrive Time	1121
D12	28 Mar 2016	Weather	Cloudy
D12	28 Mar 2016	Wind Speed (kts)	10.8
D12	28 Mar 2016	Wind Dir	SW
D12	28 Mar 2016	Animal Life	None
D12	28 Mar 2016	Floatables	None
D12	28 Mar 2016	Water Color	Green
D12	28 Mar 2016	Current Direction	SW
D12	28 Mar 2016	Wave Height Low (ft)	2
D12	28 Mar 2016	High Tide (ft)	3
D12	28 Mar 2016	High Tide Time	1301
D12	28 Mar 2016	Low Tide (ft)	0.7
D12	28 Mar 2016	Low Tide Time	658
D12	28 Mar 2016	Comments	Kelp; Seagrass; 5 Persons; Water clear

# 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 2016	19	13	11	3	3	2	11	10
02 Mar 2016	19	13	11	3	3	2	11	10
03 Mar 2016	19	13	11	3	3	2	11	10
04 Mar 2016	19	13	11	3	3	2	11	10
05 Mar 2016	21	16	12	4*	4*	2*	8	7
06 Mar 2016	21	16	12	4*	4*	2*	8	7
07 Mar 2016	21	16	12	4*	4*	2*	8	7
08 Mar 2016	21	16	12	4*	4*	2*	8	7
09 Mar 2016	21	16	12	4*	4*	2*	8	7
10 Mar 2016	51	42	21	5	4	3	9	8
11 Mar 2016	51	42	21	5	4	3	9	8
12 Mar 2016	62	46	21	5	4	3	9	8
13 Mar 2016	111	54	34	6*	5*	3*	7	6
14 Mar 2016	103	55	43	5	4	3	7	7
15 Mar 2016	103	55	43	5	4	3	7	7
16 Mar 2016	103	55	43	5	4	3	7	7
17 Mar 2016	103	55	43	5	4	3	7	7
18 Mar 2016	103	55	43	5	4	3	7	7
19 Mar 2016	103	55	43	5	4	3	7	7
20 Mar 2016	63	39	34	4	4	3	7	8
21 Mar 2016	56	59	54	4	4	3	8	9
22 Mar 2016	56	59	54	4	4	3	8	9
23 Mar 2016	56	59	54	4	4	3	8	9
24 Mar 2016	54	65	40	5*	5*	3*	7	9
25 Mar 2016	54	65	40	5*	5*	3*	7	9
26 Mar 2016	54	65	40	5*	5*	3*	7	9
27 Mar 2016	54	65	40	5*	5*	3*	7	9
28 Mar 2016	54	65	40	5*	5*	3*	7	9
29 Mar 2016	54	65	40	5*	5*	3*	7	9
30 Mar 2016	62	42	30	5*	3*	3*	5	7
31 Mar 2016	62	42	30	5*	3*	3*	5	7

\* 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 2016	4	3	4	2	2	2	2	2
02 Mar 2016	4	3	4	2	2	2	2	2
03 Mar 2016	4	3	4	2	2	2	2	2
04 Mar 2016	4	3	4	2	2	2	2	2
05 Mar 2016	5	3	4	2*	2*	2*	2	2
06 Mar 2016	5	3	4	2*	2*	2*	2	2
07 Mar 2016	5	3	4	2*	2*	2*	2	2
08 Mar 2016	5	3	4	2*	2*	2*	2	2
09 Mar 2016	5	3	4	2*	2*	2*	2	2
10 Mar 2016	7	4	5	2	2	2	2	2
11 Mar 2016	7	4	5	2	2	2	2	2
12 Mar 2016	7	4	5	2	2	2	2	2
13 Mar 2016	9	5	6	2*	2*	2*	2	2
14 Mar 2016	8	5	6	2	2	2	2	2
15 Mar 2016	8	5	6	2	2	2	2	2
16 Mar 2016	8	5	6	2	2	2	2	2
17 Mar 2016	8	5	6	2	2	2	2	2
18 Mar 2016	8	5	6	2	2	2	2	2
19 Mar 2016	8	5	6	2	2	2	2	2
20 Mar 2016	7	5	5	2	2	2	2	2
21 Mar 2016	6	5	6	2	2	2	2	2
22 Mar 2016	6	5	6	2	2	2	2	2
23 Mar 2016	6	5	6	2	2	2	2	2
24 Mar 2016	6	5	4	2*	2*	2*	2	2
25 Mar 2016	6	5	4	2*	2*	2*	2	2
26 Mar 2016	6	5	4	2*	2*	2*	2	2
27 Mar 2016	6	5	4	2*	2*	2*	2	2
28 Mar 2016	6	5	4	2*	2*	2*	2	2
29 Mar 2016	6	5	4	2*	2*	2*	2	2
30 Mar 2016	6	5	4	2*	2*	2*	2	2
31 Mar 2016	6	5	4	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 2016	8	3	3	2	2	2	2	2
02 Mar 2016	8	3	3	2	2	2	2	2
03 Mar 2016	8	3	3	2	2	2	2	2
04 Mar 2016	8	3	3	2	2	2	2	2
05 Mar 2016	7	3	3	2*	2*	2*	2	2
06 Mar 2016	7	3	3	2*	2*	2*	2	2
07 Mar 2016	7	3	3	2*	2*	2*	2	2
08 Mar 2016	7	3	3	2*	2*	2*	2	2
09 Mar 2016	7	3	3	2*	2*	2*	2	2
10 Mar 2016	13	7	7	2	2	2	2	2
11 Mar 2016	13	7	7	2	2	2	2	2
12 Mar 2016	16	8	10	2	2	2	2	2
13 Mar 2016	22	10	13	2*	2*	2*	2	2
14 Mar 2016	24	13	17	2	2	2	2	2
15 Mar 2016	24	13	17	2	2	2	2	2
16 Mar 2016	24	12	13	2	2	2	2	2
17 Mar 2016	24	12	13	2	2	2	2	2
18 Mar 2016	24	12	13	2	2	2	2	2
19 Mar 2016	24	12	13	2	2	2	2	2
20 Mar 2016	19	10	10	2	2	2	2	2
21 Mar 2016	11	10	11	2	2	2	2	3
22 Mar 2016	11	10	11	2	2	2	2	3
23 Mar 2016	14	10	11	2	2	2	2	3
24 Mar 2016	17	12	12	2*	2*	2*	2	3
25 Mar 2016	17	12	12	2*	2*	2*	2	3
26 Mar 2016	17	12	12	2*	2*	2*	2	3
27 Mar 2016	17	12	12	2*	2*	2*	2	3
28 Mar 2016	17	12	12	2*	2*	2*	2	3
29 Mar 2016	17	12	12	2*	2*	2*	2	3
30 Mar 2016	17	12	12	2*	2*	2*	2	3
31 Mar 2016	17	12	12	2*	2*	2*	2	3

\* 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 2016	IC	IC	IC	ns	ns	ns	IC	IC
10 Mar 2016	E	E	IC	IC	IC	IC	IC	IC
12 Mar 2016	IC	IC	ns	ns	ns	ns	ns	ns
14 Mar 2016	IC							
20 Mar 2016	IC							
30 Mar 2016	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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 2016	IC	IC	IC	ns	ns	ns	IC	IC
10 Mar 2016	IC							
14 Mar 2016	IC							
20 Mar 2016	IC							
30 Mar 2016	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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 2016	IC	IC	IC	ns	ns	ns	IC	IC
10 Mar 2016	E	E	E	IC	IC	IC	IC	IC
12 Mar 2016	E	IC	E	ns	ns	ns	ns	ns
14 Mar 2016	IC	E	E	IC	IC	IC	IC	IC
16 Mar 2016	ns	IC	IC	ns	ns	ns	ns	ns
20 Mar 2016	IC							
30 Mar 2016	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**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 2016	IC	IC	IC	ns	ns	ns	IC	IC
10 Mar 2016	IC							
14 Mar 2016	IC							
20 Mar 2016	IC							
30 Mar 2016	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 3.8**

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal) and *Enterococcus* (Enter) bacteria are reported as CFU/100 mL; the fecal:total coliform ratio (F:T) is unitless; ammonium (N-NH<sub>3</sub>) values are reported as mg/L; values for temperature (Temp, °C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH <sub>3</sub>	Temp	XMS	DO	Sal	pH
A1	05 Mar 2016	839	1	2e	<2	<2	1.000	ns	16.6	83.45	7.8	33.56	8.2
A1	05 Mar 2016	839	12	2e	<2	<2	1.000	ns	16.4	83.57	7.6	33.54	8.2
A1	05 Mar 2016	839	18	160e	22e	8e	0.138	ns	14.8	75.21	6.7	33.49	8.1
A1	10 Mar 2016	817	1	2e	<2	<2	1.000	ns	16.2	80.39	7.6	33.53	8.2
A1	10 Mar 2016	817	12	720	32e	340e	0.044	ns	13.1	83.16	5.7	33.41	8.1
A1	10 Mar 2016	817	18	13000	76	960	0.006	ns	12.9	82.44	5.4	33.42	8.1
A1	12 Mar 2016	1147	12	ns	ns	10e	ns	ns	ns	ns	ns	ns	ns
A1	12 Mar 2016	1147	18	220e	ns	120e	ns	ns	ns	ns	ns	ns	ns
A1	14 Mar 2016	842	1	2e	14e	<2	7.000	ns	15.9	75.28	7.4	33.50	8.1
A1	14 Mar 2016	842	12	140e	<2	60	0.014	ns	12.9	77.50	5.4	33.44	8.0
A1	14 Mar 2016	842	18	60e	6e	98	0.100	ns	12.7	74.69	5.3	33.44	7.9
A1	20 Mar 2016	815	1	<2	<2	<2	1.000	ns	15.6	74.58	8.3	33.47	8.1
A1	20 Mar 2016	815	12	<2	<2	<2	1.000	ns	13.6	80.86	6.2	33.45	8.0
A1	20 Mar 2016	815	18	<2	<2	<2	1.000	ns	12.9	77.67	5.6	33.45	7.9
A1	30 Mar 2016	814	1	2e	<2	<2	1.000	ns	15.4	75.94	7.9	33.52	8.2
A1	30 Mar 2016	814	12	2e	<2	<2	1.000	ns	13.6	81.77	6.6	33.49	8.1
A1	30 Mar 2016	814	18	20e	<2	<2	0.100	ns	13.2	83.53	5.9	33.49	8.0
C4	10 Mar 2016	1010	1	4e	<2	<2	0.500	ns	15.9	77.99	7.5	33.52	8.2
C4	10 Mar 2016	1010	3	4e	<2	<2	0.500	ns	15.3	80.89	6.9	33.52	8.1
C4	10 Mar 2016	1010	9	50	<2	2e	0.040	ns	14.5	82.46	6.4	33.48	8.1
C4	14 Mar 2016	1110	1	<2	<2	<2	1.000	ns	16.1	69.83	7.7	33.51	8.1
C4	14 Mar 2016	1110	3	<2	<2	<2	1.000	ns	16.0	69.48	7.7	33.51	8.1
C4	14 Mar 2016	1110	9	6e	<2	<2	0.333	ns	15.5	72.39	7.0	33.49	8.1
C4	20 Mar 2016	1001	1	2e	<2	<2	1.000	ns	15.7	78.66	8.2	33.47	8.1
C4	20 Mar 2016	1001	3	<2	<2	<2	1.000	ns	15.3	77.88	7.7	33.47	8.1
C4	20 Mar 2016	1001	9	<2	<2	<2	1.000	ns	14.5	78.14	7.0	33.45	8.1
C4	30 Mar 2016	958	1	<2	<2	<2	1.000	ns	15.7	75.10	8.2	33.53	8.2
C4	30 Mar 2016	958	3	6e	<2	<2	0.333	ns	15.6	74.64	8.1	33.53	8.2
C4	30 Mar 2016	958	9	<2	<2	<2	1.000	ns	14.3	80.36	6.8	33.50	8.1
C5	10 Mar 2016	956	1	<2	<2	<2	1.000	ns	16.1	74.63	7.5	33.51	8.2
C5	10 Mar 2016	956	3	<2	<2	<2	1.000	ns	15.9	74.85	7.5	33.52	8.2
C5	10 Mar 2016	956	9	22e	<2	<2	0.091	ns	15.1	82.90	6.8	33.50	8.1
C5	14 Mar 2016	1056	1	2e	<2	<2	1.000	ns	15.9	69.12	7.5	33.49	8.1
C5	14 Mar 2016	1056	3	2e	<2	<2	1.000	ns	15.8	70.76	7.4	33.49	8.1
C5	14 Mar 2016	1056	9	<2	<2	<2	1.000	ns	15.8	62.22	7.3	33.49	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C5	20 Mar 2016	949	1	<2	<2	<2	1.000	ns	16.0	73.79	8.0	33.48	8.2
C5	20 Mar 2016	949	3	4e	<2	<2	0.500	ns	15.0	74.70	7.7	33.47	8.1
C5	20 Mar 2016	949	9	<2	<2	<2	1.000	ns	14.1	78.06	6.8	33.45	8.0
C5	30 Mar 2016	947	1	<2	<2	<2	1.000	ns	15.6	75.87	8.0	33.52	8.2
C5	30 Mar 2016	947	3	<2	<2	<2	1.000	ns	15.6	75.79	7.9	33.53	8.2
C5	30 Mar 2016	947	9	<2	<2	<2	1.000	ns	14.2	79.93	6.5	33.52	8.1
A6	05 Mar 2016	903	1	<20	2e	<2	0.100	ns	16.6	74.82	7.8	33.55	8.1
A6	05 Mar 2016	903	12	10e	<2	<2	0.200	ns	15.7	74.14	7.2	33.53	8.1
A6	05 Mar 2016	903	18	18e	4e	4e	0.222	ns	15.1	66.40	6.8	33.51	8.1
A6	10 Mar 2016	848	1	<2	<2	<2	1.000	ns	16.3	67.53	7.6	33.47	8.2
A6	10 Mar 2016	848	12	2200e	10e	82	0.005	ns	13.6	76.18	5.9	33.44	8.0
A6	10 Mar 2016	848	18	14000	82	700	0.006	ns	13.0	71.46	5.5	33.42	8.0
A6	12 Mar 2016	1117	18	74	ns	32e	ns	ns	ns	ns	ns	ns	ns
A6	14 Mar 2016	926	1	<2	<2	<2	1.000	ns	16.1	72.44	7.5	33.48	8.1
A6	14 Mar 2016	926	12	76	6e	46	0.079	ns	12.6	67.17	5.1	33.44	7.9
A6	14 Mar 2016	926	18	120e	10e	160e	0.083	ns	12.1	58.36	4.8	33.44	7.9
A6	16 Mar 2016	833	18	ns	ns	6e	ns	ns	ns	ns	ns	ns	ns
A6	20 Mar 2016	842	1	<2	<2	<2	1.000	ns	16.0	77.02	8.3	33.48	8.2
A6	20 Mar 2016	842	12	2e	<2	<2	1.000	ns	14.1	80.26	6.6	33.46	8.0
A6	20 Mar 2016	842	18	6e	<2	<2	0.333	ns	12.8	83.16	5.7	33.45	7.9
A6	30 Mar 2016	840	1	<2	<2	<2	1.000	ns	15.7	77.92	8.0	33.53	8.2
A6	30 Mar 2016	840	12	4e	<2	<2	0.500	ns	13.4	82.32	5.8	33.51	8.0
A6	30 Mar 2016	840	18	6e	<2	<2	0.333	ns	13.0	82.49	5.6	33.51	8.0
C6	10 Mar 2016	943	1	<2	<2	<2	1.000	ns	16.2	66.64	7.7	33.47	8.2
C6	10 Mar 2016	943	3	2e	<2	<2	1.000	ns	16.2	70.09	7.7	33.47	8.2
C6	10 Mar 2016	943	9	12e	<2	<2	0.167	ns	15.3	75.12	6.9	33.49	8.1
C6	14 Mar 2016	1042	1	2e	<2	<2	1.000	ns	16.0	66.28	7.5	33.48	8.1
C6	14 Mar 2016	1042	3	<2	<2	<2	1.000	ns	16.0	66.10	7.5	33.48	8.1
C6	14 Mar 2016	1042	9	<2	<2	2e	1.000	ns	14.8	69.87	6.4	33.48	8.1
C6	20 Mar 2016	937	1	<2	<2	<2	1.000	ns	16.1	76.11	8.0	33.49	8.2
C6	20 Mar 2016	937	3	<2	<2	<2	1.000	ns	15.9	76.10	7.9	33.49	8.2
C6	20 Mar 2016	937	9	<2	<2	<2	1.000	ns	13.9	79.37	6.7	33.46	8.0
C6	30 Mar 2016	935	1	2e	<2	<2	1.000	ns	15.6	74.75	7.8	33.54	8.2
C6	30 Mar 2016	935	3	2e	<2	<2	1.000	ns	15.6	74.52	7.7	33.54	8.2
C6	30 Mar 2016	935	9	<2	<2	<2	1.000	ns	15.1	78.64	7.0	33.50	8.1
A7	05 Mar 2016	851	1	2e	<2	2e	1.000	ns	16.6	78.53	7.7	33.55	8.2
A7	05 Mar 2016	851	12	6e	<2	<2	0.333	ns	16.4	78.99	7.6	33.55	8.2
A7	05 Mar 2016	851	18	76	<2	<2	0.026	ns	15.1	76.95	6.8	33.50	8.1
A7	10 Mar 2016	833	1	<2	<2	<2	1.000	ns	16.1	77.29	7.6	33.51	8.2
A7	10 Mar 2016	833	12	260e	10e	120e	0.038	ns	13.7	78.41	6.0	33.44	8.1

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH3	Temp	XMS	DO	Sal	pH
A7	10 Mar 2016	833	18	1000	46	720	0.046	ns	13.2	78.80	5.8	33.43	8.0
A7	12 Mar 2016	1133	12	ns	ns	<2	ns	ns	ns	ns	ns	ns	ns
A7	12 Mar 2016	1133	18	ns	ns	180e	ns	ns	ns	ns	ns	ns	ns
A7	14 Mar 2016	902	1	6e	<2	<2	0.333	ns	16.0	75.16	7.5	33.49	8.1
A7	14 Mar 2016	902	12	280e	2e	130e	0.007	ns	12.5	76.07	5.1	33.42	7.9
A7	14 Mar 2016	902	18	160e	10e	110	0.062	ns	12.4	71.56	5.0	33.43	7.9
A7	16 Mar 2016	847	12	ns	ns	<2	ns	ns	ns	ns	ns	ns	ns
A7	16 Mar 2016	847	18	ns	ns	2e	ns	ns	ns	ns	ns	ns	ns
A7	20 Mar 2016	829	1	<2	<2	<2	1.000	ns	15.8	77.87	8.3	33.48	8.1
A7	20 Mar 2016	829	12	10e	<2	<2	0.200	ns	13.5	80.44	6.1	33.45	8.0
A7	20 Mar 2016	829	18	10e	2e	<2	0.200	ns	12.8	76.87	5.5	33.46	7.9
A7	30 Mar 2016	827	1	<2	<2	<2	1.000	ns	15.6	76.10	7.9	33.53	8.2
A7	30 Mar 2016	827	12	<2	<2	2e	1.000	ns	13.3	82.76	5.8	33.50	8.0
A7	30 Mar 2016	827	18	<2	2e	<2	1.000	ns	13.1	84.00	5.5	33.49	8.0
C7	05 Mar 2016	919	1	<2	<2	<2	1.000	ns	17.1	85.23	8.1	33.57	8.2
C7	05 Mar 2016	919	12	2e	2e	<2	1.000	ns	16.0	78.36	7.4	33.53	8.2
C7	05 Mar 2016	919	18	8e	<2	<2	0.250	ns	15.3	60.40	6.9	33.51	8.1
C7	10 Mar 2016	906	1	<2	<2	<2	1.000	ns	16.3	70.50	7.6	33.48	8.2
C7	10 Mar 2016	906	12	8e	<2	<2	0.250	ns	15.0	76.88	6.6	33.49	8.1
C7	10 Mar 2016	906	18	32e	4e	2e	0.125	ns	14.7	76.45	6.3	33.48	8.1
C7	14 Mar 2016	949	1	<2	<2	<2	1.000	ns	16.3	70.62	7.7	33.48	8.1
C7	14 Mar 2016	949	12	2e	<2	<2	1.000	ns	14.6	73.04	6.3	33.48	8.1
C7	14 Mar 2016	949	18	26e	<2	8e	0.077	ns	14.0	63.34	5.8	33.46	8.0
C7	20 Mar 2016	859	1	2e	<2	<2	1.000	ns	16.2	75.19	7.9	33.48	8.1
C7	20 Mar 2016	859	12	2e	<2	2e	1.000	ns	13.3	82.44	5.8	33.47	8.0
C7	20 Mar 2016	859	18	8e	<2	<2	0.250	ns	12.7	77.56	5.4	33.47	7.9
C7	30 Mar 2016	856	1	<2	<2	<2	1.000	ns	15.8	76.95	8.0	33.54	8.2
C7	30 Mar 2016	856	12	<2	<2	<2	1.000	ns	15.1	82.10	7.2	33.53	8.2
C7	30 Mar 2016	856	18	<2	<2	<2	1.000	ns	13.6	82.54	5.8	33.52	8.0
C8	05 Mar 2016	930	1	4e	<2	<2	0.500	ns	17.0	84.46	8.1	33.57	8.2
C8	05 Mar 2016	930	12	<2	<2	<2	1.000	ns	15.7	77.39	7.4	33.52	8.2
C8	05 Mar 2016	930	18	10e	<2	2e	0.200	ns	15.2	67.73	6.9	33.51	8.1
C8	10 Mar 2016	920	1	<2	<2	<2	1.000	ns	16.2	70.22	7.6	33.39	8.2
C8	10 Mar 2016	920	12	14e	<2	2e	0.143	ns	15.4	69.42	6.9	33.49	8.1
C8	10 Mar 2016	920	18	18e	<2	8e	0.111	ns	14.7	65.51	6.4	33.48	8.1
C8	14 Mar 2016	1017	1	4e	<2	<2	0.500	ns	16.6	65.28	7.8	33.38	8.1
C8	14 Mar 2016	1017	12	<2	<2	<2	1.000	ns	15.5	71.39	7.0	33.49	8.1
C8	14 Mar 2016	1017	18	28e	<2	4e	0.071	ns	14.1	48.19	6.0	33.46	8.0
C8	20 Mar 2016	915	1	<2	<2	2e	1.000	ns	15.2	77.24	7.5	33.47	8.1
C8	20 Mar 2016	915	12	4e	<2	<2	0.500	ns	13.6	82.81	6.2	33.47	8.0
C8	20 Mar 2016	915	18	36e	<2	6e	0.056	ns	12.3	78.85	5.2	33.49	7.9

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C8	30 Mar 2016	909	1	<2	<2	<2	1.000	ns	15.9	75.33	8.1	33.54	8.2
C8	30 Mar 2016	909	12	<2	<2	<2	1.000	ns	14.9	82.33	7.3	33.52	8.1
C8	30 Mar 2016	909	18	<2	<2	<2	1.000	ns	13.8	80.55	6.3	33.52	8.1

ns = not sampled

ND = no data

### Comments

Station	Date	Depth	Parameter	Comments
A1	12 Mar 2016	12		Resample
A1	12 Mar 2016	18		Resample
A6	12 Mar 2016	18		Resample
A7	12 Mar 2016	12		Resample
A7	12 Mar 2016	18		Resample
A1	14 Mar 2016	18		Both regular sample and resample ( for 12-mar-16)
A7	14 Mar 2016	18		Both regular sample and resample ( for 12-mar-16)
A6	16 Mar 2016	18		Resample
A7	16 Mar 2016	12		Resample
A7	16 Mar 2016	18		Resample

