



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

## **POINT LOMA WASTEWATER TREATMENT PLANT**

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

## **SEPTEMBER 2020**

Environmental Monitoring and Technical Services  
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October 31, 2020

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the September 2020 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

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

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

Sincerely,



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

PV/rk

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



# REPORT OUTLINE

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## INTRODUCTION

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

## MATERIALS AND METHODS

### ***Shore Stations***

Water quality conditions are required to be monitored at eight shoreline stations, including D4, D5, D7, D8, D9, D10, D11 and D12, which range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). Over the past several years, due to increasing instability in several cliffside areas of Point Loma, City staff have been unable to safely access and sample several stations at various times. This has resulted in the following modifications:

- Station D8 was replaced by alternate station D8-A during July 2016. However, due to increasing instability, City staff have been unable to safely access and sample station D8-A since February 7, 2018. During March 2018, the City identified an alternate location for stations D8/D8-A. This new station, designated D8-B, is located about 150 feet north of D8-A.

Seawater samples are collected from the surf zone at each station on a weekly basis. These samples are subsequently transported to the City's Marine Microbiology Laboratory and analyzed for the presence of several types of fecal indicator bacteria (FIB), 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 weekly according to permit specifications 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 fecal indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). 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 collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses are drawn from these bottles into sterile

sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of  $\geq 4$  scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. Additionally, CTD profile data for each water sample depth are presented with the bacteriological data.

### ***Offshore Stations***

Offshore water quality sampling is conducted quarterly typically during the months of February, May, August and November. A total of 36 offshore stations (F01–F36) are sampled during each survey usually over a 3-day period. Three of the stations (F01–F03) are located along the 18 m depth contour, while 11 stations are located along each of the following contours: 60 m (stations F04–F14), 80 m (stations F15–F25), and 98 m (stations F26–F36). Of these 36 stations, 15 (F01–F03, F06–F14, F18–F20) are located within State jurisdictional waters (i.e., within 3 nautical miles of shore) and are subject to the California Ocean Plan's compliance standards. Monitoring at all offshore sites includes measurements of *Enterococcus* bacteria, water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, chromomorphic dissolved organic matter (CDOM), and visual observations of weather and water conditions.

Seawater samples for bacteriological analyses at the offshore stations are collected using a CTD-integrated rosette sampler with Niskin bottles. Profiles of the various physical/chemical parameters (listed above) are taken using a Sea-Bird CTD. Additionally, data for depths closest to those at which bacteriological samples were collected 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 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<sup>2</sup>) 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 2020 Quality Assurance Report, which will be completed in March 2021.

## SUMMARY OF RESULTS

### ***Shore Stations***

- The eight shore stations (D4, D5, D7, D8-B, D9, D10, D11, D12) were sampled on September 2, 9, 16, 23, and 30.
- During September, each of the shore stations were in compliance with California Ocean Plan (Ocean Plan) water contact standards.
- Notable observations included a sewage-like odor at stations D5 and D9 on one or more days during September.
- 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 surf grass. See the City of San Diego's most recent *Biennial Receiving Waters Monitoring and Assessment Report for the Point Loma and South Bay Ocean Outfalls* for details (<https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports>).

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

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled on September 8, 14, 21, and 28.
- During September, each of the kelp bed stations were in compliance with the various Ocean Plan water contact standards.
- Water column temperatures ranged from 13.73 to 22.23°C. The difference between surface and bottom waters ranged from 2.73 to 7.49°C.
- Chlorophyll *a* concentrations ranged from 0.41 to 6.32 µg/L.
- Nothing of sewage origin was observed at any of the kelp stations.

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<sup>2</sup> Gilbert, R.O. (1987). Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold Co., New York.

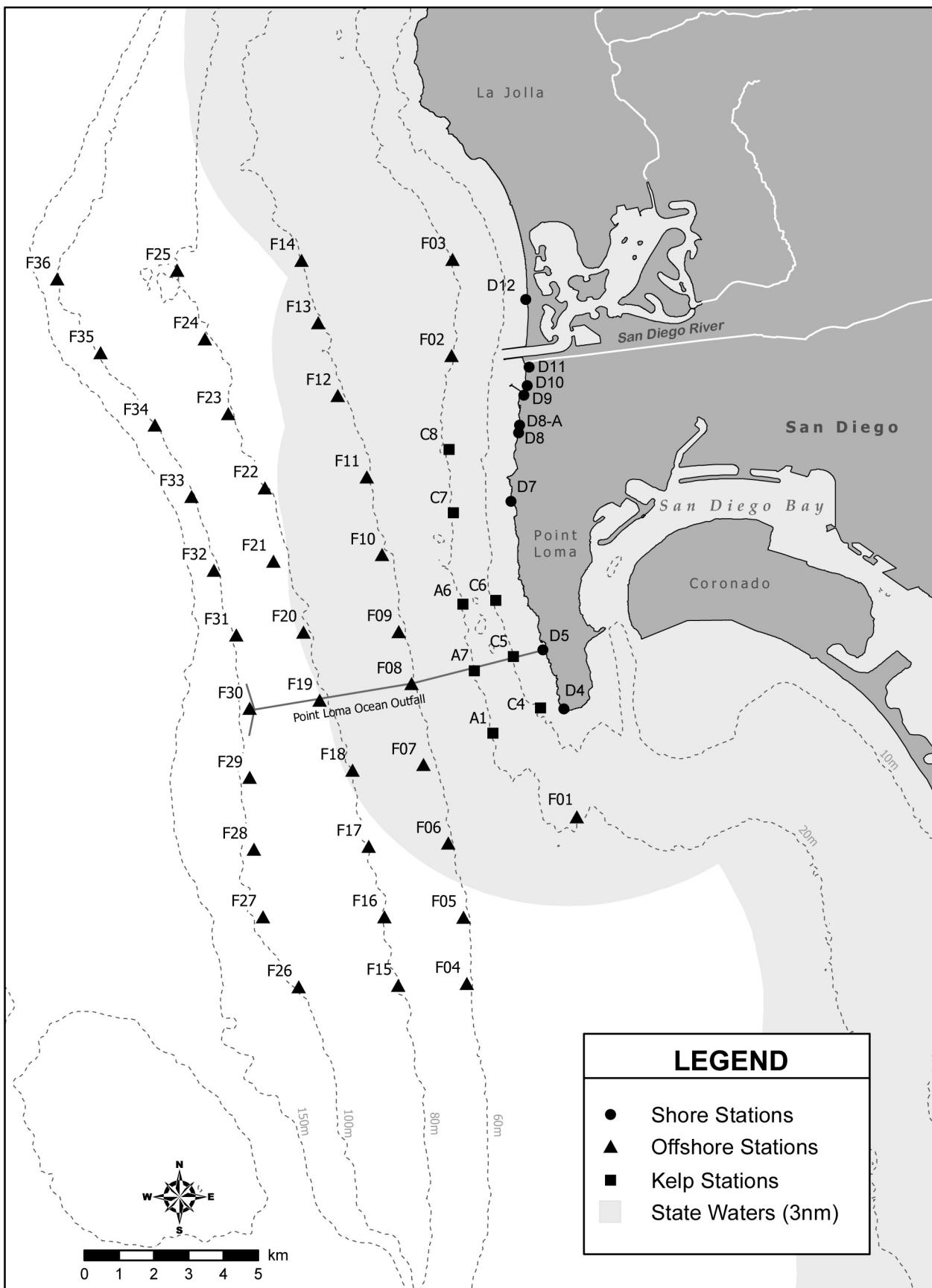
### ***Offshore Stations***

- Quarterly water quality sampling was not conducted during September at the offshore stations. The next quarterly sampling is scheduled for November 2020.



## 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-B	D9	D10	D11	D12
01 Sep 2020	11*	6*	36*	26*	33*	34*	26*	15*
02 Sep 2020	13	9	39	25	28	35	28	16
03 Sep 2020	13	9	39	25	28	35	28	16
04 Sep 2020	11*	12*	47*	26*	31*	40*	26*	20*
05 Sep 2020	11*	12*	47*	26*	31*	40*	26*	20*
06 Sep 2020	11*	12*	47*	26*	31*	40*	26*	20*
07 Sep 2020	11*	12*	47*	26*	31*	40*	26*	20*
08 Sep 2020	11*	12*	47*	26*	31*	40*	26*	20*
09 Sep 2020	10	14	39	25	34	50	28	23
10 Sep 2020	10	14	39	25	34	50	28	23
11 Sep 2020	15*	22*	47*	26*	44*	79*	31*	24*
12 Sep 2020	15*	22*	47*	26*	44*	79*	31*	24*
13 Sep 2020	15*	22*	47*	26*	44*	79*	31*	24*
14 Sep 2020	15*	22*	47*	26*	44*	79*	31*	24*
15 Sep 2020	15*	22*	47*	26*	44*	79*	31*	24*
16 Sep 2020	16	22	45	29	39	69	28	23
17 Sep 2020	16	22	45	29	39	69	28	23
18 Sep 2020	15*	22*	31*	31*	27*	44*	26*	24*
19 Sep 2020	15*	22*	31*	31*	27*	44*	26*	24*
20 Sep 2020	15*	22*	31*	31*	27*	44*	26*	24*
21 Sep 2020	15*	22*	31*	31*	27*	44*	26*	24*
22 Sep 2020	15*	22*	31*	31*	27*	44*	26*	24*
23 Sep 2020	16	22	29	33	29	38	25	23
24 Sep 2020	16	22	29	33	29	38	25	23
25 Sep 2020	15*	22*	31*	28*	30*	44*	30*	24*
26 Sep 2020	15*	22*	31*	28*	30*	44*	30*	24*
27 Sep 2020	15*	22*	31*	28*	30*	44*	30*	24*
28 Sep 2020	15*	22*	31*	28*	30*	44*	30*	24*
29 Sep 2020	15*	22*	31*	28*	30*	44*	30*	24*
30 Sep 2020	16	22	33	26	28	38	31	23

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.2**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Sep 2020	3*	3*	3*	5*	4*	16*	7*	3*
02 Sep 2020	4	3	4	5	4	14	8	4
03 Sep 2020	4	3	4	5	4	14	8	4
04 Sep 2020	4*	4*	5*	3*	3*	13*	6*	4*
05 Sep 2020	4*	4*	5*	3*	3*	13*	6*	4*
06 Sep 2020	4*	4*	5*	3*	3*	13*	6*	4*
07 Sep 2020	4*	4*	5*	3*	3*	13*	6*	4*
08 Sep 2020	4*	4*	5*	3*	3*	13*	6*	4*
09 Sep 2020	3	3	4	3	4	12	6	5
10 Sep 2020	3	3	4	3	4	12	6	5
11 Sep 2020	4*	4*	5*	3*	4*	19*	9*	6*
12 Sep 2020	4*	4*	5*	3*	4*	19*	9*	6*
13 Sep 2020	4*	4*	5*	3*	4*	19*	9*	6*
14 Sep 2020	4*	4*	5*	3*	4*	19*	9*	6*
15 Sep 2020	4*	4*	5*	3*	4*	19*	9*	6*
16 Sep 2020	3	3	6	4	4	15	6	5
17 Sep 2020	3	3	6	4	4	15	6	5
18 Sep 2020	3*	3*	5*	4*	3*	10*	4*	5*
19 Sep 2020	3*	3*	5*	4*	3*	10*	4*	5*
20 Sep 2020	3*	3*	5*	4*	3*	10*	4*	5*
21 Sep 2020	3*	3*	5*	4*	3*	10*	4*	5*
22 Sep 2020	3*	3*	5*	4*	3*	10*	4*	5*
23 Sep 2020	3	3	4	4	3	9	4	6
24 Sep 2020	3	3	4	4	3	9	4	6
25 Sep 2020	3*	3*	5*	4*	3*	7*	4*	7*
26 Sep 2020	3*	3*	5*	4*	3*	7*	4*	7*
27 Sep 2020	3*	3*	5*	4*	3*	7*	4*	7*
28 Sep 2020	3*	3*	5*	4*	3*	7*	4*	7*
29 Sep 2020	3*	3*	5*	4*	3*	7*	4*	7*
30 Sep 2020	3	3	7	4	3	8	5	6

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.3**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Sep 2020	4*	2*	2*	2*	3*	6*	6*	3*
02 Sep 2020	3	2	3	2	3	6	6	5
03 Sep 2020	3	2	3	2	3	6	6	5
04 Sep 2020	4*	2*	3*	2*	3*	5*	5*	6*
05 Sep 2020	4*	2*	3*	2*	3*	5*	5*	6*
06 Sep 2020	4*	2*	3*	2*	3*	5*	5*	6*
07 Sep 2020	4*	2*	3*	2*	3*	5*	5*	6*
08 Sep 2020	4*	2*	3*	2*	3*	5*	5*	6*
09 Sep 2020	3	2	4	2	3	6	6	7
10 Sep 2020	3	2	4	2	3	6	6	7
11 Sep 2020	4*	2*	5*	2*	3*	8*	7*	9*
12 Sep 2020	4*	2*	5*	2*	3*	8*	7*	9*
13 Sep 2020	4*	2*	5*	2*	3*	8*	7*	9*
14 Sep 2020	4*	2*	5*	2*	3*	8*	7*	9*
15 Sep 2020	4*	2*	5*	2*	3*	8*	7*	9*
16 Sep 2020	3	2	5	3	3	8	7	8
17 Sep 2020	3	2	5	3	3	8	7	8
18 Sep 2020	2*	2*	6*	4*	2*	6*	5*	7*
19 Sep 2020	2*	2*	6*	4*	2*	6*	5*	7*
20 Sep 2020	2*	2*	6*	4*	2*	6*	5*	7*
21 Sep 2020	2*	2*	6*	4*	2*	6*	5*	7*
22 Sep 2020	2*	2*	6*	4*	2*	6*	5*	7*
23 Sep 2020	2	2	6	4	2	5	4	8
24 Sep 2020	2	2	6	4	2	5	4	8
25 Sep 2020	2*	2*	7*	4*	2*	6*	5*	11*
26 Sep 2020	2*	2*	7*	4*	2*	6*	5*	11*
27 Sep 2020	2*	2*	7*	4*	2*	6*	5*	11*
28 Sep 2020	2*	2*	7*	4*	2*	6*	5*	11*
29 Sep 2020	2*	2*	7*	4*	2*	6*	5*	11*
30 Sep 2020	3	2	8	4	2	7	5	8