**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 2016	Depth (m)	18
A1	05 Mar 2016	Arrive Time	839
A1	05 Mar 2016	Depart Time	843
A1	05 Mar 2016	Air Temp (C)	16
A1	05 Mar 2016	Weather	Cloudy
A1	05 Mar 2016	Visibility (mi)	4
A1	05 Mar 2016	Wind Speed (kts)	2
A1	05 Mar 2016	Wind Dir	E
A1	05 Mar 2016	Water Color	Greenish-Blue
A1	05 Mar 2016	Wave Ht Low (ft)	8
A1	05 Mar 2016	Wave Period (sec)	13
A1	05 Mar 2016	Sea State	Confused swell
A1	05 Mar 2016	High Tide (ft)	5.16
A1	05 Mar 2016	High Tide Time	601
A1	05 Mar 2016	Low Tide (ft)	-0.56
A1	05 Mar 2016	Low Tide Time	1304
A1	05 Mar 2016	Comments	Kelp
A1	10 Mar 2016	Depth (m)	19
A1	10 Mar 2016	Arrive Time	817
A1	10 Mar 2016	Depart Time	823
A1	10 Mar 2016	Air Temp (C)	15
A1	10 Mar 2016	Weather	Haze
A1	10 Mar 2016	Visibility (mi)	8
A1	10 Mar 2016	Wind Speed (kts)	4
A1	10 Mar 2016	Wind Dir	W
A1	10 Mar 2016	Water Color	Green
A1	10 Mar 2016	Wave Ht Low (ft)	5
A1	10 Mar 2016	Wave Period (sec)	13
A1	10 Mar 2016	Sea State	Wind ripples
A1	10 Mar 2016	High Tide (ft)	5.41
A1	10 Mar 2016	High Tide Time	941
A1	10 Mar 2016	Low Tide (ft)	-0.46
A1	10 Mar 2016	Low Tide Time	1602
A1	10 Mar 2016	Comments	Kelp
A1	12 Mar 2016	Depth (m)	18
A1	12 Mar 2016	Arrive Time	1147
A1	12 Mar 2016	Depart Time	1153
A1	12 Mar 2016	Air Temp (C)	15
A1	12 Mar 2016	Weather	Partly Cloudy
A1	12 Mar 2016	Visibility (mi)	5
A1	12 Mar 2016	Wind Speed (kts)	10
A1	12 Mar 2016	Wind Dir	W
A1	12 Mar 2016	Water Color	Green
A1	12 Mar 2016	Wave Ht Low (ft)	8
A1	12 Mar 2016	Wave Period (sec)	9
A1	12 Mar 2016	Sea State	Heavy chop
A1	12 Mar 2016	High Tide (ft)	4.16
A1	12 Mar 2016	High Tide Time	1126
A1	12 Mar 2016	Low Tide (ft)	-0.09

Station	Date	Parameter	Value
A1	12 Mar 2016	Low Tide Time	525
A1	12 Mar 2016	Comments	Resamples A1 12&18m
A1	14 Mar 2016	Depth (m)	18
A1	14 Mar 2016	Arrive Time	842
A1	14 Mar 2016	Depart Time	849
A1	14 Mar 2016	Air Temp (C)	16
A1	14 Mar 2016	Weather	Overcast
A1	14 Mar 2016	Visibility (mi)	5
A1	14 Mar 2016	Wind Speed (kts)	7
A1	14 Mar 2016	Wind Dir	SE
A1	14 Mar 2016	Water Color	Brownish-Green
A1	14 Mar 2016	Wave Ht Low (ft)	7
A1	14 Mar 2016	Wave Period (sec)	13
A1	14 Mar 2016	Sea State	Heavy chop
A1	14 Mar 2016	High Tide (ft)	3.04
A1	14 Mar 2016	High Tide Time	1510
A1	14 Mar 2016	Low Tide (ft)	0.35
A1	14 Mar 2016	Low Tide Time	850
A1	14 Mar 2016	Comments	
A1	20 Mar 2016	Depth (m)	18
A1	20 Mar 2016	Arrive Time	815
A1	20 Mar 2016	Depart Time	818
A1	20 Mar 2016	Air Temp (C)	14
A1	20 Mar 2016	Weather	Overcast
A1	20 Mar 2016	Visibility (mi)	3
A1	20 Mar 2016	Wind Speed (kts)	0
A1	20 Mar 2016	Wind Dir	
A1	20 Mar 2016	Water Color	Green
A1	20 Mar 2016	Wave Ht Low (ft)	3
A1	20 Mar 2016	Wave Period (sec)	9
A1	20 Mar 2016	Sea State	Calm
A1	20 Mar 2016	High Tide (ft)	5.06
A1	20 Mar 2016	High Tide Time	807
A1	20 Mar 2016	Low Tide (ft)	-0.35
A1	20 Mar 2016	Low Tide Time	1447
A1	20 Mar 2016	Comments	Kelp; Boats
A1	30 Mar 2016	Depth (m)	20
A1	30 Mar 2016	Arrive Time	814
A1	30 Mar 2016	Depart Time	816
A1	30 Mar 2016	Air Temp (C)	12
A1	30 Mar 2016	Weather	Partly Cloudy
A1	30 Mar 2016	Visibility (mi)	5
A1	30 Mar 2016	Wind Speed (kts)	9
A1	30 Mar 2016	Wind Dir	SE
A1	30 Mar 2016	Water Color	Green
A1	30 Mar 2016	Wave Ht Low (ft)	3
A1	30 Mar 2016	Wave Period (sec)	9
A1	30 Mar 2016	Sea State	Calm
A1	30 Mar 2016	High Tide (ft)	2.68
A1	30 Mar 2016	High Tide Time	1621
A1	30 Mar 2016	Low Tide (ft)	0.91
A1	30 Mar 2016	Low Tide Time	925

Station	Date	Parameter	Value
A1	30 Mar 2016	Comments	Kelp; Kelp debris
C4	10 Mar 2016	Depth (m)	11
C4	10 Mar 2016	Arrive Time	1010
C4	10 Mar 2016	Depart Time	1013
C4	10 Mar 2016	Air Temp (C)	16
C4	10 Mar 2016	Weather	Clear
C4	10 Mar 2016	Visibility (mi)	11
C4	10 Mar 2016	Wind Speed (kts)	5
C4	10 Mar 2016	Wind Dir	E
C4	10 Mar 2016	Water Color	Green
C4	10 Mar 2016	Wave Ht Low (ft)	5
C4	10 Mar 2016	Wave Period (sec)	13
C4	10 Mar 2016	Sea State	Wind ripples
C4	10 Mar 2016	High Tide (ft)	5.41
C4	10 Mar 2016	High Tide Time	941
C4	10 Mar 2016	Low Tide (ft)	-0.46
C4	10 Mar 2016	Low Tide Time	1602
C4	10 Mar 2016	Comments	
C4	14 Mar 2016	Depth (m)	10
C4	14 Mar 2016	Arrive Time	1110
C4	14 Mar 2016	Depart Time	1113
C4	14 Mar 2016	Air Temp (C)	16
C4	14 Mar 2016	Weather	Overcast
C4	14 Mar 2016	Visibility (mi)	5
C4	14 Mar 2016	Wind Speed (kts)	9
C4	14 Mar 2016	Wind Dir	NE
C4	14 Mar 2016	Water Color	Green
C4	14 Mar 2016	Wave Ht Low (ft)	5
C4	14 Mar 2016	Wave Period (sec)	13
C4	14 Mar 2016	Sea State	Heavy chop
C4	14 Mar 2016	High Tide (ft)	3.04
C4	14 Mar 2016	High Tide Time	1510
C4	14 Mar 2016	Low Tide (ft)	0.35
C4	14 Mar 2016	Low Tide Time	850
C4	14 Mar 2016	Comments	
C4	20 Mar 2016	Depth (m)	11
C4	20 Mar 2016	Arrive Time	1001
C4	20 Mar 2016	Depart Time	1004
C4	20 Mar 2016	Air Temp (C)	15
C4	20 Mar 2016	Weather	Overcast
C4	20 Mar 2016	Visibility (mi)	5
C4	20 Mar 2016	Wind Speed (kts)	1
C4	20 Mar 2016	Wind Dir	NW
C4	20 Mar 2016	Water Color	Green
C4	20 Mar 2016	Wave Ht Low (ft)	3
C4	20 Mar 2016	Wave Period (sec)	9
C4	20 Mar 2016	Sea State	Calm
C4	20 Mar 2016	High Tide (ft)	5.06
C4	20 Mar 2016	High Tide Time	807
C4	20 Mar 2016	Low Tide (ft)	-0.35
C4	20 Mar 2016	Low Tide Time	1447
C4	20 Mar 2016	Comments	Kelp; Boats

Station	Date	Parameter	Value
C4	30 Mar 2016	Depth (m)	10
C4	30 Mar 2016	Arrive Time	958
C4	30 Mar 2016	Depart Time	1001
C4	30 Mar 2016	Air Temp (C)	13
C4	30 Mar 2016	Weather	Overcast
C4	30 Mar 2016	Visibility (mi)	5
C4	30 Mar 2016	Wind Speed (kts)	7
C4	30 Mar 2016	Wind Dir	SW
C4	30 Mar 2016	Water Color	Green
C4	30 Mar 2016	Wave Ht Low (ft)	3
C4	30 Mar 2016	Wave Period (sec)	9
C4	30 Mar 2016	Sea State	Calm
C4	30 Mar 2016	High Tide (ft)	2.68
C4	30 Mar 2016	High Tide Time	1621
C4	30 Mar 2016	Low Tide (ft)	0.91
C4	30 Mar 2016	Low Tide Time	925
C4	30 Mar 2016	Comments	Kelp
C5	10 Mar 2016	Depth (m)	11
C5	10 Mar 2016	Arrive Time	956
C5	10 Mar 2016	Depart Time	959
C5	10 Mar 2016	Air Temp (C)	16
C5	10 Mar 2016	Weather	Clear
C5	10 Mar 2016	Visibility (mi)	10
C5	10 Mar 2016	Wind Speed (kts)	3
C5	10 Mar 2016	Wind Dir	NE
C5	10 Mar 2016	Water Color	Green
C5	10 Mar 2016	Wave Ht Low (ft)	5
C5	10 Mar 2016	Wave Period (sec)	13
C5	10 Mar 2016	Sea State	Wind ripples
C5	10 Mar 2016	High Tide (ft)	5.41
C5	10 Mar 2016	High Tide Time	941
C5	10 Mar 2016	Low Tide (ft)	-0.46
C5	10 Mar 2016	Low Tide Time	1602
C5	10 Mar 2016	Comments	
C5	14 Mar 2016	Depth (m)	11
C5	14 Mar 2016	Arrive Time	1056
C5	14 Mar 2016	Depart Time	1100
C5	14 Mar 2016	Air Temp (C)	16
C5	14 Mar 2016	Weather	Overcast
C5	14 Mar 2016	Visibility (mi)	5
C5	14 Mar 2016	Wind Speed (kts)	12
C5	14 Mar 2016	Wind Dir	S
C5	14 Mar 2016	Water Color	Green
C5	14 Mar 2016	Wave Ht Low (ft)	5
C5	14 Mar 2016	Wave Period (sec)	13
C5	14 Mar 2016	Sea State	Heavy chop
C5	14 Mar 2016	High Tide (ft)	3.04
C5	14 Mar 2016	High Tide Time	1510
C5	14 Mar 2016	Low Tide (ft)	0.35
C5	14 Mar 2016	Low Tide Time	850
C5	14 Mar 2016	Comments	

Station	Date	Parameter	Value
C5	20 Mar 2016	Depth (m)	10
C5	20 Mar 2016	Arrive Time	949
C5	20 Mar 2016	Depart Time	953
C5	20 Mar 2016	Air Temp (C)	15
C5	20 Mar 2016	Weather	Overcast
C5	20 Mar 2016	Visibility (mi)	5
C5	20 Mar 2016	Wind Speed (kts)	1
C5	20 Mar 2016	Wind Dir	NE
C5	20 Mar 2016	Water Color	Green
C5	20 Mar 2016	Wave Ht Low (ft)	3
C5	20 Mar 2016	Wave Period (sec)	9
C5	20 Mar 2016	Sea State	Calm
C5	20 Mar 2016	High Tide (ft)	5.06
C5	20 Mar 2016	High Tide Time	807
C5	20 Mar 2016	Low Tide (ft)	-0.35
C5	20 Mar 2016	Low Tide Time	1447
C5	20 Mar 2016	Comments	Kelp; Boats
C5	30 Mar 2016	Depth (m)	11
C5	30 Mar 2016	Arrive Time	947
C5	30 Mar 2016	Depart Time	950
C5	30 Mar 2016	Air Temp (C)	13
C5	30 Mar 2016	Weather	Overcast
C5	30 Mar 2016	Visibility (mi)	5
C5	30 Mar 2016	Wind Speed (kts)	6
C5	30 Mar 2016	Wind Dir	W
C5	30 Mar 2016	Water Color	Green
C5	30 Mar 2016	Wave Ht Low (ft)	3
C5	30 Mar 2016	Wave Period (sec)	9
C5	30 Mar 2016	Sea State	Calm
C5	30 Mar 2016	High Tide (ft)	2.68
C5	30 Mar 2016	High Tide Time	1621
C5	30 Mar 2016	Low Tide (ft)	0.91
C5	30 Mar 2016	Low Tide Time	925
C5	30 Mar 2016	Comments	Kelp; Kelp debris
A6	05 Mar 2016	Depth (m)	18
A6	05 Mar 2016	Arrive Time	903
A6	05 Mar 2016	Depart Time	907
A6	05 Mar 2016	Air Temp (C)	16
A6	05 Mar 2016	Weather	Cloudy
A6	05 Mar 2016	Visibility (mi)	6
A6	05 Mar 2016	Wind Speed (kts)	5
A6	05 Mar 2016	Wind Dir	NW
A6	05 Mar 2016	Water Color	Greenish-Blue
A6	05 Mar 2016	Wave Ht Low (ft)	8
A6	05 Mar 2016	Wave Period (sec)	13
A6	05 Mar 2016	Sea State	Confused swell
A6	05 Mar 2016	High Tide (ft)	5.16
A6	05 Mar 2016	High Tide Time	601
A6	05 Mar 2016	Low Tide (ft)	-0.56
A6	05 Mar 2016	Low Tide Time	1304
A6	05 Mar 2016	Comments	
A6	10 Mar 2016	Depth (m)	18

Station	Date	Parameter	Value
A6	10 Mar 2016	Arrive Time	848
A6	10 Mar 2016	Depart Time	854
A6	10 Mar 2016	Air Temp (C)	16
A6	10 Mar 2016	Weather	Haze
A6	10 Mar 2016	Visibility (mi)	8
A6	10 Mar 2016	Wind Speed (kts)	1
A6	10 Mar 2016	Wind Dir	E
A6	10 Mar 2016	Water Color	Green
A6	10 Mar 2016	Wave Ht Low (ft)	5
A6	10 Mar 2016	Wave Period (sec)	13
A6	10 Mar 2016	Sea State	Wind ripples
A6	10 Mar 2016	High Tide (ft)	5.41
A6	10 Mar 2016	High Tide Time	941
A6	10 Mar 2016	Low Tide (ft)	-0.46
A6	10 Mar 2016	Low Tide Time	1602
A6	10 Mar 2016	Comments	Kelp debris
A6	12 Mar 2016	Depth (m)	21
A6	12 Mar 2016	Arrive Time	1117
A6	12 Mar 2016	Depart Time	1126
A6	12 Mar 2016	Air Temp (C)	15
A6	12 Mar 2016	Weather	Continuous layer of clouds
A6	12 Mar 2016	Visibility (mi)	5
A6	12 Mar 2016	Wind Speed (kts)	9
A6	12 Mar 2016	Wind Dir	SW
A6	12 Mar 2016	Water Color	Green
A6	12 Mar 2016	Wave Ht Low (ft)	8
A6	12 Mar 2016	Wave Period (sec)	9
A6	12 Mar 2016	Sea State	Heavy chop
A6	12 Mar 2016	High Tide (ft)	4.16
A6	12 Mar 2016	High Tide Time	1126
A6	12 Mar 2016	Low Tide (ft)	-0.09
A6	12 Mar 2016	Low Tide Time	525
A6	12 Mar 2016	Comments	Resample A6 18m
A6	14 Mar 2016	Depth (m)	18
A6	14 Mar 2016	Arrive Time	926
A6	14 Mar 2016	Depart Time	934
A6	14 Mar 2016	Air Temp (C)	16
A6	14 Mar 2016	Weather	Overcast
A6	14 Mar 2016	Visibility (mi)	5
A6	14 Mar 2016	Wind Speed (kts)	2
A6	14 Mar 2016	Wind Dir	SE
A6	14 Mar 2016	Water Color	Brownish-Green
A6	14 Mar 2016	Wave Ht Low (ft)	5
A6	14 Mar 2016	Wave Period (sec)	13
A6	14 Mar 2016	Sea State	Heavy chop
A6	14 Mar 2016	High Tide (ft)	3.04
A6	14 Mar 2016	High Tide Time	1510
A6	14 Mar 2016	Low Tide (ft)	0.35
A6	14 Mar 2016	Low Tide Time	850
A6	14 Mar 2016	Comments	Kelp
A6	16 Mar 2016	Depth (m)	20
A6	16 Mar 2016	Arrive Time	833

Station	Date	Parameter	Value
A6	16 Mar 2016	Depart Time	838
A6	16 Mar 2016	Air Temp (C)	16
A6	16 Mar 2016	Weather	Clear
A6	16 Mar 2016	Visibility (mi)	12
A6	16 Mar 2016	Wind Speed (kts)	5
A6	16 Mar 2016	Wind Dir	SW
A6	16 Mar 2016	Water Color	Green
A6	16 Mar 2016	Wave Ht Low (ft)	4
A6	16 Mar 2016	Wave Period (sec)	11
A6	16 Mar 2016	Sea State	Calm
A6	16 Mar 2016	High Tide (ft)	4.54
A6	16 Mar 2016	High Tide Time	412
A6	16 Mar 2016	Low Tide (ft)	0.13
A6	16 Mar 2016	Low Tide Time	1152
A6	16 Mar 2016	Comments	Resample for 18m; Kelp
A6	20 Mar 2016	Depth (m)	18
A6	20 Mar 2016	Arrive Time	842
A6	20 Mar 2016	Depart Time	846
A6	20 Mar 2016	Air Temp (C)	15
A6	20 Mar 2016	Weather	Overcast
A6	20 Mar 2016	Visibility (mi)	3
A6	20 Mar 2016	Wind Speed (kts)	0
A6	20 Mar 2016	Wind Dir	
A6	20 Mar 2016	Water Color	Green
A6	20 Mar 2016	Wave Ht Low (ft)	3
A6	20 Mar 2016	Wave Period (sec)	9
A6	20 Mar 2016	Sea State	Calm
A6	20 Mar 2016	High Tide (ft)	5.06
A6	20 Mar 2016	High Tide Time	807
A6	20 Mar 2016	Low Tide (ft)	-0.35
A6	20 Mar 2016	Low Tide Time	1447
A6	20 Mar 2016	Comments	Kelp
A6	30 Mar 2016	Depth (m)	18
A6	30 Mar 2016	Arrive Time	840
A6	30 Mar 2016	Depart Time	844
A6	30 Mar 2016	Air Temp (C)	13
A6	30 Mar 2016	Weather	Partly Cloudy
A6	30 Mar 2016	Visibility (mi)	5
A6	30 Mar 2016	Wind Speed (kts)	7
A6	30 Mar 2016	Wind Dir	S
A6	30 Mar 2016	Water Color	Green
A6	30 Mar 2016	Wave Ht Low (ft)	3
A6	30 Mar 2016	Wave Period (sec)	9
A6	30 Mar 2016	Sea State	Calm
A6	30 Mar 2016	High Tide (ft)	2.68
A6	30 Mar 2016	High Tide Time	1621
A6	30 Mar 2016	Low Tide (ft)	0.91
A6	30 Mar 2016	Low Tide Time	925
A6	30 Mar 2016	Comments	Kelp
C6	10 Mar 2016	Depth (m)	10
C6	10 Mar 2016	Arrive Time	943
C6	10 Mar 2016	Depart Time	948

Station	Date	Parameter	Value
C6	10 Mar 2016	Air Temp (C)	16
C6	10 Mar 2016	Weather	Haze
C6	10 Mar 2016	Visibility (mi)	8
C6	10 Mar 2016	Wind Speed (kts)	1
C6	10 Mar 2016	Wind Dir	NE
C6	10 Mar 2016	Water Color	Green
C6	10 Mar 2016	Wave Ht Low (ft)	5
C6	10 Mar 2016	Wave Period (sec)	13
C6	10 Mar 2016	Sea State	Wind ripples
C6	10 Mar 2016	High Tide (ft)	5.41
C6	10 Mar 2016	High Tide Time	941
C6	10 Mar 2016	Low Tide (ft)	-0.46
C6	10 Mar 2016	Low Tide Time	1602
C6	10 Mar 2016	Comments	
C6	14 Mar 2016	Depth (m)	9
C6	14 Mar 2016	Arrive Time	1042
C6	14 Mar 2016	Depart Time	1046
C6	14 Mar 2016	Air Temp (C)	16
C6	14 Mar 2016	Weather	Overcast
C6	14 Mar 2016	Visibility (mi)	5
C6	14 Mar 2016	Wind Speed (kts)	8
C6	14 Mar 2016	Wind Dir	SW
C6	14 Mar 2016	Water Color	Green
C6	14 Mar 2016	Wave Ht Low (ft)	5
C6	14 Mar 2016	Wave Period (sec)	13
C6	14 Mar 2016	Sea State	Heavy chop
C6	14 Mar 2016	High Tide (ft)	3.04
C6	14 Mar 2016	High Tide Time	1510
C6	14 Mar 2016	Low Tide (ft)	0.35
C6	14 Mar 2016	Low Tide Time	850
C6	14 Mar 2016	Comments	
C6	20 Mar 2016	Depth (m)	9
C6	20 Mar 2016	Arrive Time	937
C6	20 Mar 2016	Depart Time	940
C6	20 Mar 2016	Air Temp (C)	15
C6	20 Mar 2016	Weather	Overcast
C6	20 Mar 2016	Visibility (mi)	5
C6	20 Mar 2016	Wind Speed (kts)	2
C6	20 Mar 2016	Wind Dir	SE
C6	20 Mar 2016	Water Color	Green
C6	20 Mar 2016	Wave Ht Low (ft)	3
C6	20 Mar 2016	Wave Period (sec)	9
C6	20 Mar 2016	Sea State	Calm
C6	20 Mar 2016	High Tide (ft)	5.06
C6	20 Mar 2016	High Tide Time	807
C6	20 Mar 2016	Low Tide (ft)	-0.35
C6	20 Mar 2016	Low Tide Time	1447
C6	20 Mar 2016	Comments	Kelp
C6	30 Mar 2016	Depth (m)	10
C6	30 Mar 2016	Arrive Time	935
C6	30 Mar 2016	Depart Time	939
C6	30 Mar 2016	Air Temp (C)	13

Station	Date	Parameter	Value
C6	30 Mar 2016	Weather	Fog
C6	30 Mar 2016	Visibility (mi)	5
C6	30 Mar 2016	Wind Speed (kts)	9
C6	30 Mar 2016	Wind Dir	N
C6	30 Mar 2016	Water Color	Green
C6	30 Mar 2016	Wave Ht Low (ft)	3
C6	30 Mar 2016	Wave Period (sec)	9
C6	30 Mar 2016	Sea State	Calm
C6	30 Mar 2016	High Tide (ft)	2.68
C6	30 Mar 2016	High Tide Time	1621
C6	30 Mar 2016	Low Tide (ft)	0.91
C6	30 Mar 2016	Low Tide Time	925
C6	30 Mar 2016	Comments	Kelp
A7	05 Mar 2016	Depth (m)	20
A7	05 Mar 2016	Arrive Time	851
A7	05 Mar 2016	Depart Time	857
A7	05 Mar 2016	Air Temp (C)	16
A7	05 Mar 2016	Weather	Cloudy
A7	05 Mar 2016	Visibility (mi)	6
A7	05 Mar 2016	Wind Speed (kts)	4
A7	05 Mar 2016	Wind Dir	S
A7	05 Mar 2016	Water Color	Greenish-Blue
A7	05 Mar 2016	Wave Ht Low (ft)	8
A7	05 Mar 2016	Wave Period (sec)	13
A7	05 Mar 2016	Sea State	Confused swell
A7	05 Mar 2016	High Tide (ft)	5.16
A7	05 Mar 2016	High Tide Time	601
A7	05 Mar 2016	Low Tide (ft)	-0.56
A7	05 Mar 2016	Low Tide Time	1304
A7	05 Mar 2016	Comments	Kelp; Kelp debris
A7	10 Mar 2016	Depth (m)	19
A7	10 Mar 2016	Arrive Time	833
A7	10 Mar 2016	Depart Time	838
A7	10 Mar 2016	Air Temp (C)	15
A7	10 Mar 2016	Weather	Haze
A7	10 Mar 2016	Visibility (mi)	8
A7	10 Mar 2016	Wind Speed (kts)	1
A7	10 Mar 2016	Wind Dir	W
A7	10 Mar 2016	Water Color	Green
A7	10 Mar 2016	Wave Ht Low (ft)	5
A7	10 Mar 2016	Wave Period (sec)	13
A7	10 Mar 2016	Sea State	Wind ripples
A7	10 Mar 2016	High Tide (ft)	5.41
A7	10 Mar 2016	High Tide Time	941
A7	10 Mar 2016	Low Tide (ft)	-0.46
A7	10 Mar 2016	Low Tide Time	1602
A7	10 Mar 2016	Comments	Kelp
A7	12 Mar 2016	Depth (m)	19
A7	12 Mar 2016	Arrive Time	1133
A7	12 Mar 2016	Depart Time	1140
A7	12 Mar 2016	Air Temp (C)	15
A7	12 Mar 2016	Weather	Partly Cloudy