\* Geometric mean calculated using n<5

ns = not sampled

**Table 2.4**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
02 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
09 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
16 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
23 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
30 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.5**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
02 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
09 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
16 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
23 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
30 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.6**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
02 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
09 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
16 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
23 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
30 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.7**

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
02 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
09 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
16 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
23 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC
30 Sep 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.8**

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

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D4	02 Sep 2020	805	<20	10e	<2	0.50
	09 Sep 2020	945	6e	<2	<2	0.33
	16 Sep 2020	756	<20	<2	2e	0.10
	23 Sep 2020	814	<20	<2	<2	0.10
	30 Sep 2020	745	<20	<2	10e	0.10
D5	02 Sep 2020	740	30e	10e	<2	0.33
	09 Sep 2020	956	<20	<2	2e	0.10
	16 Sep 2020	738	<20	2e	<2	0.10
	23 Sep 2020	830	<20	<2	<2	0.10
	30 Sep 2020	731	<20	2e	<2	0.10
D7	02 Sep 2020	1001	60e	12e	8e	0.20
	09 Sep 2020	922	<20	<2	8e	0.10
	16 Sep 2020	816	40e	18e	8e	0.45
	23 Sep 2020	859	<20	<2	6e	0.10
	30 Sep 2020	803	40e	22e	8e	0.55
D8-B	02 Sep 2020	950	20e	6e	4e	0.30
	09 Sep 2020	904	<20	<2	<2	0.10
	16 Sep 2020	829	40e	12e	12e	0.30
	23 Sep 2020	919	40e	<2	4e	0.05
	30 Sep 2020	820	<20	6e	<2	0.30
D9	02 Sep 2020	940	16e	<2	<2	0.12
	09 Sep 2020	851	52	4e	<2	0.08
	16 Sep 2020	845	24e	4e	<2	0.17
	23 Sep 2020	930	40e	<2	<2	0.05
	30 Sep 2020	834	20e	<2	<2	0.10
D10	02 Sep 2020	925	40e	8e	6e	0.20
	09 Sep 2020	834	120e	10e	12e	0.08
	16 Sep 2020	901	40e	6e	8e	0.15
	23 Sep 2020	944	<20	4e	<2	0.20
	30 Sep 2020	845	20e	<20	12e	1.00
D11	02 Sep 2020	916	40e	10e	6e	0.25
	09 Sep 2020	820	40e	8e	8e	0.20
	16 Sep 2020	950	20e	2e	8e	0.10
	23 Sep 2020	959	24e	<2	<2	0.08
	30 Sep 2020	854	40e	10e	4e	0.25
D12	02 Sep 2020	857	20e	12e	32e	0.60
	09 Sep 2020	737	40e	12e	12e	0.30
	16 Sep 2020	1016	<20	2e	4e	0.10
	23 Sep 2020	1054	20e	10e	8e	0.50
	30 Sep 2020	1008	<20	2e	<2	0.10

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	02 Sep 2020	Arrive Time	805
D4	02 Sep 2020	Weather	Overcast
D4	02 Sep 2020	Wind Speed (kts)	1.7
D4	02 Sep 2020	Wind Dir	N
D4	02 Sep 2020	Animal Life	3 Cormorants; 2 Pelicans; 1 Seal
D4	02 Sep 2020	Floatables	None
D4	02 Sep 2020	Water Color	Green
D4	02 Sep 2020	Current Direction	S
D4	02 Sep 2020	Water Temp (C)	20.7
D4	02 Sep 2020	Wave Height Low (ft)	1
D4	02 Sep 2020	High Tide (ft)	4.7
D4	02 Sep 2020	High Tide Time	1016
D4	02 Sep 2020	Low Tide (ft)	-0.2
D4	02 Sep 2020	Low Tide Time	409
D4	02 Sep 2020	Comments	Seagrass; Algae; 3 Surfers; 1 Boat; Water clear
D4	09 Sep 2020	Arrive Time	945
D4	09 Sep 2020	Weather	Hazy
D4	09 Sep 2020	Wind Speed (kts)	1.1
D4	09 Sep 2020	Wind Dir	W
D4	09 Sep 2020	Animal Life	2 Cormorants; 1 Seal
D4	09 Sep 2020	Floatables	Foam
D4	09 Sep 2020	Water Color	Green
D4	09 Sep 2020	Current Direction	S
D4	09 Sep 2020	Water Temp (C)	23
D4	09 Sep 2020	Wave Height Low (ft)	2
D4	09 Sep 2020	High Tide (ft)	4.4
D4	09 Sep 2020	High Tide Time	1359
D4	09 Sep 2020	Low Tide (ft)	2.6
D4	09 Sep 2020	Low Tide Time	633
D4	09 Sep 2020	Comments	Kelp; 11 Surfers; 11 Boats; Water clear
D4	16 Sep 2020	Arrive Time	756
D4	16 Sep 2020	Weather	Hazy
D4	16 Sep 2020	Wind Speed (kts)	0
D4	16 Sep 2020	Wind Dir	
D4	16 Sep 2020	Animal Life	1 Cormorant; 6 Pelicans; 1 Seal
D4	16 Sep 2020	Floatables	None
D4	16 Sep 2020	Water Color	Blue
D4	16 Sep 2020	Current Direction	S
D4	16 Sep 2020	Water Temp (C)	19.4
D4	16 Sep 2020	Wave Height Low (ft)	2
D4	16 Sep 2020	High Tide (ft)	5.1
D4	16 Sep 2020	High Tide Time	916
D4	16 Sep 2020	Low Tide (ft)	-0.7
D4	16 Sep 2020	Low Tide Time	307
D4	16 Sep 2020	Comments	Kelp; Algae; 2 Surfers; 1 Boat; Water clear
D4	23 Sep 2020	Arrive Time	814
D4	23 Sep 2020	Weather	Cloudy
D4	23 Sep 2020	Wind Speed (kts)	1.7
D4	23 Sep 2020	Wind Dir	N
D4	23 Sep 2020	Animal Life	3 Cormorants
D4	23 Sep 2020	Floatables	Foam
D4	23 Sep 2020	Water Color	Green
D4	23 Sep 2020	Current Direction	S