Station	Date	Parameter	Value
A7	12 Mar 2016	Visibility (mi)	5
A7	12 Mar 2016	Wind Speed (kts)	11
A7	12 Mar 2016	Wind Dir	SW
A7	12 Mar 2016	Water Color	Green
A7	12 Mar 2016	Wave Ht Low (ft)	8
A7	12 Mar 2016	Wave Period (sec)	9
A7	12 Mar 2016	Sea State	Heavy chop
A7	12 Mar 2016	High Tide (ft)	4.16
A7	12 Mar 2016	High Tide Time	1126
A7	12 Mar 2016	Low Tide (ft)	-0.09
A7	12 Mar 2016	Low Tide Time	525
A7	12 Mar 2016	Comments	Resample A7 12 & 18m
A7	14 Mar 2016	Depth (m)	19
A7	14 Mar 2016	Arrive Time	902
A7	14 Mar 2016	Depart Time	911
A7	14 Mar 2016	Air Temp (C)	16
A7	14 Mar 2016	Weather	Overcast
A7	14 Mar 2016	Visibility (mi)	5
A7	14 Mar 2016	Wind Speed (kts)	8
A7	14 Mar 2016	Wind Dir	N
A7	14 Mar 2016	Water Color	Brownish-Green
A7	14 Mar 2016	Wave Ht Low (ft)	7
A7	14 Mar 2016	Wave Period (sec)	13
A7	14 Mar 2016	Sea State	Heavy chop
A7	14 Mar 2016	High Tide (ft)	3.04
A7	14 Mar 2016	High Tide Time	1510
A7	14 Mar 2016	Low Tide (ft)	0.35
A7	14 Mar 2016	Low Tide Time	850
A7	14 Mar 2016	Comments	Kelp debris
A7	16 Mar 2016	Depth (m)	17
A7	16 Mar 2016	Arrive Time	847
A7	16 Mar 2016	Depart Time	858
A7	16 Mar 2016	Air Temp (C)	15
A7	16 Mar 2016	Weather	Clear
A7	16 Mar 2016	Visibility (mi)	12
A7	16 Mar 2016	Wind Speed (kts)	2
A7	16 Mar 2016	Wind Dir	SW
A7	16 Mar 2016	Water Color	Green
A7	16 Mar 2016	Wave Ht Low (ft)	4
A7	16 Mar 2016	Wave Period (sec)	11
A7	16 Mar 2016	Sea State	Calm
A7	16 Mar 2016	High Tide (ft)	4.54
A7	16 Mar 2016	High Tide Time	412
A7	16 Mar 2016	Low Tide (ft)	0.13
A7	16 Mar 2016	Low Tide Time	1152
A7	16 Mar 2016	Comments	Kelp; Resamples A7 12m and 18m
A7	20 Mar 2016	Depth (m)	20
A7	20 Mar 2016	Arrive Time	829
A7	20 Mar 2016	Depart Time	832
A7	20 Mar 2016	Air Temp (C)	14
A7	20 Mar 2016	Weather	Overcast
A7	20 Mar 2016	Visibility (mi)	3

Station	Date	Parameter	Value
A7	20 Mar 2016	Wind Speed (kts)	2
A7	20 Mar 2016	Wind Dir	SW
A7	20 Mar 2016	Water Color	Green
A7	20 Mar 2016	Wave Ht Low (ft)	3
A7	20 Mar 2016	Wave Period (sec)	9
A7	20 Mar 2016	Sea State	Calm
A7	20 Mar 2016	High Tide (ft)	5.06
A7	20 Mar 2016	High Tide Time	807
A7	20 Mar 2016	Low Tide (ft)	-0.35
A7	20 Mar 2016	Low Tide Time	1447
A7	20 Mar 2016	Comments	Kelp; Paper and plastics floating station
A7	30 Mar 2016	Depth (m)	18
A7	30 Mar 2016	Arrive Time	827
A7	30 Mar 2016	Depart Time	830
A7	30 Mar 2016	Air Temp (C)	13
A7	30 Mar 2016	Weather	Partly Cloudy
A7	30 Mar 2016	Visibility (mi)	5
A7	30 Mar 2016	Wind Speed (kts)	5
A7	30 Mar 2016	Wind Dir	N
A7	30 Mar 2016	Water Color	Green
A7	30 Mar 2016	Wave Ht Low (ft)	3
A7	30 Mar 2016	Wave Period (sec)	9
A7	30 Mar 2016	Sea State	Calm
A7	30 Mar 2016	High Tide (ft)	2.68
A7	30 Mar 2016	High Tide Time	1621
A7	30 Mar 2016	Low Tide (ft)	0.91
A7	30 Mar 2016	Low Tide Time	925
A7	30 Mar 2016	Comments	Boats
C7	05 Mar 2016	Depth (m)	18
C7	05 Mar 2016	Arrive Time	919
C7	05 Mar 2016	Depart Time	923
C7	05 Mar 2016	Air Temp (C)	16
C7	05 Mar 2016	Weather	Cloudy
C7	05 Mar 2016	Visibility (mi)	6
C7	05 Mar 2016	Wind Speed (kts)	4
C7	05 Mar 2016	Wind Dir	E
C7	05 Mar 2016	Water Color	Greenish-Blue
C7	05 Mar 2016	Wave Ht Low (ft)	8
C7	05 Mar 2016	Wave Period (sec)	13
C7	05 Mar 2016	Sea State	Confused swell
C7	05 Mar 2016	High Tide (ft)	5.16
C7	05 Mar 2016	High Tide Time	601
C7	05 Mar 2016	Low Tide (ft)	-0.56
C7	05 Mar 2016	Low Tide Time	1304
C7	05 Mar 2016	Comments	
C7	10 Mar 2016	Depth (m)	19
C7	10 Mar 2016	Arrive Time	906
C7	10 Mar 2016	Depart Time	911
C7	10 Mar 2016	Air Temp (C)	16
C7	10 Mar 2016	Weather	Haze
C7	10 Mar 2016	Visibility (mi)	8
C7	10 Mar 2016	Wind Speed (kts)	1

Station	Date	Parameter	Value
C7	10 Mar 2016	Wind Dir	W
C7	10 Mar 2016	Water Color	Green
C7	10 Mar 2016	Wave Ht Low (ft)	5
C7	10 Mar 2016	Wave Period (sec)	13
C7	10 Mar 2016	Sea State	Wind ripples
C7	10 Mar 2016	High Tide (ft)	5.41
C7	10 Mar 2016	High Tide Time	941
C7	10 Mar 2016	Low Tide (ft)	-0.46
C7	10 Mar 2016	Low Tide Time	1602
C7	10 Mar 2016	Comments	Kelp; Lobster floats
C7	14 Mar 2016	Depth (m)	19
C7	14 Mar 2016	Arrive Time	949
C7	14 Mar 2016	Depart Time	1002
C7	14 Mar 2016	Air Temp (C)	16
C7	14 Mar 2016	Weather	Overcast
C7	14 Mar 2016	Visibility (mi)	5
C7	14 Mar 2016	Wind Speed (kts)	1
C7	14 Mar 2016	Wind Dir	S
C7	14 Mar 2016	Water Color	Brownish-Green
C7	14 Mar 2016	Wave Ht Low (ft)	5
C7	14 Mar 2016	Wave Period (sec)	13
C7	14 Mar 2016	Sea State	Heavy chop
C7	14 Mar 2016	High Tide (ft)	3.04
C7	14 Mar 2016	High Tide Time	1510
C7	14 Mar 2016	Low Tide (ft)	0.35
C7	14 Mar 2016	Low Tide Time	850
C7	14 Mar 2016	Comments	Kelp
C7	20 Mar 2016	Depth (m)	18
C7	20 Mar 2016	Arrive Time	859
C7	20 Mar 2016	Depart Time	905
C7	20 Mar 2016	Air Temp (C)	15
C7	20 Mar 2016	Weather	Overcast
C7	20 Mar 2016	Visibility (mi)	3
C7	20 Mar 2016	Wind Speed (kts)	1
C7	20 Mar 2016	Wind Dir	S
C7	20 Mar 2016	Water Color	Green
C7	20 Mar 2016	Wave Ht Low (ft)	3
C7	20 Mar 2016	Wave Period (sec)	9
C7	20 Mar 2016	Sea State	Calm
C7	20 Mar 2016	High Tide (ft)	5.06
C7	20 Mar 2016	High Tide Time	807
C7	20 Mar 2016	Low Tide (ft)	-0.35
C7	20 Mar 2016	Low Tide Time	1447
C7	20 Mar 2016	Comments	Kelp
C7	30 Mar 2016	Depth (m)	18
C7	30 Mar 2016	Arrive Time	856
C7	30 Mar 2016	Depart Time	859
C7	30 Mar 2016	Air Temp (C)	13
C7	30 Mar 2016	Weather	Partly Cloudy
C7	30 Mar 2016	Visibility (mi)	5
C7	30 Mar 2016	Wind Speed (kts)	7
C7	30 Mar 2016	Wind Dir	NE

Station	Date	Parameter	Value
C7	30 Mar 2016	Water Color	Green
C7	30 Mar 2016	Wave Ht Low (ft)	3
C7	30 Mar 2016	Wave Period (sec)	9
C7	30 Mar 2016	Sea State	Calm
C7	30 Mar 2016	High Tide (ft)	2.68
C7	30 Mar 2016	High Tide Time	1621
C7	30 Mar 2016	Low Tide (ft)	0.91
C7	30 Mar 2016	Low Tide Time	925
C7	30 Mar 2016	Comments	Kelp; Kelp debris
C8	05 Mar 2016	Depth (m)	19
C8	05 Mar 2016	Arrive Time	930
C8	05 Mar 2016	Depart Time	933
C8	05 Mar 2016	Air Temp (C)	17
C8	05 Mar 2016	Weather	Cloudy
C8	05 Mar 2016	Visibility (mi)	6
C8	05 Mar 2016	Wind Speed (kts)	2
C8	05 Mar 2016	Wind Dir	NW
C8	05 Mar 2016	Water Color	Greenish-Blue
C8	05 Mar 2016	Wave Ht Low (ft)	8
C8	05 Mar 2016	Wave Period (sec)	13
C8	05 Mar 2016	Sea State	Confused swell
C8	05 Mar 2016	High Tide (ft)	5.16
C8	05 Mar 2016	High Tide Time	601
C8	05 Mar 2016	Low Tide (ft)	-0.56
C8	05 Mar 2016	Low Tide Time	1304
C8	05 Mar 2016	Comments	
C8	10 Mar 2016	Depth (m)	18
C8	10 Mar 2016	Arrive Time	920
C8	10 Mar 2016	Depart Time	925
C8	10 Mar 2016	Air Temp (C)	16
C8	10 Mar 2016	Weather	Haze
C8	10 Mar 2016	Visibility (mi)	8
C8	10 Mar 2016	Wind Speed (kts)	3
C8	10 Mar 2016	Wind Dir	E
C8	10 Mar 2016	Water Color	Green
C8	10 Mar 2016	Wave Ht Low (ft)	5
C8	10 Mar 2016	Wave Period (sec)	13
C8	10 Mar 2016	Sea State	Wind ripples
C8	10 Mar 2016	High Tide (ft)	5.41
C8	10 Mar 2016	High Tide Time	941
C8	10 Mar 2016	Low Tide (ft)	-0.46
C8	10 Mar 2016	Low Tide Time	1602
C8	10 Mar 2016	Comments	
C8	14 Mar 2016	Depth (m)	19
C8	14 Mar 2016	Arrive Time	1017
C8	14 Mar 2016	Depart Time	1022
C8	14 Mar 2016	Air Temp (C)	16
C8	14 Mar 2016	Weather	Overcast
C8	14 Mar 2016	Visibility (mi)	5
C8	14 Mar 2016	Wind Speed (kts)	3
C8	14 Mar 2016	Wind Dir	NE
C8	14 Mar 2016	Water Color	Brownish-Green

Station	Date	Parameter	Value
C8	14 Mar 2016	Wave Ht Low (ft)	5
C8	14 Mar 2016	Wave Period (sec)	13
C8	14 Mar 2016	Sea State	Heavy chop
C8	14 Mar 2016	High Tide (ft)	3.04
C8	14 Mar 2016	High Tide Time	1510
C8	14 Mar 2016	Low Tide (ft)	0.35
C8	14 Mar 2016	Low Tide Time	850
C8	14 Mar 2016	Comments	Kelp debris
C8	20 Mar 2016	Depth (m)	19
C8	20 Mar 2016	Arrive Time	915
C8	20 Mar 2016	Depart Time	918
C8	20 Mar 2016	Air Temp (C)	15
C8	20 Mar 2016	Weather	Overcast
C8	20 Mar 2016	Visibility (mi)	5
C8	20 Mar 2016	Wind Speed (kts)	1
C8	20 Mar 2016	Wind Dir	W
C8	20 Mar 2016	Water Color	Green
C8	20 Mar 2016	Wave Ht Low (ft)	3
C8	20 Mar 2016	Wave Period (sec)	9
C8	20 Mar 2016	Sea State	Calm
C8	20 Mar 2016	High Tide (ft)	5.06
C8	20 Mar 2016	High Tide Time	807
C8	20 Mar 2016	Low Tide (ft)	-0.35
C8	20 Mar 2016	Low Tide Time	1447
C8	20 Mar 2016	Comments	Kelp debris; Boats
C8	30 Mar 2016	Depth (m)	18
C8	30 Mar 2016	Arrive Time	909
C8	30 Mar 2016	Depart Time	914
C8	30 Mar 2016	Air Temp (C)	13
C8	30 Mar 2016	Weather	Partly Cloudy
C8	30 Mar 2016	Visibility (mi)	5
C8	30 Mar 2016	Wind Speed (kts)	8
C8	30 Mar 2016	Wind Dir	N
C8	30 Mar 2016	Water Color	Green
C8	30 Mar 2016	Wave Ht Low (ft)	3
C8	30 Mar 2016	Wave Period (sec)	9
C8	30 Mar 2016	Sea State	Calm
C8	30 Mar 2016	High Tide (ft)	2.68
C8	30 Mar 2016	High Tide Time	1621
C8	30 Mar 2016	Low Tide (ft)	0.91
C8	30 Mar 2016	Low Tide Time	925
C8	30 Mar 2016	Comments	Kelp

**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 2016	1	16.63	83.45	7.8	33.56	8.2	24.5	0.68
A1	05 Mar 2016	2	16.63	83.38	7.8	33.56	8.2	24.5	0.70
A1	05 Mar 2016	3	16.61	83.94	7.8	33.55	8.2	24.5	0.77
A1	05 Mar 2016	4	16.60	84.04	7.8	33.55	8.2	24.5	0.83
A1	05 Mar 2016	5	16.59	84.05	7.8	33.55	8.2	24.5	0.88
A1	05 Mar 2016	6	16.58	83.91	7.8	33.55	8.2	24.5	0.91
A1	05 Mar 2016	7	16.55	83.91	7.8	33.55	8.2	24.5	0.97
A1	05 Mar 2016	8	16.52	83.96	7.8	33.55	8.2	24.5	1.01
A1	05 Mar 2016	9	16.48	83.77	7.8	33.55	8.2	24.5	1.06
A1	05 Mar 2016	10	16.44	83.73	7.8	33.55	8.2	24.5	1.10
A1	05 Mar 2016	11	16.41	83.52	7.7	33.55	8.2	24.5	1.14
A1	05 Mar 2016	12	16.35	83.57	7.6	33.54	8.2	24.5	1.15
A1	05 Mar 2016	13	15.89	82.94	7.4	33.53	8.2	24.6	1.21
A1	05 Mar 2016	14	15.85	82.85	7.3	33.52	8.2	24.6	1.26
A1	05 Mar 2016	15	15.42	79.06	7.2	33.52	8.2	24.7	1.22
A1	05 Mar 2016	16	15.31	80.22	7.1	33.51	8.2	24.8	1.16
A1	05 Mar 2016	17	14.95	79.01	6.8	33.50	8.2	24.8	1.13
A1	05 Mar 2016	18	14.76	75.21	6.7	33.49	8.1	24.9	1.07
A1	10 Mar 2016	1	16.19	80.39	7.6	33.53	8.2	24.6	0.82
A1	10 Mar 2016	2	16.13	81.04	7.5	33.53	8.2	24.6	0.85
A1	10 Mar 2016	3	15.65	81.75	7.2	33.53	8.2	24.7	0.92
A1	10 Mar 2016	4	15.22	82.31	6.9	33.51	8.2	24.8	0.92
A1	10 Mar 2016	5	14.76	82.61	6.6	33.49	8.2	24.9	0.85
A1	10 Mar 2016	6	14.30	82.63	6.4	33.47	8.1	24.9	0.71
A1	10 Mar 2016	7	14.04	82.72	6.2	33.45	8.1	25.0	0.61
A1	10 Mar 2016	8	13.76	83.32	6.1	33.44	8.1	25.0	0.49
A1	10 Mar 2016	9	13.54	83.44	6.0	33.42	8.1	25.1	0.45
A1	10 Mar 2016	10	13.33	82.82	5.8	33.41	8.1	25.1	0.42
A1	10 Mar 2016	11	13.16	83.13	5.8	33.41	8.1	25.1	0.39
A1	10 Mar 2016	12	13.09	83.16	5.7	33.41	8.1	25.1	0.36
A1	10 Mar 2016	13	13.02	82.81	5.6	33.41	8.1	25.2	0.35
A1	10 Mar 2016	14	12.98	82.48	5.5	33.42	8.1	25.2	0.35
A1	10 Mar 2016	15	12.98	82.23	5.5	33.42	8.1	25.2	0.39
A1	10 Mar 2016	16	12.96	81.76	5.5	33.42	8.1	25.2	0.37
A1	10 Mar 2016	17	12.93	82.35	5.4	33.42	8.1	25.2	0.35
A1	10 Mar 2016	18	12.93	82.44	5.4	33.42	8.1	25.2	0.34
A1	10 Mar 2016	19	12.93	82.60	5.5	33.42	8.1	25.2	0.33
A1	14 Mar 2016	1	15.87	75.28	7.4	33.50	8.1	24.6	1.95
A1	14 Mar 2016	2	15.87	72.61	7.4	33.50	8.1	24.6	1.97
A1	14 Mar 2016	3	15.82	76.93	7.3	33.50	8.1	24.6	2.14
A1	14 Mar 2016	4	15.66	77.22	7.0	33.51	8.1	24.7	2.12
A1	14 Mar 2016	5	15.08	78.03	6.5	33.51	8.1	24.8	1.91
A1	14 Mar 2016	6	14.14	80.57	6.1	33.49	8.0	25.0	1.43
A1	14 Mar 2016	7	13.67	79.82	5.8	33.46	8.0	25.1	1.10
A1	14 Mar 2016	8	13.54	79.56	5.8	33.45	8.0	25.1	0.94
A1	14 Mar 2016	9	13.53	79.47	5.8	33.45	8.0	25.1	0.86
A1	14 Mar 2016	10	13.46	79.43	5.7	33.45	8.0	25.1	0.84
A1	14 Mar 2016	11	13.17	78.73	5.5	33.45	8.0	25.2	0.77
A1	14 Mar 2016	12	12.93	77.50	5.4	33.44	8.0	25.2	0.66

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma-t$ )	Chlor ( $\mu\text{g/L}$ )
A1	14 Mar 2016	13	12.92	77.20	5.3	33.44	8.0	25.2	0.58
A1	14 Mar 2016	14	12.78	76.26	5.3	33.44	7.9	25.2	0.54
A1	14 Mar 2016	15	12.73	75.12	5.3	33.44	7.9	25.2	0.51
A1	14 Mar 2016	16	12.72	74.59	5.2	33.44	7.9	25.2	0.51
A1	14 Mar 2016	17	12.72	74.58	5.3	33.44	7.9	25.2	0.49
A1	14 Mar 2016	18	12.73	74.69	5.3	33.44	7.9	25.2	0.50
A1	20 Mar 2016	1	15.56	74.58	8.3	33.47	8.1	24.7	7.19
A1	20 Mar 2016	2	15.51	74.30	8.2	33.47	8.1	24.7	7.12
A1	20 Mar 2016	3	15.28	75.52	8.0	33.47	8.1	24.7	6.32
A1	20 Mar 2016	4	15.21	76.76	7.9	33.47	8.1	24.7	5.97
A1	20 Mar 2016	5	15.17	77.07	7.8	33.47	8.1	24.8	5.63
A1	20 Mar 2016	6	15.16	77.16	7.8	33.46	8.1	24.8	5.46
A1	20 Mar 2016	7	15.15	77.17	7.8	33.46	8.1	24.8	5.43
A1	20 Mar 2016	8	15.12	77.09	7.6	33.46	8.1	24.8	5.45
A1	20 Mar 2016	9	14.72	77.35	7.3	33.47	8.0	24.9	5.11
A1	20 Mar 2016	10	14.45	78.10	6.9	33.46	8.0	24.9	4.46
A1	20 Mar 2016	11	13.98	80.13	6.5	33.45	8.0	25.0	3.73
A1	20 Mar 2016	12	13.63	80.86	6.2	33.45	8.0	25.1	2.89
A1	20 Mar 2016	13	13.61	80.83	6.0	33.44	7.9	25.1	2.51
A1	20 Mar 2016	14	13.39	80.63	5.9	33.44	7.9	25.1	1.96
A1	20 Mar 2016	15	13.27	79.96	5.7	33.44	7.9	25.1	1.50
A1	20 Mar 2016	16	13.22	79.53	5.6	33.44	7.9	25.1	1.37
A1	20 Mar 2016	17	13.07	79.03	5.6	33.45	7.9	25.2	1.44
A1	20 Mar 2016	18	12.94	77.67	5.6	33.45	7.9	25.2	1.54
A1	20 Mar 2016	19	12.91	77.08	5.6	33.45	7.9	25.2	1.57
A1	30 Mar 2016	1	15.36	75.94	7.9	33.52	8.2	24.8	2.39
A1	30 Mar 2016	2	15.36	75.72	7.9	33.52	8.2	24.8	2.51
A1	30 Mar 2016	3	15.36	75.73	7.8	33.52	8.2	24.8	2.98
A1	30 Mar 2016	4	15.35	75.65	7.8	33.52	8.2	24.8	3.44
A1	30 Mar 2016	5	15.33	75.80	7.8	33.52	8.2	24.8	3.59
A1	30 Mar 2016	6	15.26	75.81	7.7	33.52	8.2	24.8	3.74
A1	30 Mar 2016	7	15.15	76.16	7.7	33.52	8.2	24.8	3.76
A1	30 Mar 2016	8	15.04	76.66	7.6	33.52	8.2	24.8	3.48
A1	30 Mar 2016	9	14.88	77.59	7.4	33.51	8.2	24.8	3.56
A1	30 Mar 2016	10	14.36	78.70	7.0	33.49	8.1	24.9	3.18
A1	30 Mar 2016	11	13.81	80.75	6.8	33.49	8.1	25.1	2.84
A1	30 Mar 2016	12	13.65	81.77	6.6	33.49	8.1	25.1	2.77
A1	30 Mar 2016	13	13.63	81.92	6.5	33.48	8.1	25.1	2.61
A1	30 Mar 2016	14	13.56	82.37	6.4	33.48	8.1	25.1	2.25
A1	30 Mar 2016	15	13.46	82.90	6.3	33.48	8.0	25.1	2.28
A1	30 Mar 2016	16	13.38	82.97	6.2	33.48	8.0	25.1	2.38
A1	30 Mar 2016	17	13.25	83.21	6.0	33.49	8.0	25.2	2.19
A1	30 Mar 2016	18	13.21	83.53	5.9	33.49	8.0	25.2	2.07
A1	30 Mar 2016	19	13.09	83.75	5.8	33.50	8.0	25.2	1.82
C4	10 Mar 2016	1	15.89	77.99	7.5	33.52	8.2	24.6	0.55
C4	10 Mar 2016	2	15.82	78.29	7.2	33.52	8.2	24.6	0.60
C4	10 Mar 2016	3	15.27	80.89	6.9	33.52	8.1	24.8	0.61
C4	10 Mar 2016	4	15.02	82.87	6.6	33.50	8.1	24.8	0.61
C4	10 Mar 2016	5	14.86	82.46	6.6	33.50	8.1	24.8	0.62
C4	10 Mar 2016	6	14.77	82.23	6.5	33.49	8.1	24.9	0.64
C4	10 Mar 2016	7	14.60	82.29	6.4	33.49	8.1	24.9	0.62
C4	10 Mar 2016	8	14.54	82.41	6.4	33.48	8.1	24.9	0.58