Station	Date	Parameter	Value
D4	23 Sep 2020	Water Temp (C)	20.7
D4	23 Sep 2020	Wave Height Low (ft)	1
D4	23 Sep 2020	High Tide (ft)	3.3
D4	23 Sep 2020	High Tide Time	329
D4	23 Sep 2020	Low Tide (ft)	2.7
D4	23 Sep 2020	Low Tide Time	754
D4	23 Sep 2020	Comments	Kelp; Algae; 5 Surfers; 3 Boats; Water turbid
D4	30 Sep 2020	Arrive Time	745
D4	30 Sep 2020	Weather	Sunny
D4	30 Sep 2020	Wind Speed (kts)	1.5
D4	30 Sep 2020	Wind Dir	N
D4	30 Sep 2020	Animal Life	8 Cormorants
D4	30 Sep 2020	Floatables	Foam; Film
D4	30 Sep 2020	Water Color	Green
D4	30 Sep 2020	Current Direction	S
D4	30 Sep 2020	Water Temp (C)	20.8
D4	30 Sep 2020	Wave Height Low (ft)	5
D4	30 Sep 2020	High Tide (ft)	5.1
D4	30 Sep 2020	High Tide Time	911
D4	30 Sep 2020	Low Tide (ft)	0.2
D4	30 Sep 2020	Low Tide Time	305
D4	30 Sep 2020	Comments	Kelp; Seagrass; Algae; 12 Surfers; 5 Boats; Water clear
D5	02 Sep 2020	Arrive Time	740
D5	02 Sep 2020	Weather	Partly Cloudy
D5	02 Sep 2020	Wind Speed (kts)	3.3
D5	02 Sep 2020	Wind Dir	N
D5	02 Sep 2020	Animal Life	3 Seagulls
D5	02 Sep 2020	Floatables	Foam
D5	02 Sep 2020	Water Color	Green
D5	02 Sep 2020	Current Direction	S
D5	02 Sep 2020	Water Temp (C)	20.8
D5	02 Sep 2020	Wave Height Low (ft)	0.5
D5	02 Sep 2020	High Tide (ft)	4.7
D5	02 Sep 2020	High Tide Time	1016
D5	02 Sep 2020	Low Tide (ft)	-0.2
D5	02 Sep 2020	Low Tide Time	409
D5	02 Sep 2020	Comments	Water clear
D5	09 Sep 2020	Arrive Time	956
D5	09 Sep 2020	Weather	Hazy
D5	09 Sep 2020	Wind Speed (kts)	2.7
D5	09 Sep 2020	Wind Dir	N
D5	09 Sep 2020	Animal Life	3 Cormorants
D5	09 Sep 2020	Floatables	Foam
D5	09 Sep 2020	Water Color	Green
D5	09 Sep 2020	Current Direction	S
D5	09 Sep 2020	Water Temp (C)	23.6
D5	09 Sep 2020	Wave Height Low (ft)	2
D5	09 Sep 2020	High Tide (ft)	4.4
D5	09 Sep 2020	High Tide Time	1359
D5	09 Sep 2020	Low Tide (ft)	2.6
D5	09 Sep 2020	Low Tide Time	633
D5	09 Sep 2020	Comments	Kelp; Seagrass; Algae; Water clear
D5	16 Sep 2020	Arrive Time	738
D5	16 Sep 2020	Weather	Cloudy
D5	16 Sep 2020	Wind Speed (kts)	0
D5	16 Sep 2020	Wind Dir	
D5	16 Sep 2020	Animal Life	6 Cormorants; 1 Seagull

Station	Date	Parameter	Value
D5	16 Sep 2020	Floatables	None
D5	16 Sep 2020	Water Color	Blue
D5	16 Sep 2020	Current Direction	S
D5	16 Sep 2020	Water Temp (C)	19.9
D5	16 Sep 2020	Wave Height Low (ft)	1
D5	16 Sep 2020	High Tide (ft)	5.1
D5	16 Sep 2020	High Tide Time	916
D5	16 Sep 2020	Low Tide (ft)	-0.7
D5	16 Sep 2020	Low Tide Time	307
D5	16 Sep 2020	Comments	Algae; Sewage-like odor; Water clear
D5	23 Sep 2020	Arrive Time	830
D5	23 Sep 2020	Weather	Cloudy
D5	23 Sep 2020	Wind Speed (kts)	2.7
D5	23 Sep 2020	Wind Dir	N
D5	23 Sep 2020	Animal Life	None
D5	23 Sep 2020	Floatables	Foam
D5	23 Sep 2020	Water Color	Green
D5	23 Sep 2020	Current Direction	S
D5	23 Sep 2020	Water Temp (C)	21.8
D5	23 Sep 2020	Wave Height Low (ft)	1
D5	23 Sep 2020	High Tide (ft)	3.3
D5	23 Sep 2020	High Tide Time	329
D5	23 Sep 2020	Low Tide (ft)	2.7
D5	23 Sep 2020	Low Tide Time	754
D5	23 Sep 2020	Comments	Kelp; Algae; Water turbid
D5	30 Sep 2020	Arrive Time	731
D5	30 Sep 2020	Weather	Sunny
D5	30 Sep 2020	Wind Speed (kts)	0
D5	30 Sep 2020	Wind Dir	
D5	30 Sep 2020	Animal Life	None
D5	30 Sep 2020	Floatables	Foam; Film
D5	30 Sep 2020	Water Color	Brown
D5	30 Sep 2020	Current Direction	S
D5	30 Sep 2020	Water Temp (C)	20.8
D5	30 Sep 2020	Wave Height Low (ft)	3
D5	30 Sep 2020	High Tide (ft)	5.1
D5	30 Sep 2020	High Tide Time	911
D5	30 Sep 2020	Low Tide (ft)	0.2
D5	30 Sep 2020	Low Tide Time	305
D5	30 Sep 2020	Comments	Kelp; Seagrass; Algae; Sewage-like odor; 3 Boats; Water turbid
D7	02 Sep 2020	Arrive Time	1001
D7	02 Sep 2020	Weather	Overcast
D7	02 Sep 2020	Wind Speed (kts)	3.4
D7	02 Sep 2020	Wind Dir	NW
D7	02 Sep 2020	Animal Life	None
D7	02 Sep 2020	Floatables	Foam
D7	02 Sep 2020	Water Color	Green
D7	02 Sep 2020	Current Direction	S
D7	02 Sep 2020	Water Temp (C)	21.8
D7	02 Sep 2020	Wave Height Low (ft)	1
D7	02 Sep 2020	High Tide (ft)	4.7
D7	02 Sep 2020	High Tide Time	1016
D7	02 Sep 2020	Low Tide (ft)	-0.2
D7	02 Sep 2020	Low Tide Time	409
D7	02 Sep 2020	Comments	Kelp; Algae; 1 Person; 1 Boat; Water clear
D7	09 Sep 2020	Arrive Time	922

Station	Date	Parameter	Value
D7	09 Sep 2020	Weather	Hazy
D7	09 Sep 2020	Wind Speed (kts)	0.3
D7	09 Sep 2020	Wind Dir	SW
D7	09 Sep 2020	Animal Life	2 Seagulls
D7	09 Sep 2020	Floatables	Foam
D7	09 Sep 2020	Water Color	Green
D7	09 Sep 2020	Current Direction	S
D7	09 Sep 2020	Water Temp (C)	23.4
D7	09 Sep 2020	Wave Height Low (ft)	4
D7	09 Sep 2020	High Tide (ft)	4.4
D7	09 Sep 2020	High Tide Time	1359
D7	09 Sep 2020	Low Tide (ft)	2.6
D7	09 Sep 2020	Low Tide Time	633
D7	09 Sep 2020	Comments	Kelp; Seagrass; Algae; 48 Surfers; 1 Boat; Water clear
D7	16 Sep 2020	Arrive Time	816
D7	16 Sep 2020	Weather	Hazy
D7	16 Sep 2020	Wind Speed (kts)	3.3
D7	16 Sep 2020	Wind Dir	N
D7	16 Sep 2020	Animal Life	1 Cormorant; 1 Pelican; 1 Tern
D7	16 Sep 2020	Floatables	None
D7	16 Sep 2020	Water Color	Blue
D7	16 Sep 2020	Current Direction	S
D7	16 Sep 2020	Water Temp (C)	21
D7	16 Sep 2020	Wave Height Low (ft)	0
D7	16 Sep 2020	High Tide (ft)	5.1
D7	16 Sep 2020	High Tide Time	916
D7	16 Sep 2020	Low Tide (ft)	-0.7
D7	16 Sep 2020	Low Tide Time	307
D7	16 Sep 2020	Comments	Algae; Water clear
D7	23 Sep 2020	Arrive Time	859
D7	23 Sep 2020	Weather	Partly Cloudy
D7	23 Sep 2020	Wind Speed (kts)	3.3
D7	23 Sep 2020	Wind Dir	N
D7	23 Sep 2020	Animal Life	None
D7	23 Sep 2020	Floatables	Foam
D7	23 Sep 2020	Water Color	Green
D7	23 Sep 2020	Current Direction	S
D7	23 Sep 2020	Water Temp (C)	21.8
D7	23 Sep 2020	Wave Height Low (ft)	3
D7	23 Sep 2020	High Tide (ft)	3.3
D7	23 Sep 2020	High Tide Time	329
D7	23 Sep 2020	Low Tide (ft)	2.7
D7	23 Sep 2020	Low Tide Time	754
D7	23 Sep 2020	Comments	Kelp; Seagrass; Algae; 10 Surfers; Water clear
D7	30 Sep 2020	Arrive Time	803
D7	30 Sep 2020	Weather	Sunny
D7	30 Sep 2020	Wind Speed (kts)	2.1
D7	30 Sep 2020	Wind Dir	E
D7	30 Sep 2020	Animal Life	None
D7	30 Sep 2020	Floatables	Foam; Film
D7	30 Sep 2020	Water Color	Green
D7	30 Sep 2020	Current Direction	S
D7	30 Sep 2020	Water Temp (C)	20.6
D7	30 Sep 2020	Wave Height Low (ft)	5
D7	30 Sep 2020	High Tide (ft)	5.1
D7	30 Sep 2020	High Tide Time	911
D7	30 Sep 2020	Low Tide (ft)	0.2
D7	30 Sep 2020	Low Tide Time	305

Station	Date	Parameter	Value
D7	30 Sep 2020	Comments	Algae; 16 Surfers; Water clear
D8-B	02 Sep 2020	Arrive Time	950
D8-B	02 Sep 2020	Weather	Overcast
D8-B	02 Sep 2020	Wind Speed (kts)	3.6
D8-B	02 Sep 2020	Wind Dir	W
D8-B	02 Sep 2020	Animal Life	None
D8-B	02 Sep 2020	Floatables	None
D8-B	02 Sep 2020	Water Color	Green
D8-B	02 Sep 2020	Current Direction	S
D8-B	02 Sep 2020	Water Temp (C)	20.9
D8-B	02 Sep 2020	Wave Height Low (ft)	2
D8-B	02 Sep 2020	High Tide (ft)	4.7
D8-B	02 Sep 2020	High Tide Time	1016
D8-B	02 Sep 2020	Low Tide (ft)	-0.2
D8-B	02 Sep 2020	Low Tide Time	409
D8-B	02 Sep 2020	Comments	Kelp; Seagrass; 1 Person; Water clear
D8-B	09 Sep 2020	Arrive Time	904
D8-B	09 Sep 2020	Weather	Hazy
D8-B	09 Sep 2020	Wind Speed (kts)	1.9
D8-B	09 Sep 2020	Wind Dir	W
D8-B	09 Sep 2020	Animal Life	1 Cormorant
D8-B	09 Sep 2020	Floatables	Foam
D8-B	09 Sep 2020	Water Color	Green
D8-B	09 Sep 2020	Current Direction	S
D8-B	09 Sep 2020	Water Temp (C)	23.5
D8-B	09 Sep 2020	Wave Height Low (ft)	3
D8-B	09 Sep 2020	High Tide (ft)	4.4
D8-B	09 Sep 2020	High Tide Time	1359
D8-B	09 Sep 2020	Low Tide (ft)	2.6
D8-B	09 Sep 2020	Low Tide Time	633
D8-B	09 Sep 2020	Comments	Kelp; Seagrass; 1 Person; 8 Surfers; Water clear
D8-B	16 Sep 2020	Arrive Time	829
D8-B	16 Sep 2020	Weather	Hazy
D8-B	16 Sep 2020	Wind Speed (kts)	0
D8-B	16 Sep 2020	Wind Dir	
D8-B	16 Sep 2020	Animal Life	1 Cormorant
D8-B	16 Sep 2020	Floatables	None
D8-B	16 Sep 2020	Water Color	Brown
D8-B	16 Sep 2020	Current Direction	S
D8-B	16 Sep 2020	Water Temp (C)	20.9
D8-B	16 Sep 2020	Wave Height Low (ft)	1
D8-B	16 Sep 2020	High Tide (ft)	5.1
D8-B	16 Sep 2020	High Tide Time	916
D8-B	16 Sep 2020	Low Tide (ft)	-0.7
D8-B	16 Sep 2020	Low Tide Time	307
D8-B	16 Sep 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; 1 Swimmer; Water clear
D8-B	23 Sep 2020	Arrive Time	919
D8-B	23 Sep 2020	Weather	Sunny
D8-B	23 Sep 2020	Wind Speed (kts)	2.5
D8-B	23 Sep 2020	Wind Dir	W
D8-B	23 Sep 2020	Animal Life	None
D8-B	23 Sep 2020	Floatables	Foam
D8-B	23 Sep 2020	Water Color	Green
D8-B	23 Sep 2020	Current Direction	S
D8-B	23 Sep 2020	Water Temp (C)	21.6
D8-B	23 Sep 2020	Wave Height Low (ft)	2
D8-B	23 Sep 2020	High Tide (ft)	5.1

Station	Date	Parameter	Value
D8-B	23 Sep 2020	High Tide Time	1428
D8-B	23 Sep 2020	Low Tide (ft)	2.7
D8-B	23 Sep 2020	Low Tide Time	754
D8-B	23 Sep 2020	Comments	2 Persons; Water clear
D8-B	30 Sep 2020	Arrive Time	820
D8-B	30 Sep 2020	Weather	Sunny
D8-B	30 Sep 2020	Wind Speed (kts)	5
D8-B	30 Sep 2020	Wind Dir	SW
D8-B	30 Sep 2020	Animal Life	None
D8-B	30 Sep 2020	Floatables	Foam; Film
D8-B	30 Sep 2020	Water Color	Brown
D8-B	30 Sep 2020	Current Direction	S
D8-B	30 Sep 2020	Water Temp (C)	20.7
D8-B	30 Sep 2020	Wave Height Low (ft)	4
D8-B	30 Sep 2020	High Tide (ft)	5.1
D8-B	30 Sep 2020	High Tide Time	911
D8-B	30 Sep 2020	Low Tide (ft)	0.2
D8-B	30 Sep 2020	Low Tide Time	305
D8-B	30 Sep 2020	Comments	Kelp; Seagrass; 3 Persons; 1 Surfer; Water clear
D9	02 Sep 2020	Arrive Time	940
D9	02 Sep 2020	Weather	Overcast
D9	02 Sep 2020	Wind Speed (kts)	3.8
D9	02 Sep 2020	Wind Dir	NW
D9	02 Sep 2020	Animal Life	None
D9	02 Sep 2020	Floatables	None
D9	02 Sep 2020	Water Color	Green
D9	02 Sep 2020	Current Direction	S
D9	02 Sep 2020	Water Temp (C)	20.9
D9	02 Sep 2020	Wave Height Low (ft)	2
D9	02 Sep 2020	High Tide (ft)	4.7
D9	02 Sep 2020	High Tide Time	1016
D9	02 Sep 2020	Low Tide (ft)	-0.2
D9	02 Sep 2020	Low Tide Time	409
D9	02 Sep 2020	Comments	Algae; 4 Persons; Water clear
D9	09 Sep 2020	Arrive Time	851
D9	09 Sep 2020	Weather	Hazy
D9	09 Sep 2020	Wind Speed (kts)	0.5
D9	09 Sep 2020	Wind Dir	W
D9	09 Sep 2020	Animal Life	None
D9	09 Sep 2020	Floatables	Foam
D9	09 Sep 2020	Water Color	Green
D9	09 Sep 2020	Current Direction	S
D9	09 Sep 2020	Water Temp (C)	23.6
D9	09 Sep 2020	Wave Height Low (ft)	3
D9	09 Sep 2020	High Tide (ft)	4.4
D9	09 Sep 2020	High Tide Time	1359
D9	09 Sep 2020	Low Tide (ft)	2.6
D9	09 Sep 2020	Low Tide Time	633
D9	09 Sep 2020	Comments	Kelp; Algae; 2 Persons; 5 Surfers; Water clear
D9	16 Sep 2020	Arrive Time	843
D9	16 Sep 2020	Weather	Sunny
D9	16 Sep 2020	Wind Speed (kts)	0
D9	16 Sep 2020	Wind Dir	
D9	16 Sep 2020	Animal Life	1 Seagull
D9	16 Sep 2020	Floatables	None
D9	16 Sep 2020	Water Color	Blue
D9	16 Sep 2020	Current Direction	N