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C4	10 Mar 2016	9	14.52	82.46	6.4	33.48	8.1	24.9	0.56
C4	10 Mar 2016	10	14.51	82.47	6.3	33.48	8.1	24.9	0.55
C4	10 Mar 2016	11	14.51	82.57	6.3	33.48	8.1	24.9	0.58
C4	10 Mar 2016	12	14.50	82.50	6.3	33.48	8.1	24.9	0.59
C4	14 Mar 2016	1	16.07	69.83	7.7	33.51	8.1	24.6	0.59
C4	14 Mar 2016	2	16.07	69.65	7.7	33.51	8.1	24.6	0.64
C4	14 Mar 2016	3	16.04	69.48	7.7	33.51	8.1	24.6	0.74
C4	14 Mar 2016	4	15.93	68.95	7.6	33.51	8.1	24.6	0.93
C4	14 Mar 2016	5	15.75	68.73	7.4	33.51	8.1	24.7	1.13
C4	14 Mar 2016	6	15.61	70.41	7.3	33.50	8.1	24.7	1.33
C4	14 Mar 2016	7	15.60	70.71	7.3	33.49	8.1	24.7	1.42
C4	14 Mar 2016	8	15.55	70.94	7.1	33.49	8.1	24.7	1.41
C4	14 Mar 2016	9	15.52	72.39	7.0	33.49	8.1	24.7	1.34
C4	20 Mar 2016	1	15.69	78.66	8.2	33.47	8.1	24.6	2.19
C4	20 Mar 2016	2	15.65	77.90	8.1	33.47	8.1	24.6	2.11
C4	20 Mar 2016	3	15.29	77.88	7.7	33.47	8.1	24.7	2.65
C4	20 Mar 2016	4	14.82	77.71	7.3	33.47	8.1	24.8	3.03
C4	20 Mar 2016	5	14.69	78.14	7.1	33.46	8.1	24.8	3.02
C4	20 Mar 2016	6	14.67	78.06	7.1	33.45	8.1	24.9	3.34
C4	20 Mar 2016	7	14.62	78.05	7.0	33.45	8.1	24.9	3.14
C4	20 Mar 2016	8	14.58	78.25	7.0	33.45	8.1	24.9	3.31
C4	20 Mar 2016	9	14.53	78.14	7.0	33.45	8.1	24.9	3.21
C4	20 Mar 2016	10	14.34	77.76	6.9	33.45	8.0	24.9	3.13
C4	20 Mar 2016	11	14.22	77.55	6.8	33.45	8.0	24.9	2.92
C4	30 Mar 2016	1	15.70	75.10	8.2	33.53	8.2	24.7	1.03
C4	30 Mar 2016	2	15.69	74.94	8.1	33.53	8.2	24.7	1.09
C4	30 Mar 2016	3	15.65	74.64	8.1	33.53	8.2	24.7	1.37
C4	30 Mar 2016	4	15.61	74.09	7.9	33.52	8.2	24.7	1.78
C4	30 Mar 2016	5	15.28	74.16	7.7	33.52	8.2	24.8	2.15
C4	30 Mar 2016	6	15.04	75.77	7.4	33.52	8.2	24.8	2.20
C4	30 Mar 2016	7	14.65	79.70	7.0	33.51	8.2	24.9	1.86
C4	30 Mar 2016	8	14.38	80.69	6.8	33.50	8.1	24.9	1.42
C4	30 Mar 2016	9	14.27	80.36	6.8	33.50	8.1	25.0	1.11
C5	10 Mar 2016	1	16.11	74.63	7.5	33.51	8.2	24.6	0.69
C5	10 Mar 2016	2	16.01	74.60	7.5	33.52	8.2	24.6	0.70
C5	10 Mar 2016	3	15.88	74.85	7.5	33.52	8.2	24.6	0.80
C5	10 Mar 2016	4	15.77	76.42	7.3	33.52	8.1	24.7	1.01
C5	10 Mar 2016	5	15.69	77.73	7.3	33.51	8.1	24.7	1.08
C5	10 Mar 2016	6	15.57	78.96	7.2	33.52	8.1	24.7	0.94
C5	10 Mar 2016	7	15.21	81.62	6.9	33.52	8.1	24.8	0.83
C5	10 Mar 2016	8	15.09	82.81	6.8	33.50	8.1	24.8	0.62
C5	10 Mar 2016	9	15.09	82.90	6.8	33.50	8.1	24.8	0.53
C5	10 Mar 2016	10	15.10	82.58	6.8	33.50	8.1	24.8	0.51
C5	10 Mar 2016	11	15.08	82.23	6.8	33.50	8.1	24.8	0.48
C5	14 Mar 2016	1	15.94	69.12	7.5	33.49	8.1	24.6	0.70
C5	14 Mar 2016	2	15.92	66.38	7.4	33.49	8.1	24.6	0.73
C5	14 Mar 2016	3	15.84	70.76	7.4	33.49	8.1	24.6	0.87
C5	14 Mar 2016	4	15.84	70.60	7.3	33.49	8.1	24.6	1.00
C5	14 Mar 2016	5	15.83	68.61	7.3	33.49	8.1	24.6	1.13
C5	14 Mar 2016	6	15.84	71.40	7.3	33.49	8.1	24.6	1.29

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C5	14 Mar 2016	7	15.84	71.18	7.3	33.49	8.1	24.6	1.36
C5	14 Mar 2016	8	15.83	59.07	7.3	33.49	8.1	24.6	1.36
C5	14 Mar 2016	9	15.84	62.22	7.3	33.49	8.1	24.6	1.31
C5	14 Mar 2016	10	15.85	10.71	7.3	33.49	8.1	24.6	1.31
C5	20 Mar 2016	1	15.99	73.79	8.0	33.48	8.2	24.6	1.42
C5	20 Mar 2016	2	15.79	72.80	7.8	33.48	8.2	24.6	1.52
C5	20 Mar 2016	3	15.00	74.70	7.7	33.47	8.1	24.8	1.78
C5	20 Mar 2016	4	14.61	77.11	7.5	33.46	8.1	24.9	2.28
C5	20 Mar 2016	5	14.38	78.23	7.2	33.45	8.1	24.9	2.66
C5	20 Mar 2016	6	14.24	79.01	7.0	33.45	8.1	24.9	2.85
C5	20 Mar 2016	7	14.18	79.20	6.9	33.45	8.0	24.9	2.77
C5	20 Mar 2016	8	14.13	79.02	6.8	33.45	8.0	25.0	2.67
C5	20 Mar 2016	9	14.06	78.06	6.8	33.45	8.0	25.0	2.41
C5	30 Mar 2016	1	15.63	75.87	8.0	33.52	8.2	24.7	1.15
C5	30 Mar 2016	2	15.63	75.88	7.9	33.52	8.2	24.7	1.21
C5	30 Mar 2016	3	15.62	75.79	7.9	33.53	8.2	24.7	1.34
C5	30 Mar 2016	4	15.60	75.48	7.9	33.53	8.2	24.7	1.56
C5	30 Mar 2016	5	15.57	74.69	7.8	33.53	8.2	24.7	1.92
C5	30 Mar 2016	6	15.42	74.11	7.6	33.53	8.2	24.7	2.56
C5	30 Mar 2016	7	15.05	75.98	7.3	33.53	8.2	24.8	2.77
C5	30 Mar 2016	8	14.85	77.61	6.9	33.52	8.2	24.9	2.16
C5	30 Mar 2016	9	14.19	79.93	6.5	33.52	8.1	25.0	1.48
C5	30 Mar 2016	10	13.83	81.44	6.4	33.52	8.1	25.1	1.17
A6	05 Mar 2016	1	16.63	74.82	7.8	33.55	8.1	24.5	0.73
A6	05 Mar 2016	2	16.61	76.26	7.7	33.55	8.1	24.5	0.79
A6	05 Mar 2016	3	16.51	75.32	7.7	33.55	8.1	24.5	0.95
A6	05 Mar 2016	4	16.53	75.75	7.7	33.55	8.1	24.5	1.05
A6	05 Mar 2016	5	16.45	75.24	7.7	33.55	8.1	24.5	1.15
A6	05 Mar 2016	6	16.40	76.22	7.6	33.54	8.1	24.5	1.20
A6	05 Mar 2016	7	16.26	76.58	7.6	33.54	8.1	24.6	1.18
A6	05 Mar 2016	8	16.25	77.23	7.6	33.54	8.1	24.6	1.19
A6	05 Mar 2016	9	16.16	76.05	7.5	33.54	8.1	24.6	1.19
A6	05 Mar 2016	10	16.04	70.03	7.5	33.53	8.1	24.6	1.20
A6	05 Mar 2016	11	16.03	75.30	7.4	33.53	8.1	24.6	1.19
A6	05 Mar 2016	12	15.74	74.14	7.2	33.53	8.1	24.7	1.09
A6	05 Mar 2016	13	15.77	72.96	7.2	33.52	8.1	24.7	1.04
A6	05 Mar 2016	14	15.58	72.19	7.1	33.52	8.1	24.7	1.01
A6	05 Mar 2016	15	15.53	72.07	7.0	33.52	8.1	24.7	0.99
A6	05 Mar 2016	16	15.34	70.17	6.9	33.51	8.1	24.8	0.98
A6	05 Mar 2016	17	15.02	69.00	6.8	33.51	8.1	24.8	0.98
A6	05 Mar 2016	18	15.09	66.40	6.8	33.51	8.1	24.8	1.00
A6	05 Mar 2016	19	14.96	63.94	6.8	33.50	8.1	24.8	0.98
A6	05 Mar 2016	20	14.95	62.93	6.8	33.51	8.1	24.8	0.98
A6	10 Mar 2016	1	16.27	67.53	7.6	33.47	8.2	24.5	0.88
A6	10 Mar 2016	2	16.20	70.26	7.5	33.47	8.2	24.5	1.01
A6	10 Mar 2016	3	15.95	70.99	7.2	33.49	8.2	24.6	1.31
A6	10 Mar 2016	4	15.23	72.94	6.8	33.48	8.1	24.8	1.20
A6	10 Mar 2016	5	14.42	76.10	6.4	33.48	8.1	24.9	0.87
A6	10 Mar 2016	6	14.20	78.30	6.3	33.46	8.1	25.0	0.62
A6	10 Mar 2016	7	14.10	78.56	6.3	33.45	8.1	25.0	0.56
A6	10 Mar 2016	8	14.00	78.54	6.2	33.45	8.1	25.0	0.53

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A6	10 Mar 2016	9	13.94	77.99	6.2	33.45	8.1	25.0	0.54
A6	10 Mar 2016	10	13.85	77.79	6.1	33.45	8.1	25.0	0.54
A6	10 Mar 2016	11	13.72	77.16	6.0	33.45	8.1	25.0	0.56
A6	10 Mar 2016	12	13.61	76.18	5.9	33.44	8.0	25.1	0.51
A6	10 Mar 2016	13	13.42	75.18	5.8	33.43	8.0	25.1	0.49
A6	10 Mar 2016	14	13.26	74.84	5.7	33.43	8.0	25.1	0.46
A6	10 Mar 2016	15	13.23	74.45	5.6	33.42	8.0	25.1	0.43
A6	10 Mar 2016	16	13.00	71.84	5.6	33.42	8.0	25.2	0.39
A6	10 Mar 2016	17	12.99	71.76	5.5	33.42	8.0	25.2	0.38
A6	10 Mar 2016	18	12.99	71.46	5.5	33.42	8.0	25.2	0.37
A6	10 Mar 2016	19	13.00	71.58	5.5	33.42	8.0	25.2	0.37
A6	14 Mar 2016	1	16.08	72.44	7.5	33.48	8.1	24.6	2.09
A6	14 Mar 2016	2	16.08	72.30	7.5	33.48	8.1	24.6	2.11
A6	14 Mar 2016	3	16.04	72.50	7.5	33.48	8.1	24.6	2.22
A6	14 Mar 2016	4	15.98	72.61	7.4	33.48	8.1	24.6	2.29
A6	14 Mar 2016	5	15.94	72.93	7.3	33.48	8.1	24.6	2.26
A6	14 Mar 2016	6	15.65	74.64	7.1	33.49	8.1	24.7	2.03
A6	14 Mar 2016	7	15.39	76.49	6.8	33.49	8.1	24.7	1.74
A6	14 Mar 2016	8	14.81	77.86	6.5	33.49	8.1	24.8	1.49
A6	14 Mar 2016	9	14.50	77.17	6.1	33.48	8.0	24.9	1.31
A6	14 Mar 2016	10	13.72	75.02	5.6	33.45	8.0	25.1	1.06
A6	14 Mar 2016	11	13.03	72.39	5.3	33.45	8.0	25.2	0.84
A6	14 Mar 2016	12	12.56	67.17	5.1	33.44	7.9	25.3	0.62
A6	14 Mar 2016	13	12.34	63.90	5.0	33.43	7.9	25.3	0.50
A6	14 Mar 2016	14	12.26	62.72	5.0	33.43	7.9	25.3	0.41
A6	14 Mar 2016	15	12.22	61.50	5.0	33.43	7.9	25.3	0.37
A6	14 Mar 2016	16	12.19	60.37	4.9	33.43	7.9	25.3	0.35
A6	14 Mar 2016	17	12.15	58.56	4.8	33.44	7.9	25.3	0.34
A6	14 Mar 2016	18	12.14	58.36	4.8	33.44	7.9	25.4	0.33
A6	14 Mar 2016	19	12.17	57.64	4.9	33.44	7.9	25.3	0.33
A6	14 Mar 2016	20	12.16	56.03	4.8	33.45	7.9	25.4	0.35
A6	14 Mar 2016	21	12.16	54.26	4.9	33.45	7.9	25.4	0.37
A6	20 Mar 2016	1	16.01	77.02	8.3	33.48	8.2	24.6	3.31
A6	20 Mar 2016	2	16.01	77.02	8.2	33.48	8.2	24.6	3.41
A6	20 Mar 2016	3	15.95	76.76	8.2	33.48	8.2	24.6	3.51
A6	20 Mar 2016	4	15.84	76.66	8.1	33.48	8.2	24.6	3.83
A6	20 Mar 2016	5	15.61	76.24	7.9	33.47	8.1	24.7	4.18
A6	20 Mar 2016	6	15.19	76.78	7.8	33.47	8.1	24.8	4.57
A6	20 Mar 2016	7	14.97	77.75	7.6	33.47	8.1	24.8	4.43
A6	20 Mar 2016	8	14.85	78.81	7.5	33.46	8.1	24.8	3.98
A6	20 Mar 2016	9	14.72	79.20	7.4	33.46	8.1	24.8	4.06
A6	20 Mar 2016	10	14.50	79.73	7.1	33.46	8.1	24.9	3.87
A6	20 Mar 2016	11	14.26	80.05	6.9	33.46	8.0	24.9	3.38
A6	20 Mar 2016	12	14.08	80.26	6.6	33.46	8.0	25.0	3.11
A6	20 Mar 2016	13	13.61	80.69	6.2	33.45	8.0	25.1	2.60
A6	20 Mar 2016	14	13.08	81.88	5.9	33.45	8.0	25.2	2.15
A6	20 Mar 2016	15	12.96	82.70	5.7	33.44	8.0	25.2	1.95
A6	20 Mar 2016	16	12.88	83.13	5.7	33.44	7.9	25.2	1.83
A6	20 Mar 2016	17	12.85	83.04	5.7	33.44	7.9	25.2	1.72
A6	20 Mar 2016	18	12.85	83.16	5.7	33.45	7.9	25.2	1.62
A6	30 Mar 2016	1	15.72	77.92	8.0	33.53	8.2	24.7	1.76
A6	30 Mar 2016	2	15.72	77.72	8.0	33.53	8.2	24.7	1.79

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A6	30 Mar 2016	3	15.71	77.90	8.0	33.53	8.2	24.7	2.04
A6	30 Mar 2016	4	15.71	77.87	8.0	33.53	8.2	24.7	2.32
A6	30 Mar 2016	5	15.70	78.07	7.9	33.53	8.2	24.7	2.66
A6	30 Mar 2016	6	15.69	77.99	7.9	33.53	8.2	24.7	2.95
A6	30 Mar 2016	7	15.66	78.24	7.9	33.53	8.2	24.7	3.20
A6	30 Mar 2016	8	15.65	78.61	7.7	33.53	8.2	24.7	3.23
A6	30 Mar 2016	9	15.35	79.07	7.2	33.52	8.2	24.8	3.01
A6	30 Mar 2016	10	14.54	80.18	6.6	33.54	8.1	24.9	2.36
A6	30 Mar 2016	11	13.88	81.91	6.1	33.52	8.1	25.1	1.79
A6	30 Mar 2016	12	13.40	82.32	5.8	33.51	8.0	25.2	1.59
A6	30 Mar 2016	13	13.17	82.63	5.8	33.51	8.0	25.2	1.42
A6	30 Mar 2016	14	13.07	82.68	5.7	33.51	8.0	25.2	1.35
A6	30 Mar 2016	15	13.04	82.65	5.7	33.51	8.0	25.2	1.36
A6	30 Mar 2016	16	13.07	82.47	5.7	33.51	8.0	25.2	1.34
A6	30 Mar 2016	17	13.03	82.34	5.6	33.51	8.0	25.2	1.32
A6	30 Mar 2016	18	13.01	82.49	5.6	33.51	8.0	25.2	1.24
C6	10 Mar 2016	1	16.23	66.64	7.7	33.47	8.2	24.5	0.86
C6	10 Mar 2016	2	16.22	69.44	7.7	33.47	8.2	24.5	0.86
C6	10 Mar 2016	3	16.20	70.09	7.7	33.47	8.2	24.5	1.00
C6	10 Mar 2016	4	15.96	70.82	7.6	33.49	8.1	24.6	1.25
C6	10 Mar 2016	5	15.91	71.46	7.5	33.49	8.1	24.6	1.25
C6	10 Mar 2016	6	15.78	72.59	7.3	33.50	8.1	24.6	1.03
C6	10 Mar 2016	7	15.64	73.36	7.3	33.50	8.1	24.7	0.82
C6	10 Mar 2016	8	15.52	74.37	7.1	33.50	8.1	24.7	0.72
C6	10 Mar 2016	9	15.32	75.12	6.9	33.49	8.1	24.7	0.65
C6	10 Mar 2016	10	14.83	76.18	6.5	33.49	8.1	24.8	0.62
C6	14 Mar 2016	1	16.02	66.28	7.5	33.48	8.1	24.6	1.13
C6	14 Mar 2016	2	16.04	66.34	7.6	33.48	8.1	24.6	1.12
C6	14 Mar 2016	3	16.03	66.10	7.5	33.48	8.1	24.6	1.17
C6	14 Mar 2016	4	15.95	66.45	7.5	33.48	8.1	24.6	1.43
C6	14 Mar 2016	5	15.93	66.64	7.4	33.48	8.1	24.6	1.63
C6	14 Mar 2016	6	15.79	67.70	7.1	33.48	8.1	24.6	1.61
C6	14 Mar 2016	7	15.43	68.80	6.9	33.48	8.1	24.7	1.45
C6	14 Mar 2016	8	15.31	70.15	6.7	33.46	8.1	24.7	1.30
C6	14 Mar 2016	9	14.78	69.87	6.4	33.48	8.1	24.8	1.15
C6	20 Mar 2016	1	16.14	76.11	8.0	33.49	8.2	24.6	1.42
C6	20 Mar 2016	2	16.02	76.05	8.0	33.49	8.2	24.6	1.47
C6	20 Mar 2016	3	15.90	76.10	7.9	33.49	8.2	24.6	1.69
C6	20 Mar 2016	4	15.69	76.04	7.8	33.49	8.2	24.7	1.81
C6	20 Mar 2016	5	15.19	76.69	7.7	33.48	8.1	24.8	2.19
C6	20 Mar 2016	6	14.74	77.15	7.4	33.48	8.1	24.9	2.82
C6	20 Mar 2016	7	14.33	78.02	7.0	33.47	8.1	24.9	2.48
C6	20 Mar 2016	8	13.96	78.94	6.7	33.47	8.0	25.0	1.79
C6	20 Mar 2016	9	13.92	79.37	6.7	33.46	8.0	25.0	1.52
C6	20 Mar 2016	10	13.92	79.26	6.6	33.46	8.0	25.0	1.34
C6	30 Mar 2016	1	15.62	74.75	7.8	33.54	8.2	24.7	1.74
C6	30 Mar 2016	2	15.61	74.75	7.7	33.54	8.2	24.7	1.87
C6	30 Mar 2016	3	15.61	74.52	7.7	33.54	8.2	24.7	2.15
C6	30 Mar 2016	4	15.59	74.48	7.8	33.54	8.2	24.7	2.35
C6	30 Mar 2016	5	15.58	73.66	7.8	33.54	8.2	24.7	2.54
C6	30 Mar 2016	6	15.58	73.28	7.7	33.54	8.2	24.7	2.70

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C6	30 Mar 2016	7	15.50	74.06	7.4	33.54	8.2	24.7	2.67
C6	30 Mar 2016	8	14.72	78.01	6.9	33.54	8.1	24.9	2.07
C6	30 Mar 2016	9	15.08	78.64	7.0	33.50	8.1	24.8	1.73
A7	05 Mar 2016	1	16.56	78.53	7.7	33.55	8.2	24.5	0.64
A7	05 Mar 2016	2	16.56	78.31	7.7	33.55	8.2	24.5	0.68
A7	05 Mar 2016	3	16.55	78.38	7.7	33.55	8.2	24.5	0.71
A7	05 Mar 2016	4	16.56	78.32	7.7	33.55	8.2	24.5	0.77
A7	05 Mar 2016	5	16.55	78.41	7.7	33.55	8.2	24.5	0.84
A7	05 Mar 2016	6	16.54	78.49	7.7	33.55	8.2	24.5	0.89
A7	05 Mar 2016	7	16.54	78.47	7.7	33.55	8.2	24.5	0.94
A7	05 Mar 2016	8	16.54	78.47	7.7	33.55	8.2	24.5	0.97
A7	05 Mar 2016	9	16.52	78.35	7.6	33.55	8.2	24.5	1.01
A7	05 Mar 2016	10	16.51	78.36	7.6	33.55	8.2	24.5	1.08
A7	05 Mar 2016	11	16.47	78.69	7.7	33.55	8.2	24.5	1.15
A7	05 Mar 2016	12	16.38	78.99	7.6	33.55	8.2	24.5	1.15
A7	05 Mar 2016	13	16.26	79.63	7.5	33.54	8.2	24.6	1.16
A7	05 Mar 2016	14	15.80	80.46	7.3	33.53	8.2	24.7	1.12
A7	05 Mar 2016	15	15.54	79.76	7.1	33.51	8.1	24.7	1.10
A7	05 Mar 2016	16	15.29	77.96	7.0	33.51	8.1	24.8	1.05
A7	05 Mar 2016	17	15.27	77.70	6.9	33.51	8.1	24.8	1.04
A7	05 Mar 2016	18	15.06	76.95	6.8	33.50	8.1	24.8	1.00
A7	05 Mar 2016	19	14.84	71.18	6.7	33.50	8.1	24.9	0.97
A7	10 Mar 2016	1	16.10	77.29	7.6	33.51	8.2	24.6	0.80
A7	10 Mar 2016	2	16.08	77.48	7.6	33.51	8.2	24.6	0.93
A7	10 Mar 2016	3	16.08	77.45	7.6	33.51	8.2	24.6	1.00
A7	10 Mar 2016	4	16.00	77.83	7.4	33.51	8.2	24.6	1.07
A7	10 Mar 2016	5	15.78	78.04	7.2	33.50	8.2	24.7	1.12
A7	10 Mar 2016	6	14.96	80.33	6.9	33.50	8.1	24.8	1.03
A7	10 Mar 2016	7	15.04	79.83	6.6	33.47	8.1	24.8	0.88
A7	10 Mar 2016	8	14.11	80.60	6.4	33.47	8.1	25.0	0.74
A7	10 Mar 2016	9	14.33	80.31	6.3	33.46	8.1	24.9	0.67
A7	10 Mar 2016	10	13.87	79.34	6.0	33.45	8.1	25.0	0.62
A7	10 Mar 2016	11	13.74	78.56	5.9	33.44	8.1	25.0	0.59
A7	10 Mar 2016	12	13.68	78.41	6.0	33.44	8.1	25.0	0.55
A7	10 Mar 2016	13	13.60	78.58	5.9	33.44	8.1	25.1	0.55
A7	10 Mar 2016	14	13.35	78.51	5.8	33.43	8.0	25.1	0.50
A7	10 Mar 2016	15	13.30	78.83	5.8	33.43	8.0	25.1	0.46
A7	10 Mar 2016	16	13.32	78.76	5.7	33.42	8.0	25.1	0.44
A7	10 Mar 2016	17	13.24	78.98	5.8	33.43	8.0	25.1	0.43
A7	10 Mar 2016	18	13.25	78.80	5.8	33.43	8.0	25.1	0.43
A7	10 Mar 2016	19	13.21	78.24	5.7	33.43	8.0	25.1	0.42
A7	14 Mar 2016	1	15.97	75.16	7.5	33.49	8.1	24.6	1.72
A7	14 Mar 2016	2	15.97	75.38	7.4	33.49	8.1	24.6	1.80
A7	14 Mar 2016	3	15.95	75.42	7.4	33.49	8.1	24.6	1.95
A7	14 Mar 2016	4	15.87	75.62	7.3	33.49	8.1	24.6	2.08
A7	14 Mar 2016	5	15.54	75.98	6.9	33.51	8.1	24.7	1.99
A7	14 Mar 2016	6	14.79	78.88	6.5	33.51	8.1	24.9	1.67
A7	14 Mar 2016	7	14.47	79.99	6.2	33.48	8.1	24.9	1.41
A7	14 Mar 2016	8	13.96	79.33	5.9	33.47	8.0	25.0	1.19
A7	14 Mar 2016	9	13.40	77.67	5.6	33.46	8.0	25.1	0.91
A7	14 Mar 2016	10	13.05	76.59	5.4	33.44	8.0	25.2	0.72
A7	14 Mar 2016	11	12.69	75.87	5.2	33.42	8.0	25.2	0.58