Station	Date	Parameter	Value
D9	16 Sep 2020	Water Temp (C)	20.8
D9	16 Sep 2020	Wave Height Low (ft)	1
D9	16 Sep 2020	High Tide (ft)	5.1
D9	16 Sep 2020	High Tide Time	916
D9	16 Sep 2020	Low Tide (ft)	-0.7
D9	16 Sep 2020	Low Tide Time	307
D9	16 Sep 2020	Comments	Algae; Sewage-like odor; Water clear
D9	23 Sep 2020	Arrive Time	930
D9	23 Sep 2020	Weather	Sunny
D9	23 Sep 2020	Wind Speed (kts)	2.9
D9	23 Sep 2020	Wind Dir	W
D9	23 Sep 2020	Animal Life	None
D9	23 Sep 2020	Floatables	Foam
D9	23 Sep 2020	Water Color	Green
D9	23 Sep 2020	Current Direction	S
D9	23 Sep 2020	Water Temp (C)	21.4
D9	23 Sep 2020	Wave Height Low (ft)	3
D9	23 Sep 2020	High Tide (ft)	5.1
D9	23 Sep 2020	High Tide Time	1428
D9	23 Sep 2020	Low Tide (ft)	2.7
D9	23 Sep 2020	Low Tide Time	754
D9	23 Sep 2020	Comments	Algae; 2 Surfers; Water clear
D9	30 Sep 2020	Arrive Time	834
D9	30 Sep 2020	Weather	Sunny
D9	30 Sep 2020	Wind Speed (kts)	1.5
D9	30 Sep 2020	Wind Dir	N
D9	30 Sep 2020	Animal Life	None
D9	30 Sep 2020	Floatables	Foam; Film
D9	30 Sep 2020	Water Color	Green
D9	30 Sep 2020	Current Direction	N
D9	30 Sep 2020	Water Temp (C)	20.7
D9	30 Sep 2020	Wave Height Low (ft)	5
D9	30 Sep 2020	High Tide (ft)	5.1
D9	30 Sep 2020	High Tide Time	911
D9	30 Sep 2020	Low Tide (ft)	0.2
D9	30 Sep 2020	Low Tide Time	305
D9	30 Sep 2020	Comments	1 Person; 1 Surfer; Water clear
D10	02 Sep 2020	Arrive Time	925
D10	02 Sep 2020	Weather	Overcast
D10	02 Sep 2020	Wind Speed (kts)	2.9
D10	02 Sep 2020	Wind Dir	NW
D10	02 Sep 2020	Animal Life	6 Seagulls
D10	02 Sep 2020	Floatables	Foam
D10	02 Sep 2020	Water Color	Green
D10	02 Sep 2020	Current Direction	S
D10	02 Sep 2020	Water Temp (C)	21
D10	02 Sep 2020	Wave Height Low (ft)	2
D10	02 Sep 2020	High Tide (ft)	4.7
D10	02 Sep 2020	High Tide Time	1016
D10	02 Sep 2020	Low Tide (ft)	-0.2
D10	02 Sep 2020	Low Tide Time	409
D10	02 Sep 2020	Comments	Kelp; Seagrass; 9 Persons; 8 Surfers; Water clear
D10	09 Sep 2020	Arrive Time	834
D10	09 Sep 2020	Weather	Hazy
D10	09 Sep 2020	Wind Speed (kts)	2.9
D10	09 Sep 2020	Wind Dir	W
D10	09 Sep 2020	Animal Life	1 Pigeon

Station	Date	Parameter	Value
D10	09 Sep 2020	Floatables	None
D10	09 Sep 2020	Water Color	Green
D10	09 Sep 2020	Current Direction	S
D10	09 Sep 2020	Water Temp (C)	23.2
D10	09 Sep 2020	Wave Height Low (ft)	3
D10	09 Sep 2020	High Tide (ft)	4.4
D10	09 Sep 2020	High Tide Time	1359
D10	09 Sep 2020	Low Tide (ft)	2.6
D10	09 Sep 2020	Low Tide Time	633
D10	09 Sep 2020	Comments	Kelp; Seagrass; 25 Persons; 30 Surfers; 10 Swimmers; Water clear
D10	16 Sep 2020	Arrive Time	901
D10	16 Sep 2020	Weather	Sunny
D10	16 Sep 2020	Wind Speed (kts)	0
D10	16 Sep 2020	Wind Dir	
D10	16 Sep 2020	Animal Life	3 Seagulls
D10	16 Sep 2020	Floatables	None
D10	16 Sep 2020	Water Color	Green
D10	16 Sep 2020	Current Direction	N
D10	16 Sep 2020	Water Temp (C)	20.9
D10	16 Sep 2020	Wave Height Low (ft)	1
D10	16 Sep 2020	High Tide (ft)	5.1
D10	16 Sep 2020	High Tide Time	916
D10	16 Sep 2020	Low Tide (ft)	-0.7
D10	16 Sep 2020	Low Tide Time	307
D10	16 Sep 2020	Comments	Kelp; Seagrass; 13 Persons; 12 Surfers; Water clear
D10	23 Sep 2020	Arrive Time	944
D10	23 Sep 2020	Weather	Sunny
D10	23 Sep 2020	Wind Speed (kts)	3.4
D10	23 Sep 2020	Wind Dir	W
D10	23 Sep 2020	Animal Life	1 Pigeon; 7 Seagulls
D10	23 Sep 2020	Floatables	Foam
D10	23 Sep 2020	Water Color	Green
D10	23 Sep 2020	Current Direction	S
D10	23 Sep 2020	Water Temp (C)	21.9
D10	23 Sep 2020	Wave Height Low (ft)	2
D10	23 Sep 2020	High Tide (ft)	5.1
D10	23 Sep 2020	High Tide Time	1428
D10	23 Sep 2020	Low Tide (ft)	2.7
D10	23 Sep 2020	Low Tide Time	754
D10	23 Sep 2020	Comments	Kelp; Seagrass; 15 Persons; 22 Surfers; 3 Swimmers; Water clear
D10	30 Sep 2020	Arrive Time	845
D10	30 Sep 2020	Weather	Sunny
D10	30 Sep 2020	Wind Speed (kts)	0.3
D10	30 Sep 2020	Wind Dir	N
D10	30 Sep 2020	Animal Life	1 Dog; 2 Pigeons; 3 Seagulls
D10	30 Sep 2020	Floatables	Foam; Film
D10	30 Sep 2020	Water Color	Green
D10	30 Sep 2020	Current Direction	N
D10	30 Sep 2020	Water Temp (C)	21.3
D10	30 Sep 2020	Wave Height Low (ft)	5
D10	30 Sep 2020	High Tide (ft)	5.1
D10	30 Sep 2020	High Tide Time	911
D10	30 Sep 2020	Low Tide (ft)	0.2
D10	30 Sep 2020	Low Tide Time	305
D10	30 Sep 2020	Comments	Kelp; Seagrass; 26 Persons; 31 Surfers; 3 Swimmers; Water clear

Station	Date	Parameter	Value
D11	02 Sep 2020	Arrive Time	916
D11	02 Sep 2020	Weather	Overcast
D11	02 Sep 2020	Wind Speed (kts)	1.7
D11	02 Sep 2020	Wind Dir	W
D11	02 Sep 2020	Animal Life	27 Pigeons; 1 Seagull
D11	02 Sep 2020	Floatables	Foam
D11	02 Sep 2020	Water Color	Green
D11	02 Sep 2020	Current Direction	S
D11	02 Sep 2020	Water Temp (C)	20.4
D11	02 Sep 2020	Wave Height Low (ft)	3
D11	02 Sep 2020	High Tide (ft)	4.7
D11	02 Sep 2020	High Tide Time	1016
D11	02 Sep 2020	Low Tide (ft)	-0.2
D11	02 Sep 2020	Low Tide Time	409
D11	02 Sep 2020	Comments	Seagrass; 11 Persons; 24 Surfers; 2 Swimmers; Water clear
D11	09 Sep 2020	Arrive Time	820
D11	09 Sep 2020	Weather	Hazy
D11	09 Sep 2020	Wind Speed (kts)	0
D11	09 Sep 2020	Wind Dir	
D11	09 Sep 2020	Animal Life	1 Dog; 9 Pigeons
D11	09 Sep 2020	Floatables	None
D11	09 Sep 2020	Water Color	Green
D11	09 Sep 2020	Current Direction	S
D11	09 Sep 2020	Water Temp (C)	22.9
D11	09 Sep 2020	Wave Height Low (ft)	3
D11	09 Sep 2020	High Tide (ft)	2.9
D11	09 Sep 2020	High Tide Time	250
D11	09 Sep 2020	Low Tide (ft)	2.6
D11	09 Sep 2020	Low Tide Time	633
D11	09 Sep 2020	Comments	Kelp; Seagrass; 1 Jogger; 3 Persons; 35 Surfers; 1 Boat; Water clear
D11	16 Sep 2020	Arrive Time	950
D11	16 Sep 2020	Weather	Hazy
D11	16 Sep 2020	Wind Speed (kts)	1.5
D11	16 Sep 2020	Wind Dir	W
D11	16 Sep 2020	Animal Life	1 Dog
D11	16 Sep 2020	Floatables	None
D11	16 Sep 2020	Water Color	Green
D11	16 Sep 2020	Current Direction	S
D11	16 Sep 2020	Water Temp (C)	21.4
D11	16 Sep 2020	Wave Height Low (ft)	3
D11	16 Sep 2020	High Tide (ft)	5.1
D11	16 Sep 2020	High Tide Time	916
D11	16 Sep 2020	Low Tide (ft)	0.8
D11	16 Sep 2020	Low Tide Time	1502
D11	16 Sep 2020	Comments	2 Joggers; 18 Persons; 39 Surfers; Water clear
D11	23 Sep 2020	Arrive Time	959
D11	23 Sep 2020	Weather	Sunny
D11	23 Sep 2020	Wind Speed (kts)	4.4
D11	23 Sep 2020	Wind Dir	NW
D11	23 Sep 2020	Animal Life	None
D11	23 Sep 2020	Floatables	None
D11	23 Sep 2020	Water Color	Green
D11	23 Sep 2020	Current Direction	S
D11	23 Sep 2020	Water Temp (C)	22.4
D11	23 Sep 2020	Wave Height Low (ft)	3
D11	23 Sep 2020	High Tide (ft)	5.1

Station	Date	Parameter	Value
D11	23 Sep 2020	High Tide Time	1428
D11	23 Sep 2020	Low Tide (ft)	2.7
D11	23 Sep 2020	Low Tide Time	754
D11	23 Sep 2020	Comments	Kelp; Seagrass; 16 Persons; 48 Surfers; Water clear
D11	30 Sep 2020	Arrive Time	854
D11	30 Sep 2020	Weather	Sunny
D11	30 Sep 2020	Wind Speed (kts)	1.9
D11	30 Sep 2020	Wind Dir	W
D11	30 Sep 2020	Animal Life	1 Dog; 3 Pigeons
D11	30 Sep 2020	Floatables	Foam; Film
D11	30 Sep 2020	Water Color	Green
D11	30 Sep 2020	Current Direction	S
D11	30 Sep 2020	Water Temp (C)	21.6
D11	30 Sep 2020	Wave Height Low (ft)	6
D11	30 Sep 2020	High Tide (ft)	5.1
D11	30 Sep 2020	High Tide Time	911
D11	30 Sep 2020	Low Tide (ft)	0.2
D11	30 Sep 2020	Low Tide Time	305
D11	30 Sep 2020	Comments	Kelp; Seagrass; 10 Persons; 25 Surfers; 1 Swimmer; Water clear
D12	02 Sep 2020	Arrive Time	857
D12	02 Sep 2020	Weather	Overcast
D12	02 Sep 2020	Wind Speed (kts)	3.1
D12	02 Sep 2020	Wind Dir	W
D12	02 Sep 2020	Animal Life	30 Seagulls
D12	02 Sep 2020	Floatables	None
D12	02 Sep 2020	Water Color	Green
D12	02 Sep 2020	Current Direction	S
D12	02 Sep 2020	Water Temp (C)	21.5
D12	02 Sep 2020	Wave Height Low (ft)	2
D12	02 Sep 2020	High Tide (ft)	4.7
D12	02 Sep 2020	High Tide Time	1016
D12	02 Sep 2020	Low Tide (ft)	-0.2
D12	02 Sep 2020	Low Tide Time	409
D12	02 Sep 2020	Comments	Kelp; Seagrass; 1 Jogger; 10 Persons; 8 Surfers; Water clear
D12	09 Sep 2020	Arrive Time	737
D12	09 Sep 2020	Weather	Hazy
D12	09 Sep 2020	Wind Speed (kts)	2.9
D12	09 Sep 2020	Wind Dir	E
D12	09 Sep 2020	Animal Life	1 Dog; 30 Pigeons; 18 Seagulls
D12	09 Sep 2020	Floatables	None
D12	09 Sep 2020	Water Color	Green
D12	09 Sep 2020	Current Direction	S
D12	09 Sep 2020	Water Temp (C)	23
D12	09 Sep 2020	Wave Height Low (ft)	2
D12	09 Sep 2020	High Tide (ft)	2.9
D12	09 Sep 2020	High Tide Time	250
D12	09 Sep 2020	Low Tide (ft)	2.6
D12	09 Sep 2020	Low Tide Time	633
D12	09 Sep 2020	Comments	Kelp; Seagrass; 10 Persons; 8 Surfers; 1 Fisherman; Water clear
D12	16 Sep 2020	Arrive Time	1016
D12	16 Sep 2020	Weather	Hazy
D12	16 Sep 2020	Wind Speed (kts)	3.6
D12	16 Sep 2020	Wind Dir	NW
D12	16 Sep 2020	Animal Life	1 Godwit; 44 Seagulls; 1 Tern
D12	16 Sep 2020	Floatables	None