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A7	14 Mar 2016	12	12.54	76.07	5.1	33.42	7.9	25.3	0.46
A7	14 Mar 2016	13	12.50	76.32	5.1	33.42	7.9	25.3	0.42
A7	14 Mar 2016	14	12.47	76.24	5.1	33.42	7.9	25.3	0.38
A7	14 Mar 2016	15	12.51	76.61	5.1	33.42	7.9	25.3	0.34
A7	14 Mar 2016	16	12.44	74.15	5.0	33.43	7.9	25.3	0.34
A7	14 Mar 2016	17	12.43	72.91	5.0	33.43	7.9	25.3	0.34
A7	14 Mar 2016	18	12.44	71.56	5.0	33.43	7.9	25.3	0.35
A7	14 Mar 2016	19	12.45	69.64	5.0	33.43	7.9	25.3	0.36
A7	20 Mar 2016	1	15.82	77.87	8.3	33.48	8.1	24.6	3.81
A7	20 Mar 2016	2	15.78	78.26	8.3	33.48	8.1	24.6	4.08
A7	20 Mar 2016	3	15.78	78.04	8.2	33.48	8.1	24.6	4.18
A7	20 Mar 2016	4	15.42	77.32	7.9	33.48	8.1	24.7	4.91
A7	20 Mar 2016	5	14.69	77.70	7.3	33.47	8.1	24.9	4.99
A7	20 Mar 2016	6	14.26	78.22	7.0	33.46	8.0	24.9	4.27
A7	20 Mar 2016	7	14.12	78.55	6.8	33.45	8.0	25.0	3.80
A7	20 Mar 2016	8	13.95	78.63	6.7	33.45	8.0	25.0	3.72
A7	20 Mar 2016	9	13.78	79.41	6.5	33.45	8.0	25.0	3.32
A7	20 Mar 2016	10	13.71	79.75	6.4	33.45	8.0	25.1	3.02
A7	20 Mar 2016	11	13.63	80.10	6.3	33.45	8.0	25.1	2.93
A7	20 Mar 2016	12	13.51	80.44	6.1	33.45	8.0	25.1	2.58
A7	20 Mar 2016	13	13.28	80.36	5.9	33.46	8.0	25.1	2.13
A7	20 Mar 2016	14	13.14	79.80	5.8	33.46	7.9	25.2	1.89
A7	20 Mar 2016	15	12.97	78.94	5.6	33.46	7.9	25.2	1.68
A7	20 Mar 2016	16	12.91	78.28	5.5	33.46	7.9	25.2	1.59
A7	20 Mar 2016	17	12.85	77.63	5.5	33.46	7.9	25.2	1.62
A7	20 Mar 2016	18	12.82	76.87	5.5	33.46	7.9	25.2	1.57
A7	20 Mar 2016	19	12.81	74.83	5.4	33.46	7.9	25.2	1.69
A7	30 Mar 2016	1	15.55	76.10	7.9	33.53	8.2	24.7	2.08
A7	30 Mar 2016	2	15.55	76.00	7.9	33.53	8.2	24.7	2.29
A7	30 Mar 2016	3	15.55	75.83	7.9	33.53	8.2	24.7	2.62
A7	30 Mar 2016	4	15.54	76.06	7.8	33.53	8.2	24.7	3.24
A7	30 Mar 2016	5	15.54	75.95	7.8	33.53	8.2	24.7	3.56
A7	30 Mar 2016	6	15.54	75.91	7.8	33.53	8.2	24.7	3.66
A7	30 Mar 2016	7	15.47	75.93	7.7	33.53	8.2	24.7	3.81
A7	30 Mar 2016	8	15.36	75.86	7.6	33.53	8.2	24.8	3.73
A7	30 Mar 2016	9	15.25	76.21	7.2	33.52	8.2	24.8	3.52
A7	30 Mar 2016	10	14.43	77.90	6.7	33.53	8.1	25.0	2.93
A7	30 Mar 2016	11	13.70	80.72	6.1	33.51	8.1	25.1	2.14
A7	30 Mar 2016	12	13.32	82.76	5.8	33.50	8.0	25.2	1.81
A7	30 Mar 2016	13	13.19	83.11	5.6	33.49	8.0	25.2	1.87
A7	30 Mar 2016	14	13.14	82.93	5.6	33.49	8.0	25.2	1.75
A7	30 Mar 2016	15	13.10	83.31	5.6	33.49	8.0	25.2	1.65
A7	30 Mar 2016	16	13.10	83.67	5.6	33.49	8.0	25.2	1.70
A7	30 Mar 2016	17	13.09	83.99	5.6	33.49	8.0	25.2	1.58
A7	30 Mar 2016	18	13.09	84.00	5.5	33.49	8.0	25.2	1.72
A7	30 Mar 2016	19	13.04	84.25	5.5	33.49	8.0	25.2	1.58
A7	30 Mar 2016	20	13.03	84.44	5.5	33.50	8.0	25.2	1.52
C7	05 Mar 2016	1	17.07	85.23	8.1	33.57	8.2	24.4	0.50
C7	05 Mar 2016	2	17.05	85.22	8.0	33.57	8.2	24.4	0.50
C7	05 Mar 2016	3	16.99	85.05	8.0	33.56	8.2	24.4	0.60
C7	05 Mar 2016	4	16.98	83.97	7.9	33.56	8.2	24.4	0.76
C7	05 Mar 2016	5	16.92	82.86	7.9	33.56	8.2	24.4	0.91

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C7	05 Mar 2016	6	16.89	82.08	8.0	33.56	8.2	24.4	0.95
C7	05 Mar 2016	7	16.64	81.01	7.8	33.55	8.2	24.5	1.30
C7	05 Mar 2016	8	16.53	80.20	7.8	33.55	8.2	24.5	1.48
C7	05 Mar 2016	9	16.34	79.18	7.7	33.54	8.2	24.5	1.60
C7	05 Mar 2016	10	16.35	79.18	7.7	33.54	8.2	24.5	1.69
C7	05 Mar 2016	11	16.15	78.80	7.5	33.54	8.2	24.6	1.67
C7	05 Mar 2016	12	16.02	78.36	7.4	33.53	8.2	24.6	1.61
C7	05 Mar 2016	13	15.82	77.77	7.3	33.53	8.2	24.7	1.52
C7	05 Mar 2016	14	15.60	76.65	7.1	33.52	8.2	24.7	1.37
C7	05 Mar 2016	15	15.38	74.01	6.9	33.51	8.1	24.7	1.22
C7	05 Mar 2016	16	15.23	68.36	6.8	33.51	8.1	24.8	1.05
C7	05 Mar 2016	17	15.35	63.63	6.9	33.50	8.1	24.7	1.00
C7	05 Mar 2016	18	15.26	60.40	6.9	33.51	8.1	24.8	1.01
C7	10 Mar 2016	1	16.28	70.50	7.6	33.48	8.2	24.5	0.79
C7	10 Mar 2016	2	15.97	70.62	7.5	33.49	8.2	24.6	0.86
C7	10 Mar 2016	3	15.90	70.76	7.4	33.49	8.1	24.6	0.91
C7	10 Mar 2016	4	15.77	70.79	7.4	33.49	8.1	24.6	0.93
C7	10 Mar 2016	5	15.66	70.56	7.4	33.49	8.1	24.7	0.92
C7	10 Mar 2016	6	15.64	71.41	7.3	33.49	8.1	24.7	0.95
C7	10 Mar 2016	7	15.60	71.00	7.2	33.49	8.1	24.7	1.02
C7	10 Mar 2016	8	15.54	71.14	7.1	33.50	8.1	24.7	1.12
C7	10 Mar 2016	9	15.48	72.12	7.0	33.50	8.1	24.7	1.14
C7	10 Mar 2016	10	15.38	73.60	6.9	33.50	8.1	24.7	1.10
C7	10 Mar 2016	11	15.26	74.37	6.8	33.49	8.1	24.8	1.01
C7	10 Mar 2016	12	15.03	76.88	6.6	33.49	8.1	24.8	0.88
C7	10 Mar 2016	13	14.89	77.63	6.5	33.49	8.1	24.8	0.78
C7	10 Mar 2016	14	14.83	77.60	6.4	33.48	8.1	24.8	0.72
C7	10 Mar 2016	15	14.79	76.98	6.4	33.48	8.1	24.8	0.69
C7	10 Mar 2016	16	14.76	77.15	6.3	33.48	8.1	24.9	0.61
C7	10 Mar 2016	17	14.71	77.20	6.3	33.48	8.1	24.9	0.59
C7	10 Mar 2016	18	14.68	76.45	6.3	33.48	8.1	24.9	0.58
C7	10 Mar 2016	19	14.68	75.97	6.2	33.48	8.1	24.9	0.59
C7	14 Mar 2016	1	16.30	70.62	7.7	33.48	8.1	24.5	2.33
C7	14 Mar 2016	2	16.30	70.67	7.7	33.48	8.1	24.5	2.43
C7	14 Mar 2016	3	16.28	70.60	7.7	33.48	8.1	24.5	2.60
C7	14 Mar 2016	4	16.27	71.31	7.6	33.48	8.1	24.5	2.83
C7	14 Mar 2016	5	16.21	70.58	7.6	33.48	8.1	24.5	3.38
C7	14 Mar 2016	6	16.06	72.61	7.4	33.49	8.1	24.6	3.16
C7	14 Mar 2016	7	15.87	73.45	7.3	33.49	8.1	24.6	2.57
C7	14 Mar 2016	8	15.50	74.81	7.0	33.49	8.1	24.7	2.27
C7	14 Mar 2016	9	15.31	73.80	6.9	33.48	8.1	24.7	1.93
C7	14 Mar 2016	10	15.16	73.90	6.8	33.49	8.1	24.8	1.85
C7	14 Mar 2016	11	14.89	73.92	6.5	33.48	8.1	24.8	1.67
C7	14 Mar 2016	12	14.64	73.04	6.3	33.48	8.1	24.9	1.51
C7	14 Mar 2016	13	14.43	73.11	6.2	33.48	8.0	24.9	1.35
C7	14 Mar 2016	14	14.48	72.55	6.1	33.47	8.0	24.9	1.29
C7	14 Mar 2016	15	14.06	70.64	5.8	33.47	8.0	25.0	1.15
C7	14 Mar 2016	16	13.88	67.02	5.7	33.46	8.0	25.0	1.03
C7	14 Mar 2016	17	13.87	64.54	5.7	33.46	8.0	25.0	0.93
C7	14 Mar 2016	18	14.00	63.34	5.8	33.46	8.0	25.0	0.95
C7	20 Mar 2016	1	16.17	75.19	7.9	33.48	8.1	24.5	3.57
C7	20 Mar 2016	2	15.88	75.16	7.7	33.49	8.1	24.6	3.90

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C7	20 Mar 2016	3	15.21	76.51	7.2	33.48	8.1	24.8	4.21
C7	20 Mar 2016	4	14.31	79.73	6.9	33.47	8.1	24.9	3.94
C7	20 Mar 2016	5	14.08	80.91	6.7	33.46	8.0	25.0	3.69
C7	20 Mar 2016	6	13.98	81.63	6.6	33.45	8.0	25.0	3.20
C7	20 Mar 2016	7	13.83	82.28	6.5	33.45	8.0	25.0	3.20
C7	20 Mar 2016	8	13.76	82.56	6.5	33.45	8.0	25.0	3.01
C7	20 Mar 2016	9	13.72	82.53	6.4	33.45	8.0	25.1	2.81
C7	20 Mar 2016	10	13.58	82.57	6.2	33.46	8.0	25.1	2.65
C7	20 Mar 2016	11	13.43	82.49	6.0	33.47	8.0	25.1	2.40
C7	20 Mar 2016	12	13.28	82.44	5.8	33.47	8.0	25.2	2.10
C7	20 Mar 2016	13	13.18	82.47	5.7	33.47	7.9	25.2	1.87
C7	20 Mar 2016	14	13.10	82.33	5.6	33.47	7.9	25.2	1.81
C7	20 Mar 2016	15	13.04	82.21	5.6	33.47	7.9	25.2	1.69
C7	20 Mar 2016	16	12.80	81.35	5.5	33.47	7.9	25.2	1.54
C7	20 Mar 2016	17	12.55	79.52	5.4	33.48	7.9	25.3	1.46
C7	20 Mar 2016	18	12.66	77.56	5.4	33.47	7.9	25.3	1.41
C7	20 Mar 2016	19	12.51	76.73	5.3	33.48	7.9	25.3	1.40
C7	30 Mar 2016	1	15.84	76.95	8.0	33.54	8.2	24.7	2.17
C7	30 Mar 2016	2	15.84	76.79	8.0	33.54	8.2	24.7	2.22
C7	30 Mar 2016	3	15.84	76.83	8.0	33.54	8.2	24.7	2.42
C7	30 Mar 2016	4	15.83	76.88	8.1	33.54	8.2	24.7	2.67
C7	30 Mar 2016	5	15.82	77.10	8.0	33.54	8.2	24.7	2.77
C7	30 Mar 2016	6	15.79	77.68	7.9	33.54	8.2	24.7	2.95
C7	30 Mar 2016	7	15.78	78.47	8.0	33.53	8.2	24.7	3.04
C7	30 Mar 2016	8	15.76	79.40	7.9	33.53	8.2	24.7	2.94
C7	30 Mar 2016	9	15.75	80.42	7.9	33.53	8.2	24.7	2.93
C7	30 Mar 2016	10	15.72	80.96	7.7	33.53	8.2	24.7	2.85
C7	30 Mar 2016	11	15.40	81.67	7.5	33.53	8.2	24.8	2.54
C7	30 Mar 2016	12	15.11	82.10	7.2	33.53	8.2	24.8	2.18
C7	30 Mar 2016	13	14.87	82.09	7.0	33.52	8.1	24.9	1.90
C7	30 Mar 2016	14	14.52	82.36	6.8	33.52	8.1	24.9	1.61
C7	30 Mar 2016	15	14.56	82.26	6.5	33.51	8.1	24.9	1.50
C7	30 Mar 2016	16	13.83	82.73	6.1	33.52	8.1	25.1	1.26
C7	30 Mar 2016	17	13.56	82.81	5.8	33.52	8.0	25.1	0.99
C7	30 Mar 2016	18	13.55	82.54	5.8	33.52	8.0	25.1	0.89
C8	05 Mar 2016	1	17.04	84.46	8.1	33.57	8.2	24.4	0.43
C8	05 Mar 2016	2	16.92	83.43	8.0	33.56	8.2	24.4	0.52
C8	05 Mar 2016	3	16.83	76.14	7.9	33.56	8.2	24.4	0.77
C8	05 Mar 2016	4	16.76	71.44	7.8	33.55	8.2	24.5	0.98
C8	05 Mar 2016	5	16.56	69.46	7.7	33.55	8.2	24.5	1.12
C8	05 Mar 2016	6	16.31	72.04	7.8	33.54	8.2	24.6	1.27
C8	05 Mar 2016	7	16.16	76.01	7.8	33.53	8.2	24.6	1.41
C8	05 Mar 2016	8	16.12	78.69	7.8	33.53	8.2	24.6	1.48
C8	05 Mar 2016	9	16.06	79.39	7.8	33.53	8.2	24.6	1.56
C8	05 Mar 2016	10	16.02	80.46	7.8	33.53	8.2	24.6	1.65
C8	05 Mar 2016	11	15.93	80.18	7.6	33.53	8.2	24.6	1.74
C8	05 Mar 2016	12	15.74	77.39	7.4	33.52	8.2	24.7	1.71
C8	05 Mar 2016	13	15.62	74.86	7.3	33.52	8.2	24.7	1.60
C8	05 Mar 2016	14	15.57	73.34	7.2	33.52	8.2	24.7	1.50
C8	05 Mar 2016	15	15.53	72.06	7.1	33.52	8.1	24.7	1.44
C8	05 Mar 2016	16	15.31	71.36	7.0	33.52	8.1	24.8	1.38
C8	05 Mar 2016	17	15.27	71.36	7.0	33.51	8.1	24.8	1.34
C8	05 Mar 2016	18	15.23	67.73	6.9	33.51	8.1	24.8	1.30

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	05 Mar 2016	19	15.23	62.07	6.9	33.51	8.1	24.8	1.30
C8	10 Mar 2016	1	16.23	70.22	7.6	33.39	8.2	24.5	0.86
C8	10 Mar 2016	2	16.24	69.29	7.6	33.44	8.2	24.5	0.91
C8	10 Mar 2016	3	16.24	72.21	7.6	33.50	8.2	24.5	1.20
C8	10 Mar 2016	4	16.24	73.54	7.6	33.52	8.2	24.6	1.50
C8	10 Mar 2016	5	16.15	74.32	7.5	33.53	8.2	24.6	1.63
C8	10 Mar 2016	6	15.93	75.66	7.4	33.52	8.2	24.6	1.64
C8	10 Mar 2016	7	15.91	75.13	7.4	33.52	8.2	24.6	1.67
C8	10 Mar 2016	8	15.89	74.96	7.3	33.52	8.2	24.6	1.72
C8	10 Mar 2016	9	15.73	73.66	7.1	33.50	8.1	24.7	1.63
C8	10 Mar 2016	10	15.53	69.36	7.0	33.49	8.1	24.7	1.47
C8	10 Mar 2016	11	15.47	69.11	6.9	33.49	8.1	24.7	1.30
C8	10 Mar 2016	12	15.45	69.42	6.9	33.49	8.1	24.7	1.29
C8	10 Mar 2016	13	15.28	69.07	6.8	33.49	8.1	24.7	1.22
C8	10 Mar 2016	14	15.18	68.74	6.7	33.49	8.1	24.8	1.14
C8	10 Mar 2016	15	15.14	68.83	6.7	33.49	8.1	24.8	1.09
C8	10 Mar 2016	16	14.98	68.32	6.6	33.49	8.1	24.8	1.03
C8	10 Mar 2016	17	14.79	67.46	6.5	33.48	8.1	24.8	0.97
C8	10 Mar 2016	18	14.68	65.51	6.4	33.48	8.1	24.9	0.97
C8	10 Mar 2016	19	14.65	54.84	6.4	33.48	8.1	24.9	1.10
C8	14 Mar 2016	1	16.55	65.28	7.8	33.38	8.1	24.4	1.99
C8	14 Mar 2016	2	16.56	65.47	7.8	33.43	8.1	24.4	2.18
C8	14 Mar 2016	3	16.53	66.96	7.8	33.49	8.1	24.5	2.64
C8	14 Mar 2016	4	16.51	69.19	7.8	33.50	8.2	24.5	3.01
C8	14 Mar 2016	5	16.48	70.02	7.7	33.51	8.2	24.5	3.09
C8	14 Mar 2016	6	16.46	70.08	7.6	33.51	8.1	24.5	2.88
C8	14 Mar 2016	7	16.40	70.59	7.7	33.51	8.1	24.5	2.64
C8	14 Mar 2016	8	16.24	74.35	7.4	33.51	8.1	24.5	2.50
C8	14 Mar 2016	9	15.75	75.35	7.2	33.50	8.1	24.7	2.26
C8	14 Mar 2016	10	15.67	73.73	7.1	33.50	8.1	24.7	2.17
C8	14 Mar 2016	11	15.57	72.28	7.1	33.49	8.1	24.7	2.10
C8	14 Mar 2016	12	15.47	71.39	7.0	33.49	8.1	24.7	1.94
C8	14 Mar 2016	13	15.25	69.79	6.8	33.48	8.1	24.8	1.80
C8	14 Mar 2016	14	14.90	69.04	6.4	33.48	8.1	24.8	1.68
C8	14 Mar 2016	15	14.42	64.02	6.1	33.48	8.1	24.9	1.54
C8	14 Mar 2016	16	14.11	53.43	6.0	33.46	8.0	25.0	1.51
C8	14 Mar 2016	17	14.15	52.61	6.0	33.46	8.0	25.0	1.51
C8	14 Mar 2016	18	14.10	48.19	6.0	33.46	8.0	25.0	1.57
C8	20 Mar 2016	1	15.21	77.24	7.5	33.47	8.1	24.7	3.95
C8	20 Mar 2016	2	15.17	77.53	7.4	33.47	8.1	24.8	3.88
C8	20 Mar 2016	3	14.92	77.95	7.2	33.48	8.1	24.8	3.98
C8	20 Mar 2016	4	14.40	78.73	6.9	33.48	8.1	24.9	3.67
C8	20 Mar 2016	5	14.16	81.74	6.7	33.48	8.0	25.0	3.26
C8	20 Mar 2016	6	14.11	81.77	6.6	33.47	8.0	25.0	3.30
C8	20 Mar 2016	7	14.04	81.53	6.6	33.47	8.0	25.0	3.33
C8	20 Mar 2016	8	13.95	81.96	6.5	33.47	8.0	25.0	3.32
C8	20 Mar 2016	9	13.89	82.17	6.5	33.47	8.0	25.0	3.09
C8	20 Mar 2016	10	13.88	82.36	6.5	33.47	8.0	25.0	2.98
C8	20 Mar 2016	11	13.80	82.34	6.3	33.47	8.0	25.0	2.90
C8	20 Mar 2016	12	13.61	82.81	6.2	33.47	8.0	25.1	2.91
C8	20 Mar 2016	13	13.60	83.08	6.1	33.47	8.0	25.1	2.53
C8	20 Mar 2016	14	13.47	82.75	5.9	33.47	8.0	25.1	2.32

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	20 Mar 2016	15	13.20	83.11	5.8	33.47	8.0	25.2	2.12
C8	20 Mar 2016	16	12.97	82.35	5.6	33.47	7.9	25.2	1.98
C8	20 Mar 2016	17	12.78	80.52	5.4	33.47	7.9	25.3	1.83
C8	20 Mar 2016	18	12.34	78.85	5.2	33.49	7.9	25.4	1.62
C8	20 Mar 2016	19	12.07	70.46	5.1	33.49	7.9	25.4	1.67
C8	20 Mar 2016	20	12.06	63.88	5.1	33.48	7.9	25.4	1.74
C8	30 Mar 2016	1	15.90	75.33	8.1	33.54	8.2	24.6	1.36
C8	30 Mar 2016	2	15.90	75.13	8.1	33.54	8.2	24.6	1.45
C8	30 Mar 2016	3	15.88	75.12	8.0	33.54	8.2	24.7	1.56
C8	30 Mar 2016	4	15.85	75.51	8.1	33.54	8.2	24.7	1.89
C8	30 Mar 2016	5	15.81	77.14	8.0	33.54	8.2	24.7	2.17
C8	30 Mar 2016	6	15.74	79.29	7.9	33.53	8.2	24.7	2.31
C8	30 Mar 2016	7	15.61	80.47	7.6	33.52	8.2	24.7	2.27
C8	30 Mar 2016	8	15.13	82.08	7.4	33.53	8.2	24.8	2.09
C8	30 Mar 2016	9	15.01	82.40	7.3	33.52	8.1	24.8	2.01
C8	30 Mar 2016	10	14.97	82.33	7.2	33.52	8.1	24.8	1.97
C8	30 Mar 2016	11	14.94	82.24	7.2	33.52	8.1	24.8	1.89
C8	30 Mar 2016	12	14.93	82.33	7.3	33.52	8.1	24.8	1.93
C8	30 Mar 2016	13	14.89	82.33	7.1	33.52	8.1	24.9	1.86
C8	30 Mar 2016	14	14.75	82.14	7.0	33.52	8.1	24.9	1.81
C8	30 Mar 2016	15	14.66	82.07	7.0	33.52	8.1	24.9	1.80
C8	30 Mar 2016	16	14.55	81.62	6.8	33.52	8.1	24.9	1.77
C8	30 Mar 2016	17	14.00	81.02	6.4	33.53	8.1	25.1	1.54
C8	30 Mar 2016	18	13.85	80.55	6.3	33.52	8.1	25.1	1.36

NA = not available

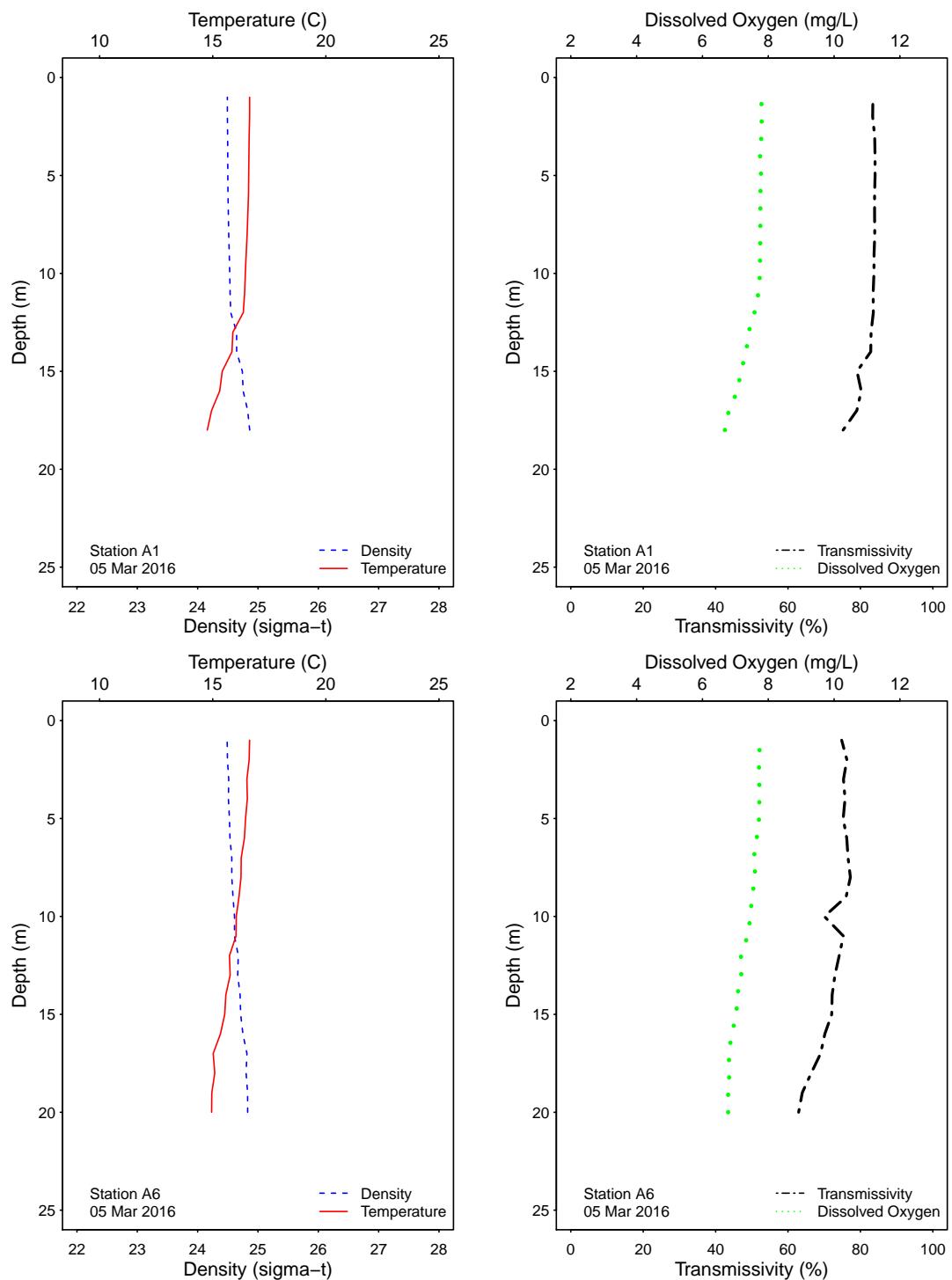


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

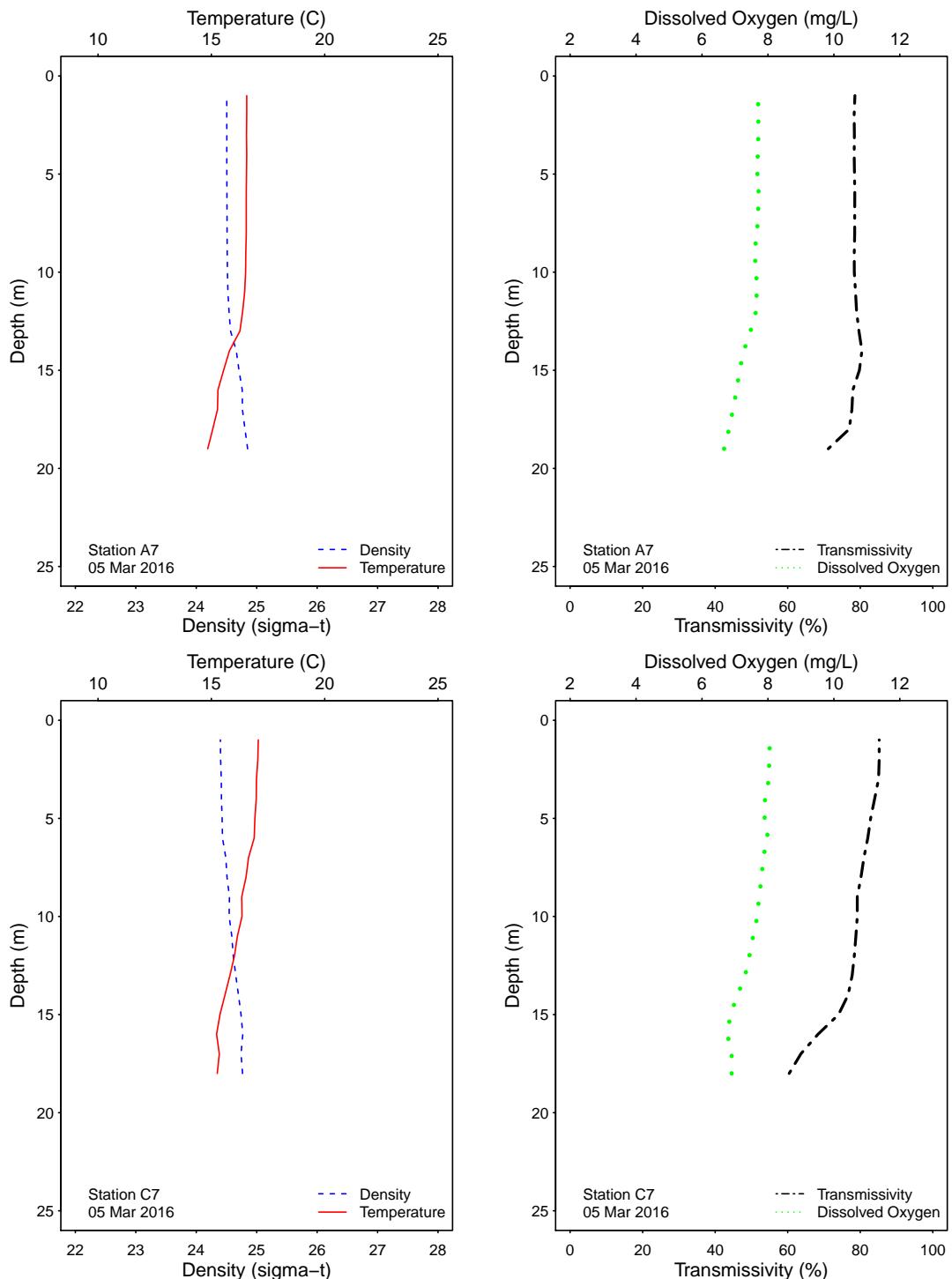


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

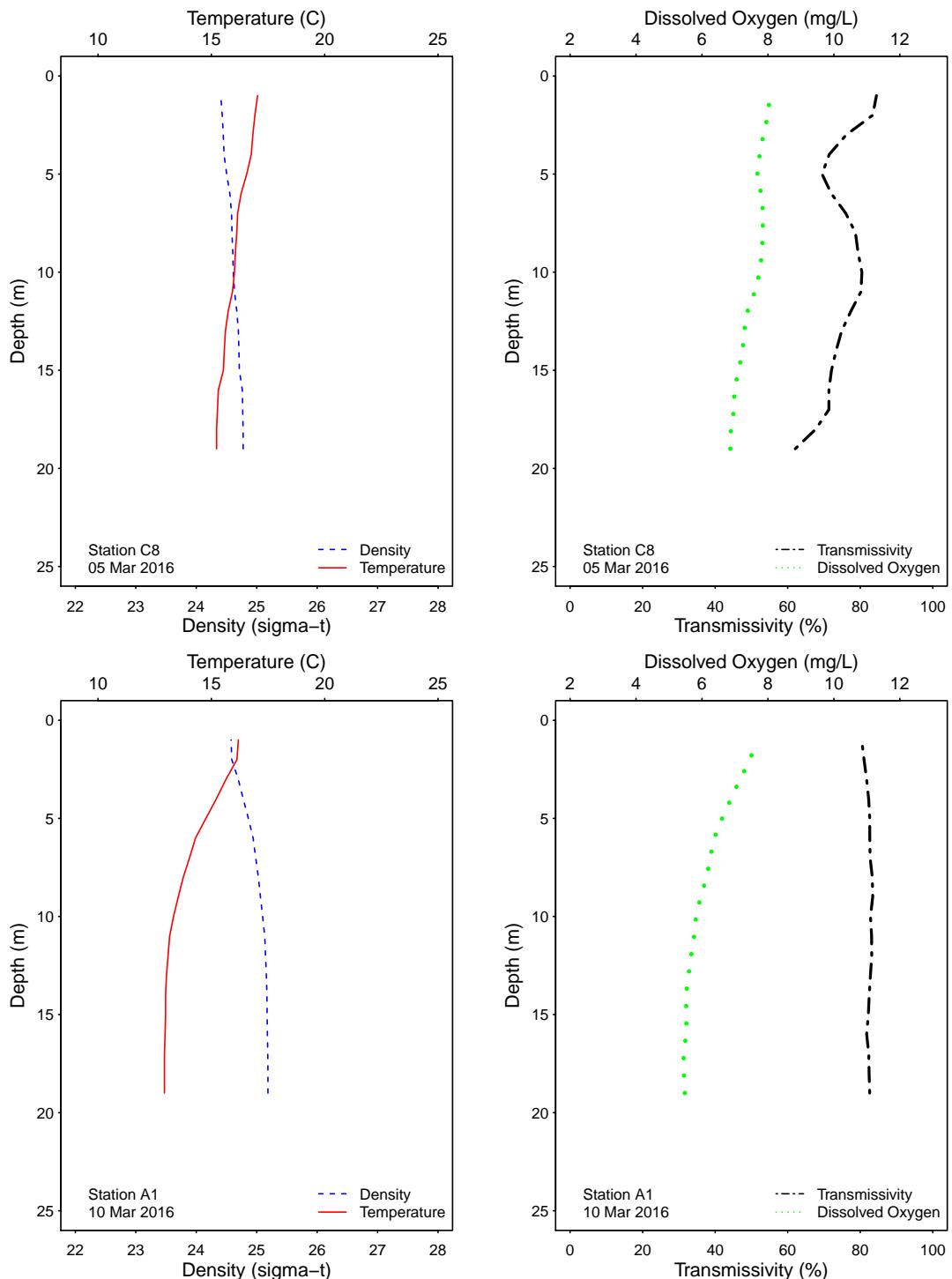


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

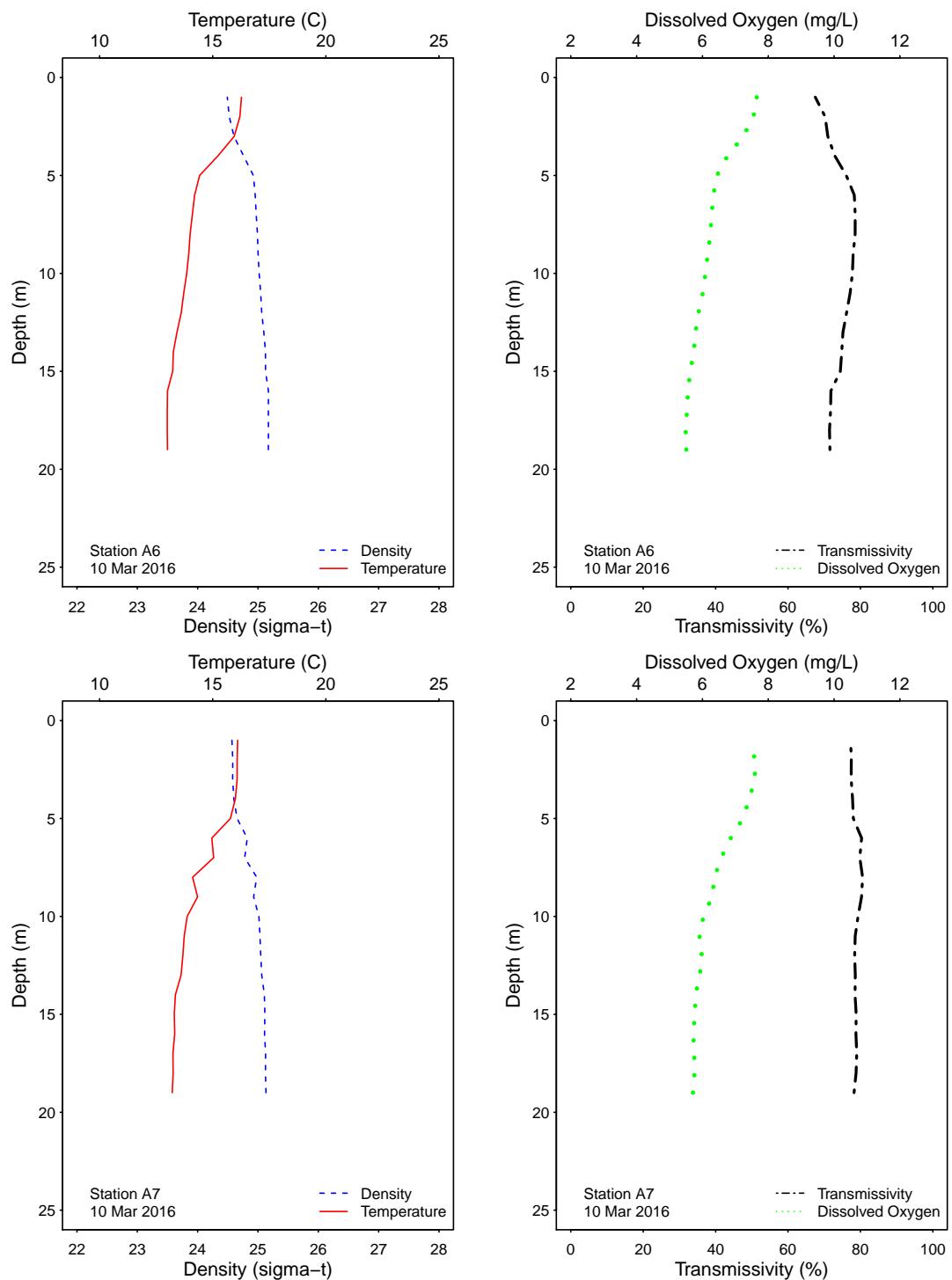


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

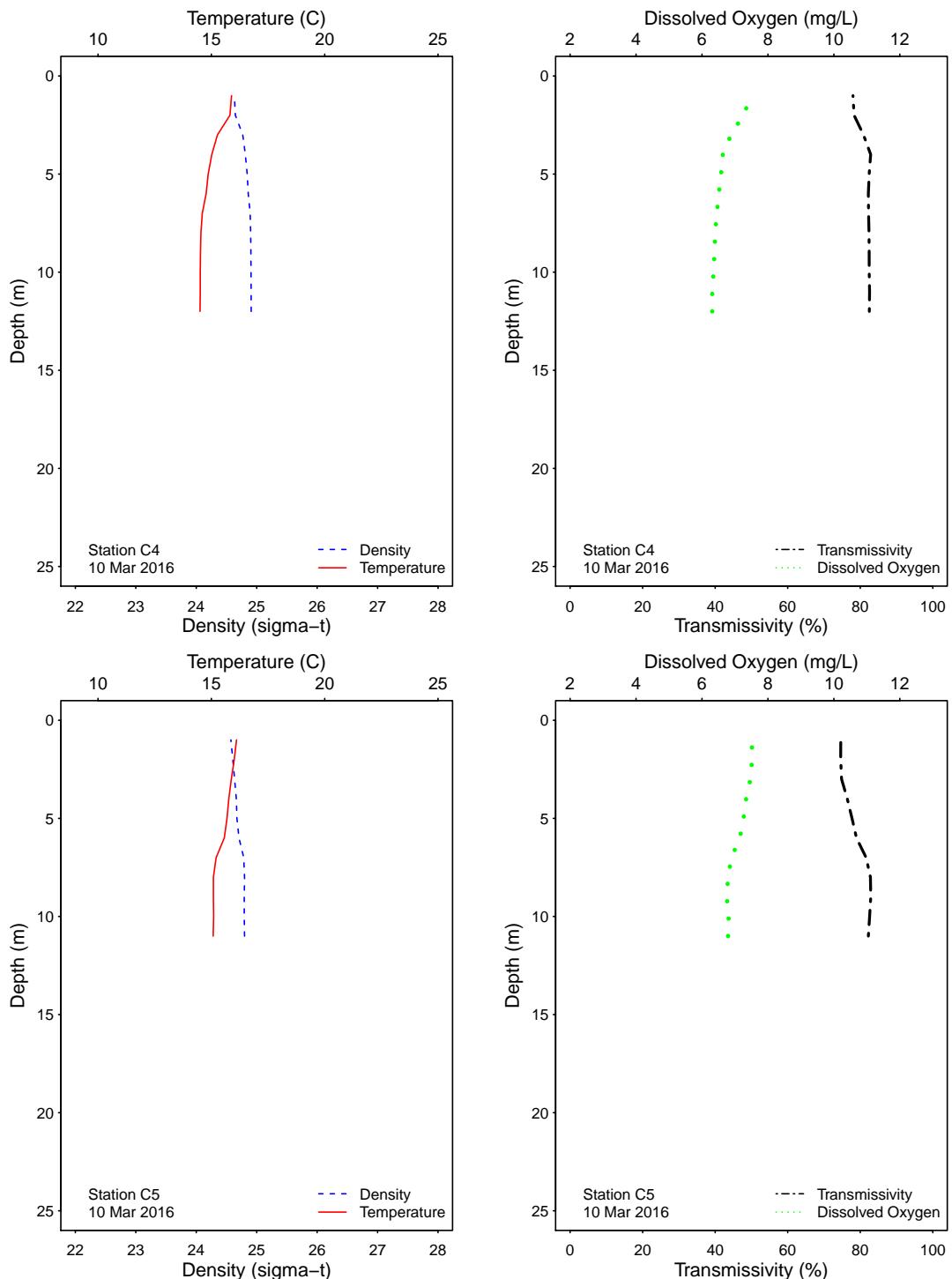


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

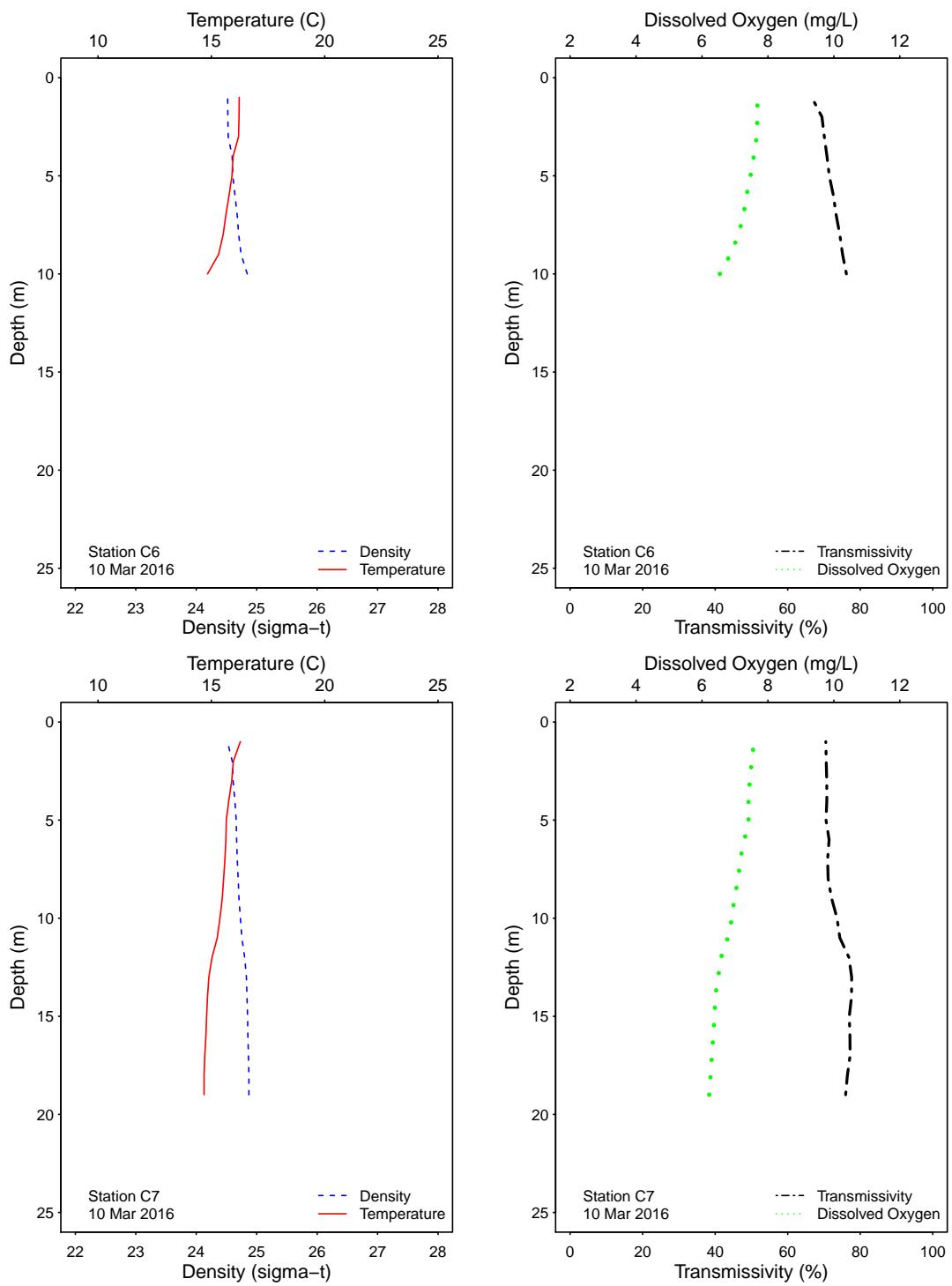


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

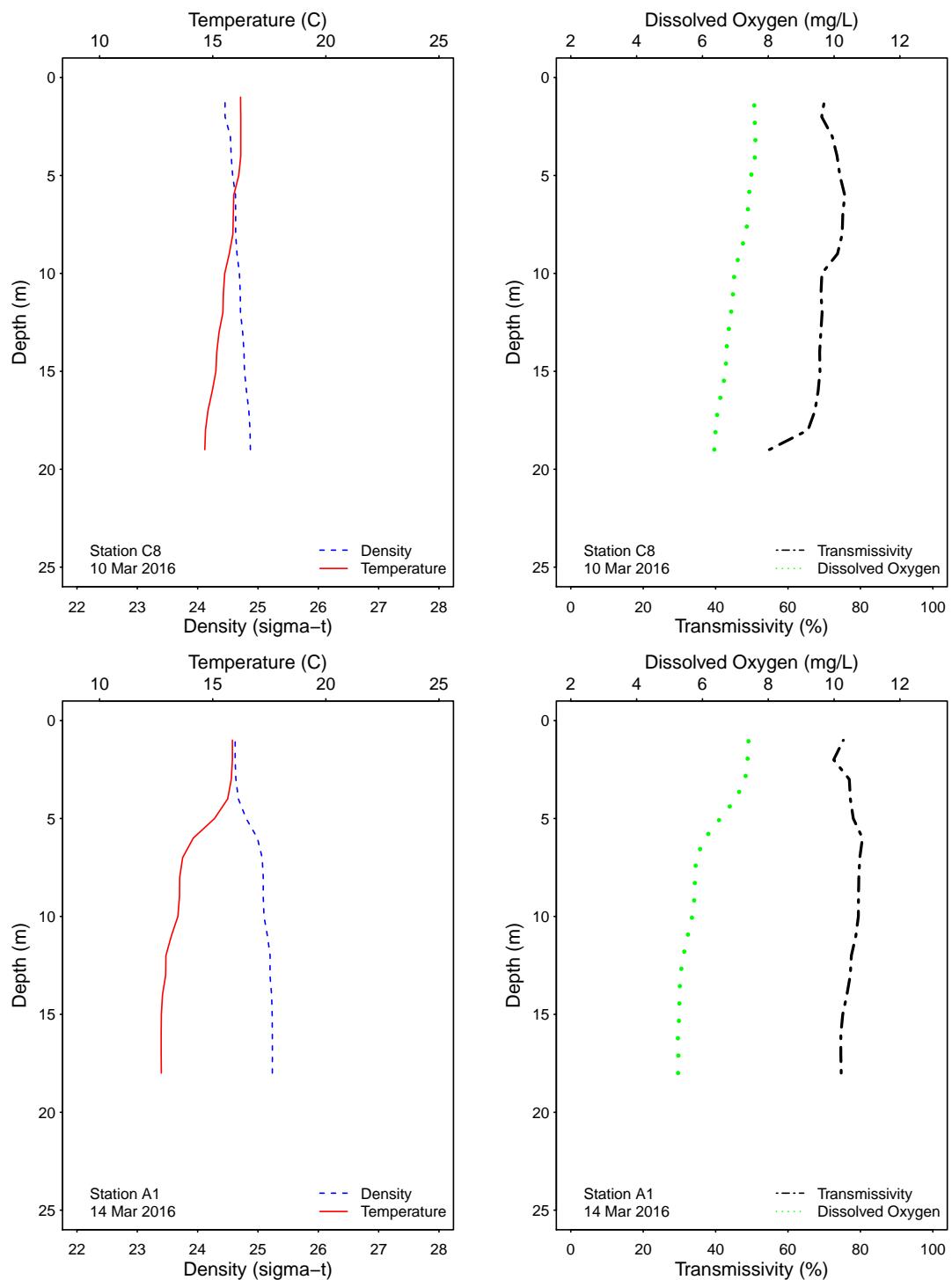


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

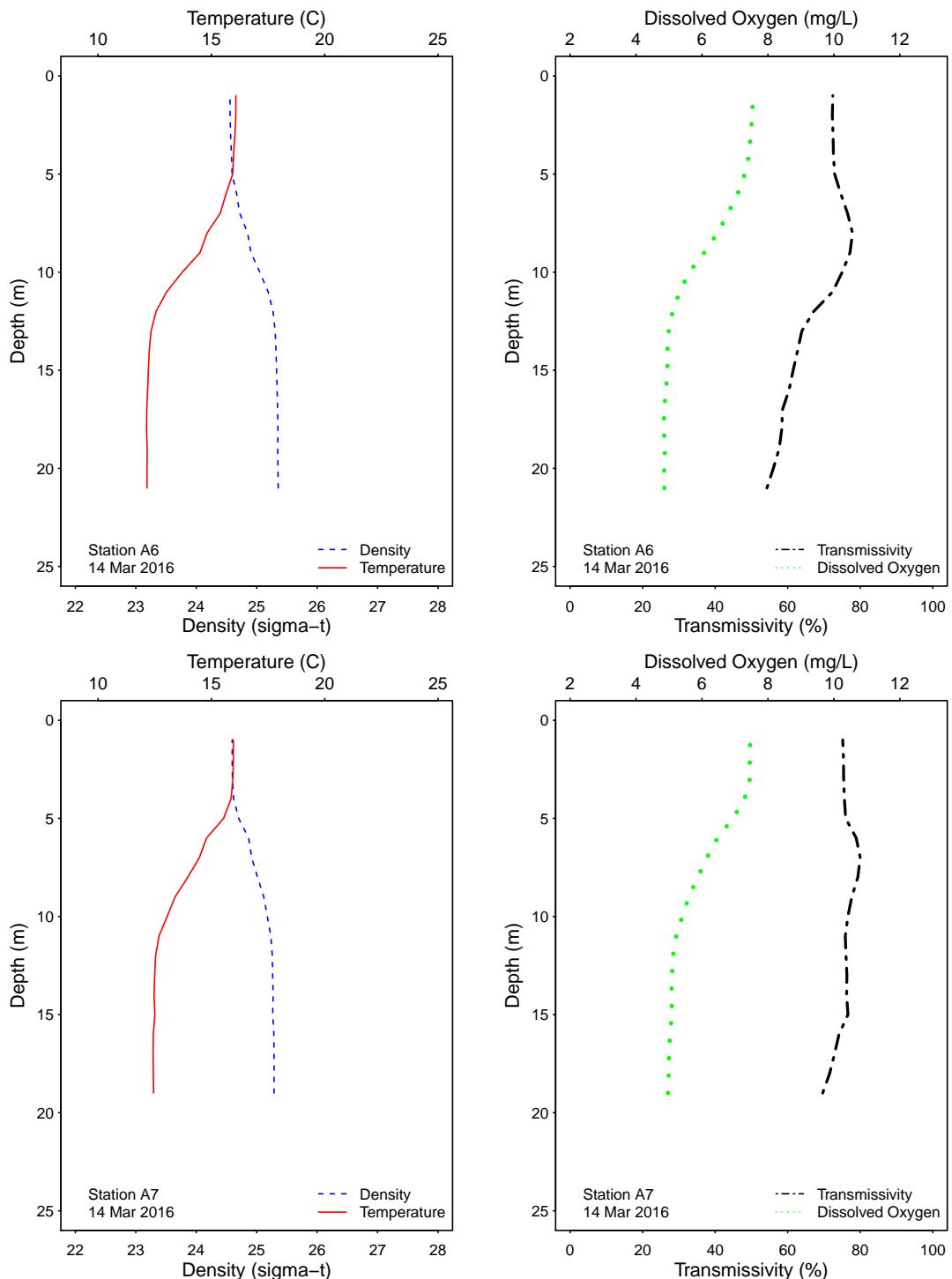


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

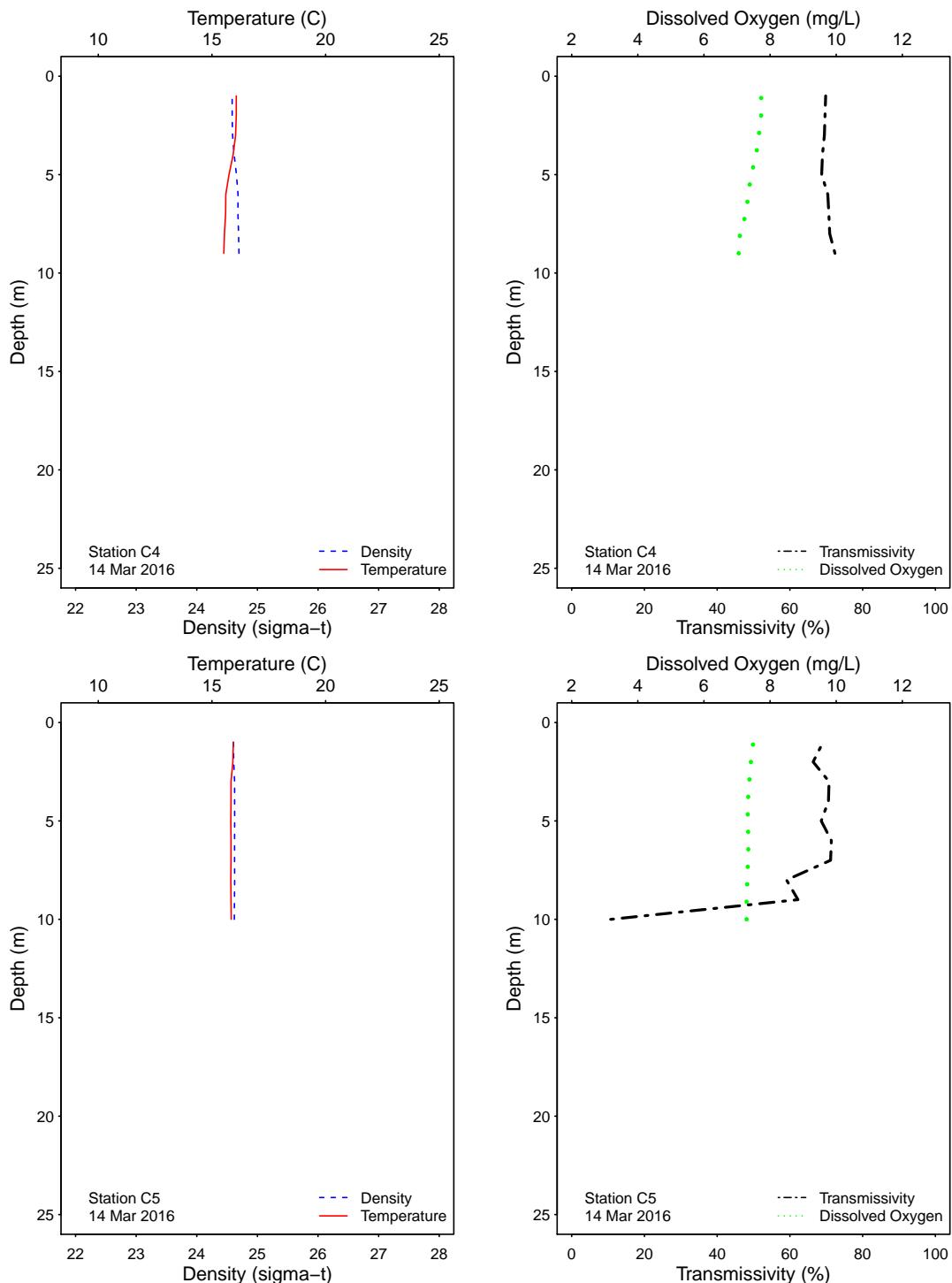


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

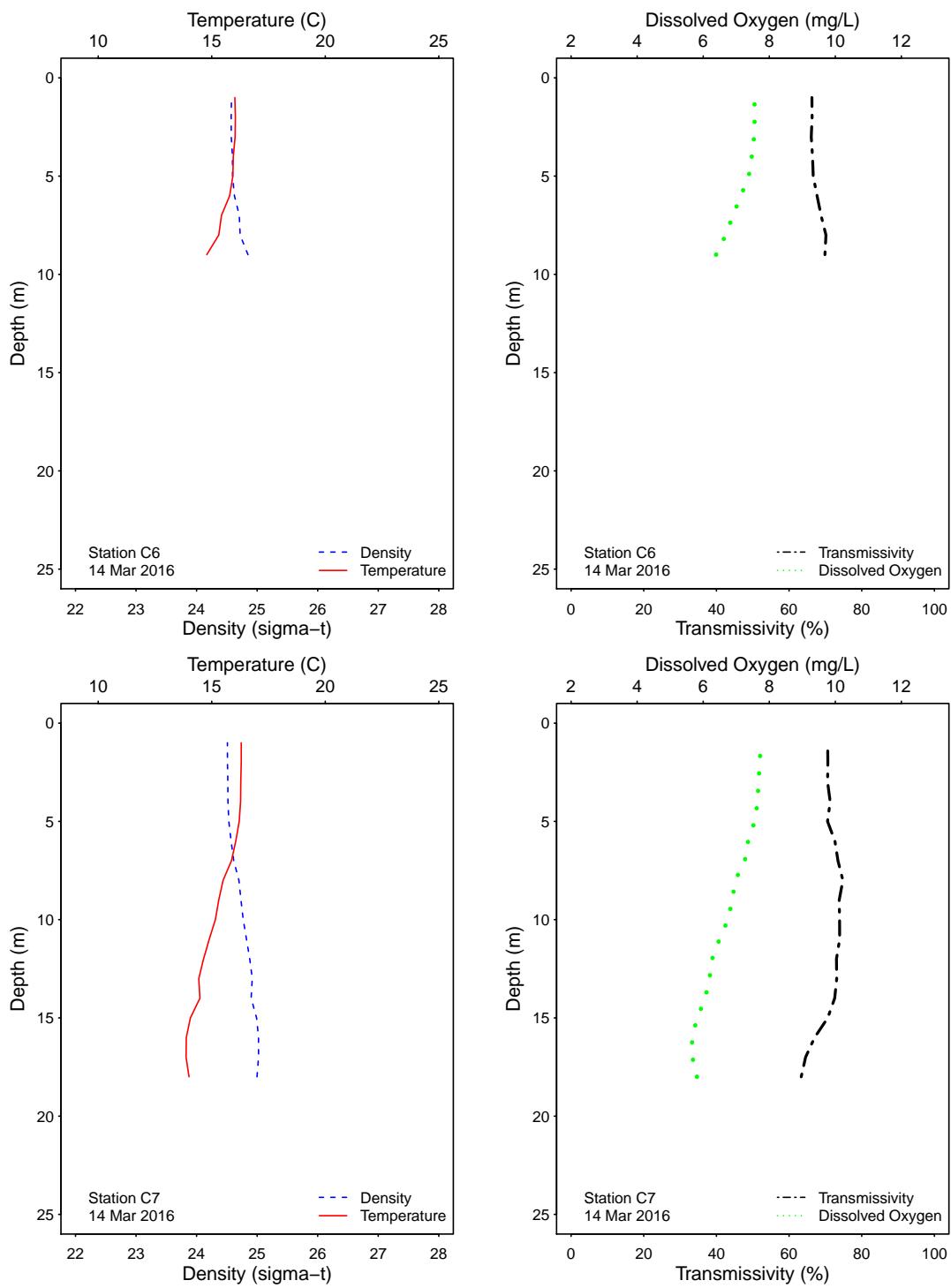


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

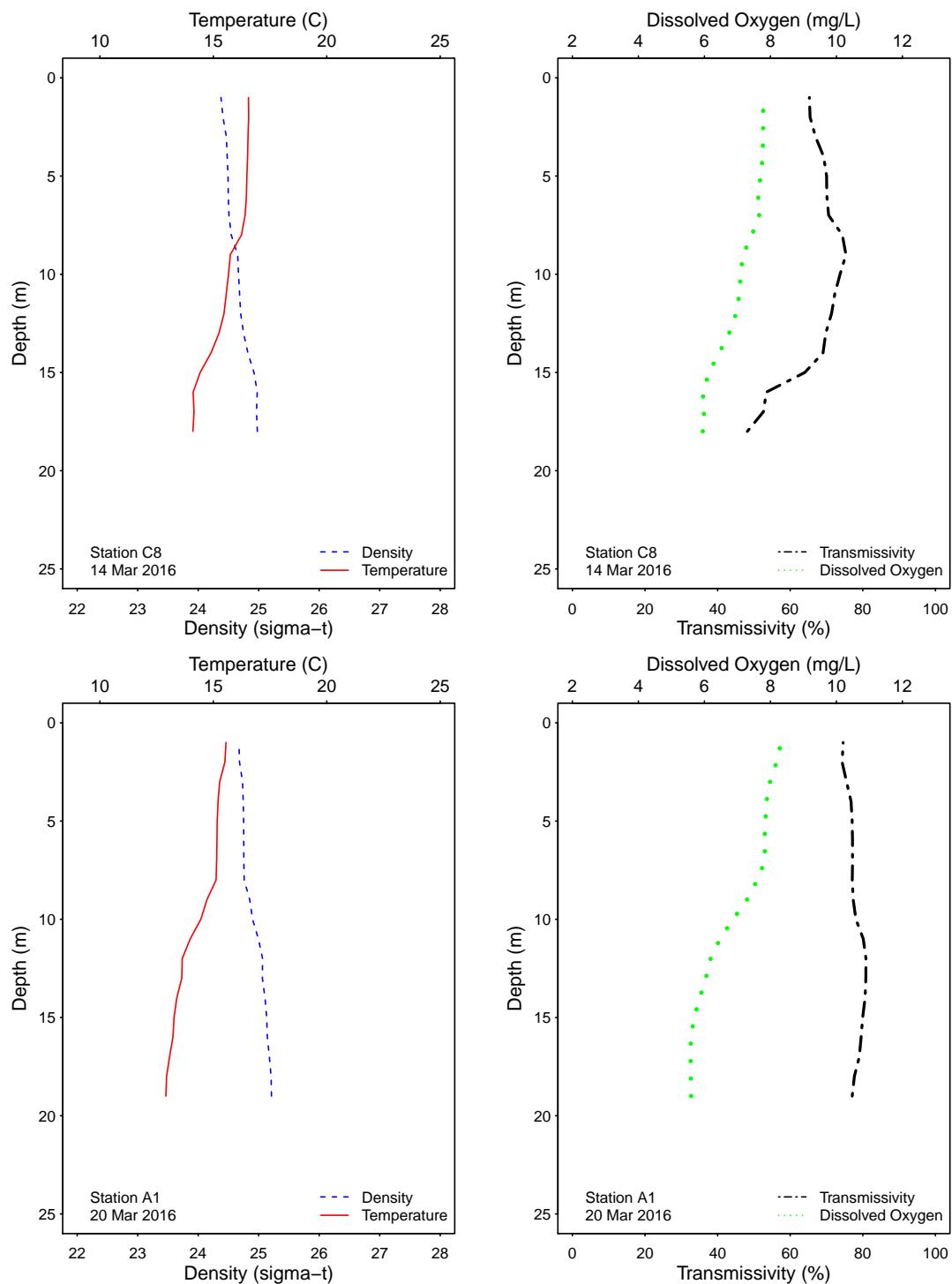


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

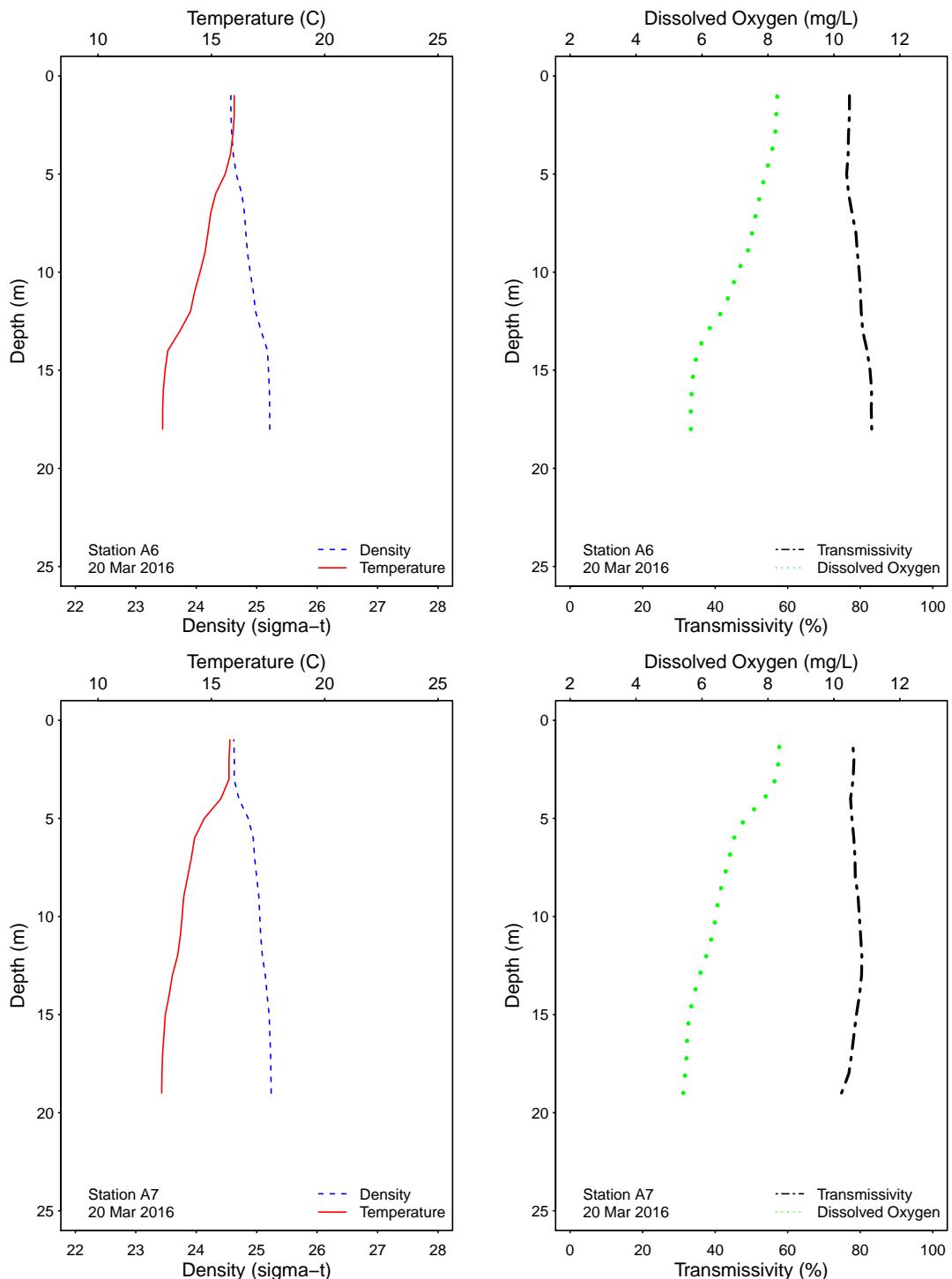


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

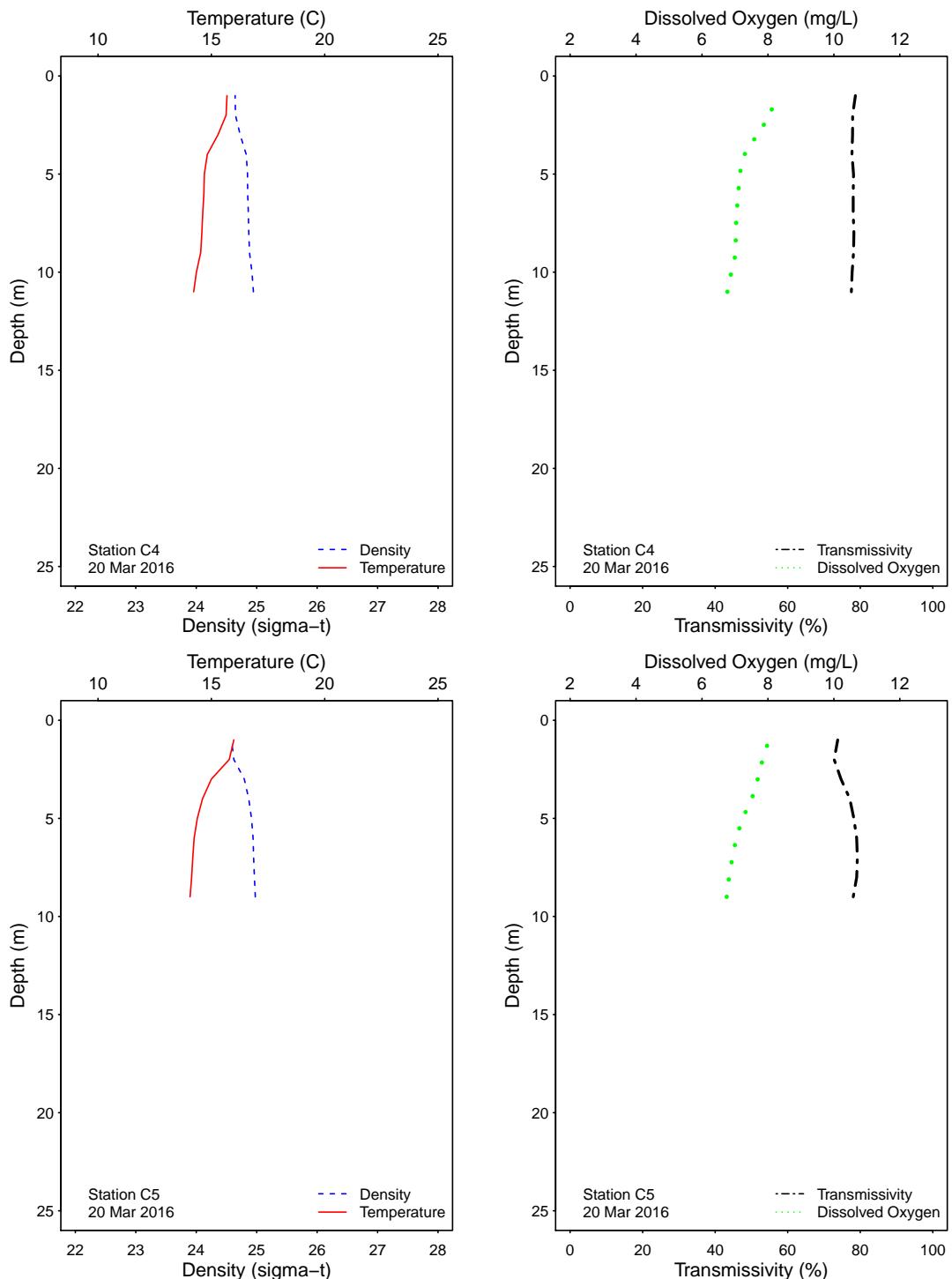


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

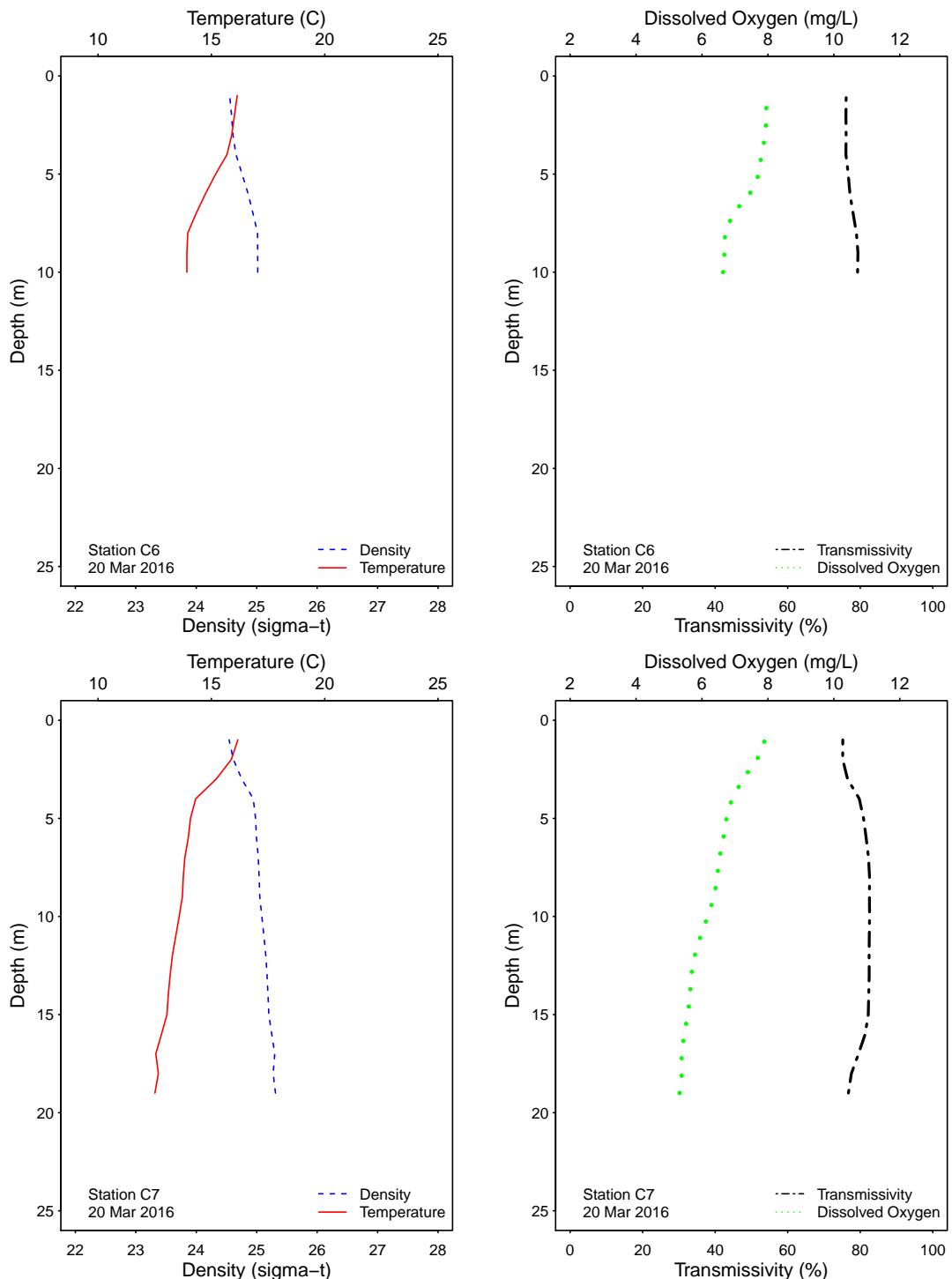


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

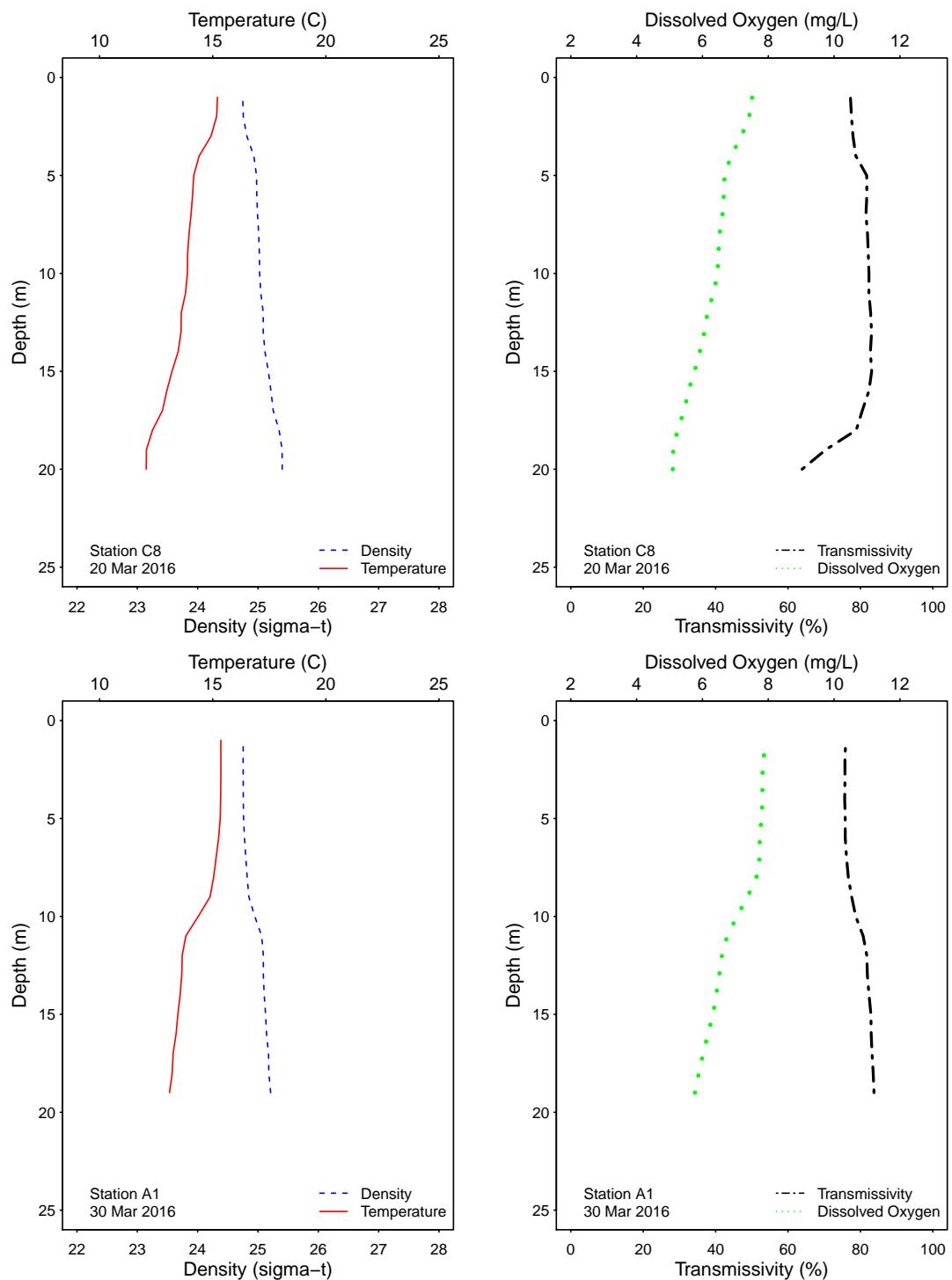


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

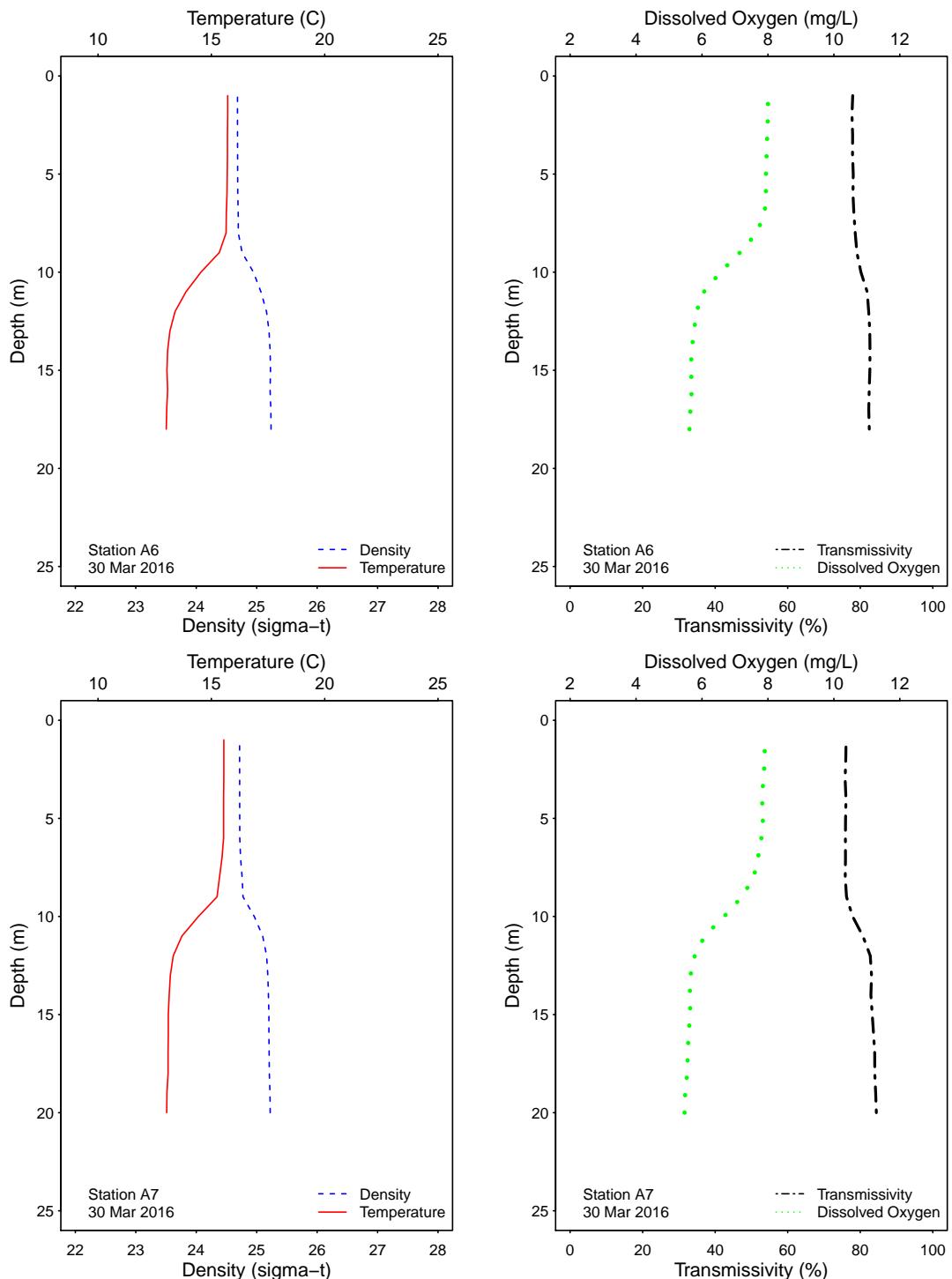


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

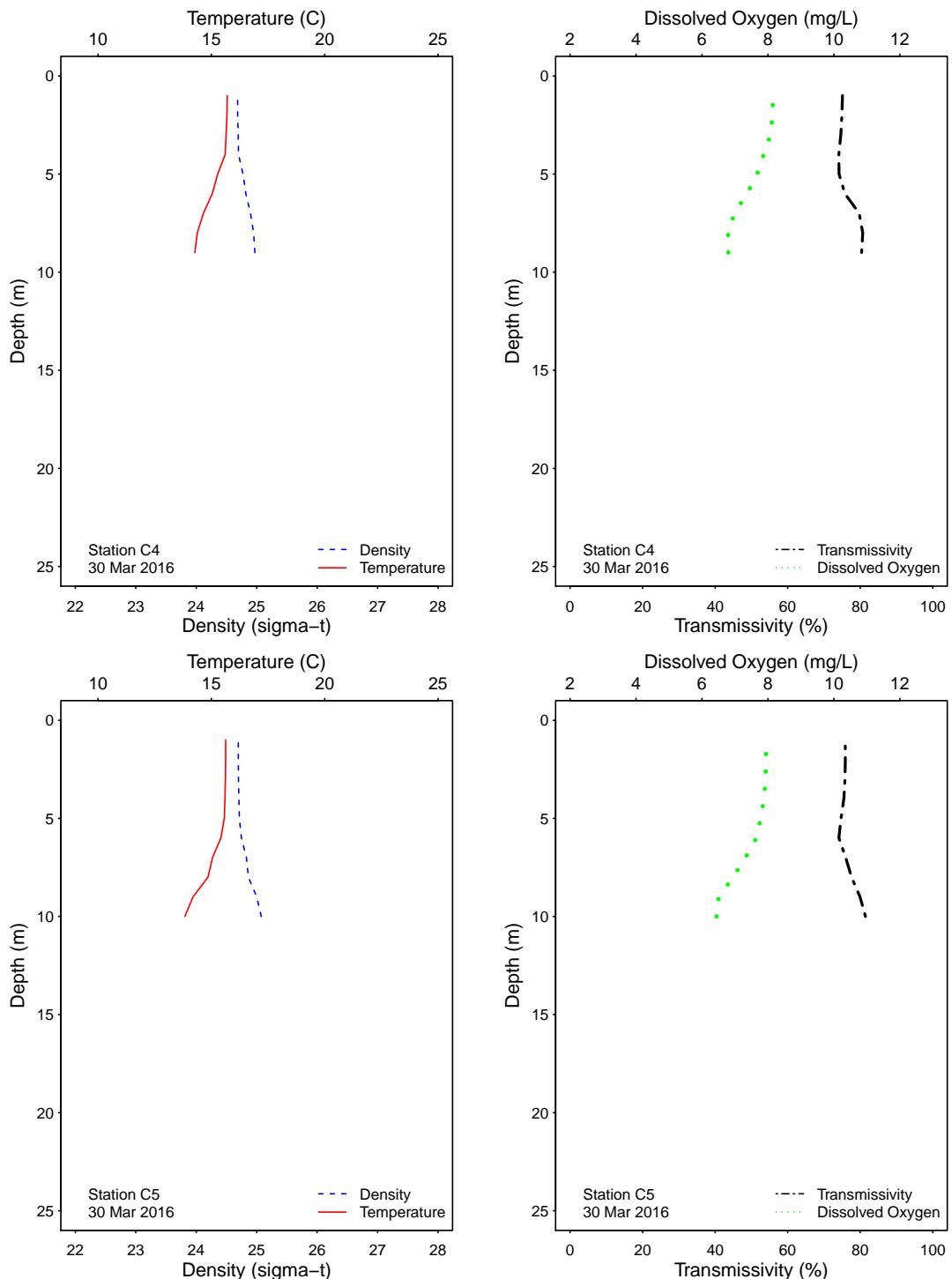


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

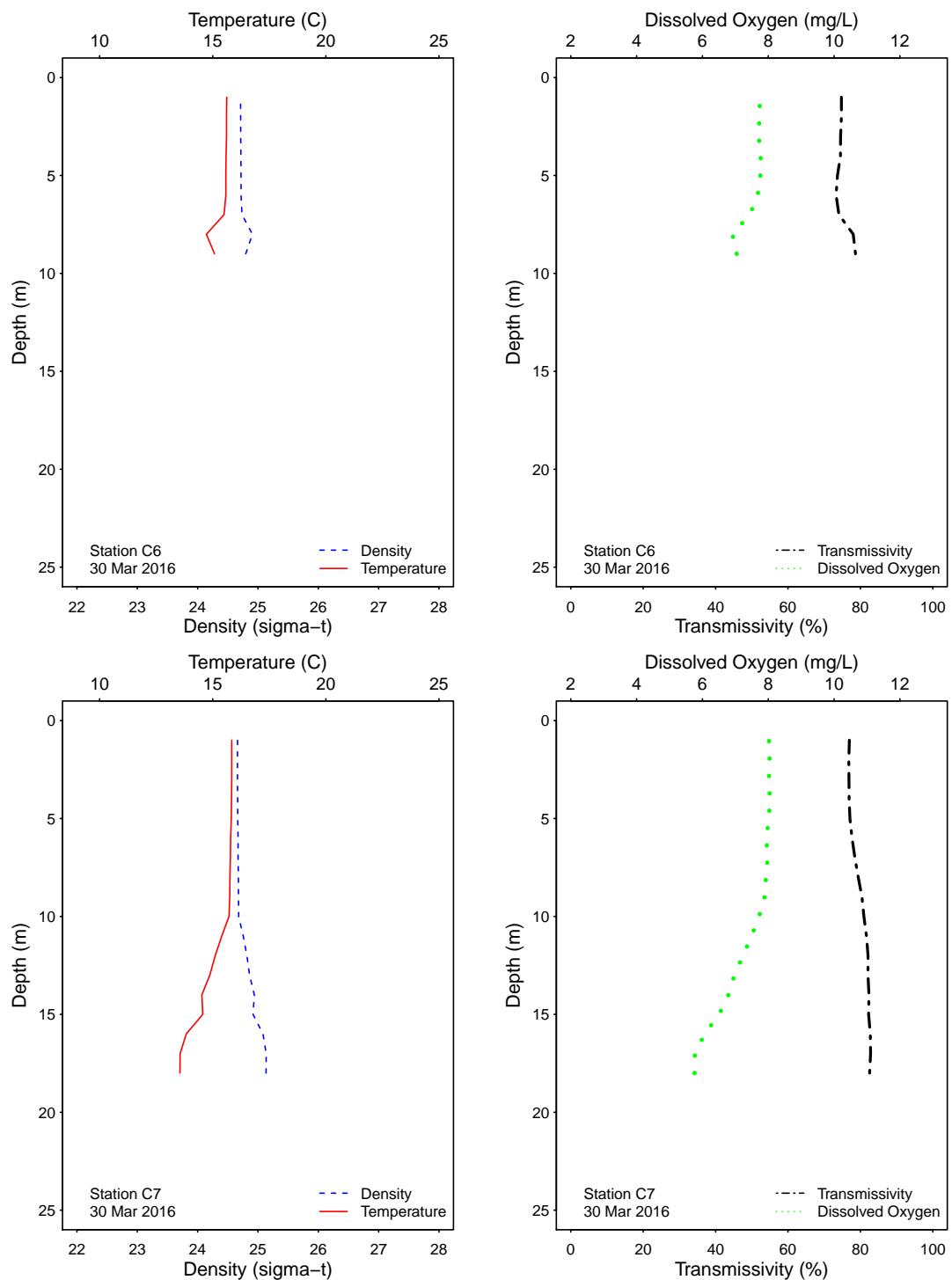


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

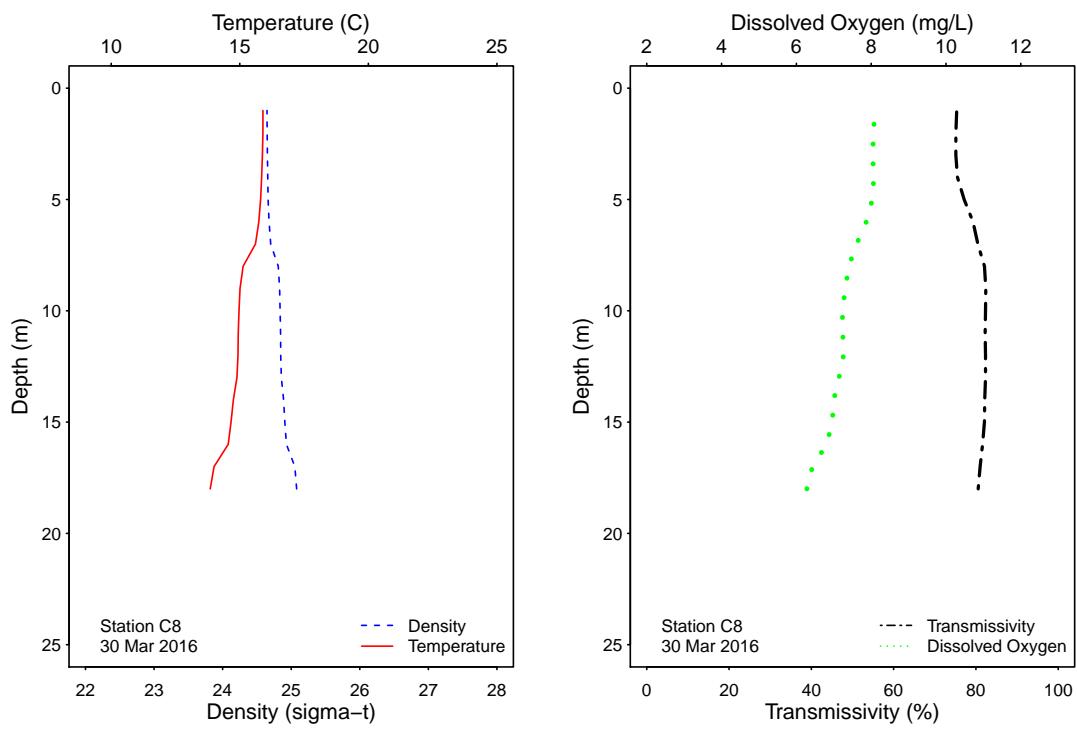


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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# **APPENDIX A**

## Quality Assurance



**Table A.1**

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

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	05 Mar 2016	18	JT	LAB DUPLICATE	110	14e	8e
A7	10 Mar 2016	18	SR	LAB DUPLICATE	1200	42	960
A7	14 Mar 2016	18	JT	LAB DUPLICATE	160e	4e	160e
A7	20 Mar 2016	18	AR	LAB DUPLICATE	16e	<2	<2
A7	30 Mar 2016	18	JT	LAB DUPLICATE	20e	<2	<2
C7	05 Mar 2016	18	JT	LAB DUPLICATE	8e	<2	2e
C7	10 Mar 2016	18	SR	LAB DUPLICATE	26e	<2	4e
C7	14 Mar 2016	18	SR	LAB DUPLICATE	26e	<2	8e
C7	20 Mar 2016	18	LMA	LAB DUPLICATE	<2	<2	<2
C7	30 Mar 2016	18	ZV	LAB DUPLICATE	<2	<2	<2
C8	05 Mar 2016	12	JT	LAB DUPLICATE	<2	<2	<2
C8	10 Mar 2016	12	SR	LAB DUPLICATE	2e	<2	<2
C8	14 Mar 2016	12	SR	LAB DUPLICATE	<2	<2	<2
C8	20 Mar 2016	12	LMA	LAB DUPLICATE	2e	<2	<2
C8	30 Mar 2016	12	SR	LAB DUPLICATE	<2	<2	<2
D8	04 Mar 2016		ZV	FIELD DUPLICATE	12e	4e	2e
D8	04 Mar 2016		ZV	LAB DUPLICATE	8e	<2	<2
D8	10 Mar 2016		LMA	FIELD DUPLICATE	ns	<2	ns
D8	10 Mar 2016		SR	FIELD DUPLICATE	20e	ns	4e
D8	10 Mar 2016		LMA	LAB DUPLICATE	ns	<2	ns
D8	10 Mar 2016		SR	LAB DUPLICATE	<20	ns	2e
D8	16 Mar 2016		AR	FIELD DUPLICATE	<20	<2	<2
D8	16 Mar 2016		AR	LAB DUPLICATE	<20	<2	<2
D8	22 Mar 2016		JT	FIELD DUPLICATE	2e	<2	2e
D8	22 Mar 2016		JT	LAB DUPLICATE	4e	2e	40e
D8	28 Mar 2016		JT	FIELD DUPLICATE	140e	<2	2e
D8	28 Mar 2016		JT	LAB DUPLICATE	60e	4e	4e

ns = not sampled

ND = no data