Station	Date	Parameter	Value
D12	16 Sep 2020	Water Color	Green
D12	16 Sep 2020	Current Direction	N
D12	16 Sep 2020	Water Temp (C)	22.1
D12	16 Sep 2020	Wave Height Low (ft)	2
D12	16 Sep 2020	High Tide (ft)	5.1
D12	16 Sep 2020	High Tide Time	916
D12	16 Sep 2020	Low Tide (ft)	0.8
D12	16 Sep 2020	Low Tide Time	1502
D12	16 Sep 2020	Comments	Kelp; Seagrass; 12 Persons; 1 Surfer; Water clear
D12	23 Sep 2020	Arrive Time	1054
D12	23 Sep 2020	Weather	Sunny
D12	23 Sep 2020	Wind Speed (kts)	6.9
D12	23 Sep 2020	Wind Dir	NW
D12	23 Sep 2020	Animal Life	None
D12	23 Sep 2020	Floatables	None
D12	23 Sep 2020	Water Color	Green
D12	23 Sep 2020	Current Direction	S
D12	23 Sep 2020	Water Temp (C)	22.8
D12	23 Sep 2020	Wave Height Low (ft)	2
D12	23 Sep 2020	High Tide (ft)	5.1
D12	23 Sep 2020	High Tide Time	1428
D12	23 Sep 2020	Low Tide (ft)	2.7
D12	23 Sep 2020	Low Tide Time	754
D12	23 Sep 2020	Comments	Kelp; Seagrass; 29 Persons; 4 Surfers; Water clear
D12	30 Sep 2020	Arrive Time	1008
D12	30 Sep 2020	Weather	Sunny
D12	30 Sep 2020	Wind Speed (kts)	3.4
D12	30 Sep 2020	Wind Dir	W
D12	30 Sep 2020	Animal Life	7 Pigeons
D12	30 Sep 2020	Floatables	Foam
D12	30 Sep 2020	Water Color	Green
D12	30 Sep 2020	Current Direction	S
D12	30 Sep 2020	Water Temp (C)	22.5
D12	30 Sep 2020	Wave Height Low (ft)	3
D12	30 Sep 2020	High Tide (ft)	5.1
D12	30 Sep 2020	High Tide Time	911
D12	30 Sep 2020	Low Tide (ft)	1
D12	30 Sep 2020	Low Tide Time	1511
D12	30 Sep 2020	Comments	Kelp; Seagrass; 1 Jogger; 30 Persons; 7 Surfers; 5 Swimmers; Water clear

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# Kelp Stations



**Table 3.1**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Sep 2020	6	8	5	4	4	4	6	3
02 Sep 2020	6	8	5	4	4	4	6	3
03 Sep 2020	8*	12*	6*	4*	4*	3*	7*	4*
04 Sep 2020	8*	12*	6*	4*	4*	3*	7*	4*
05 Sep 2020	8*	12*	6*	4*	4*	3*	7*	4*
06 Sep 2020	8*	12*	6*	4*	4*	3*	7*	4*
07 Sep 2020	8*	12*	6*	4*	4*	3*	7*	4*
08 Sep 2020	11	8	5	4	4	4	6	3
09 Sep 2020	11	8	5	4	4	4	6	3
10 Sep 2020	16*	12*	6*	4*	4*	5*	5*	3*
11 Sep 2020	16*	12*	6*	4*	4*	5*	5*	3*
12 Sep 2020	16*	12*	6*	4*	4*	5*	5*	3*
13 Sep 2020	16*	12*	6*	4*	4*	5*	5*	3*
14 Sep 2020	11	9	5	4	4	4	4	3
15 Sep 2020	11	9	5	4	4	4	4	3
16 Sep 2020	16*	9*	6*	4*	4*	5*	5*	3*
17 Sep 2020	16*	9*	6*	4*	4*	5*	5*	3*
18 Sep 2020	16*	9*	6*	4*	4*	5*	5*	3*
19 Sep 2020	16*	9*	6*	4*	4*	5*	5*	3*
20 Sep 2020	16*	9*	6*	4*	4*	5*	5*	3*
21 Sep 2020	14	9	6	3	3	4	4	3
22 Sep 2020	14	9	6	3	3	4	4	3
23 Sep 2020	14	9	6	3	3	4	4	3
24 Sep 2020	14	9	6	3	3	4	4	3
25 Sep 2020	14	9	6	3	3	4	4	3
26 Sep 2020	11*	6*	5*	3*	3*	3*	4*	4*
27 Sep 2020	11*	6*	5*	3*	3*	3*	4*	4*
28 Sep 2020	8	5	4	3	3	3	3	4
29 Sep 2020	8	5	4	3	3	3	3	4
30 Sep 2020	6*	3*	3*	2*	2*	3*	2*	2*

\* 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 Sep 2020	4	4	3	2	2	2	2	2
02 Sep 2020	4	4	3	2	2	2	2	2
03 Sep 2020	4*	4*	3*	2*	2*	2*	2*	2*
04 Sep 2020	4*	4*	3*	2*	2*	2*	2*	2*
05 Sep 2020	4*	4*	3*	2*	2*	2*	2*	2*
06 Sep 2020	4*	4*	3*	2*	2*	2*	2*	2*
07 Sep 2020	4*	4*	3*	2*	2*	2*	2*	2*
08 Sep 2020	6	4	3	2	2	2	2	2
09 Sep 2020	6	4	3	2	2	2	2	2
10 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
11 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
12 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
13 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
14 Sep 2020	6	4	3	2	2	2	2	2
15 Sep 2020	6	4	3	2	2	2	2	2
16 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
17 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
18 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
19 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
20 Sep 2020	7*	4*	3*	2*	2*	2*	2*	2*
21 Sep 2020	6	4	3	2	2	2	2	2
22 Sep 2020	6	4	3	2	2	2	2	2
23 Sep 2020	6	4	3	2	2	2	2	2
24 Sep 2020	6	4	3	2	2	2	2	2
25 Sep 2020	6	4	3	2	2	2	2	2
26 Sep 2020	4*	3*	3*	2*	2*	2*	2*	2*
27 Sep 2020	4*	3*	3*	2*	2*	2*	2*	2*
28 Sep 2020	4	2	2	2	2	2	2	2
29 Sep 2020	4	2	2	2	2	2	2	2
30 Sep 2020	3*	2*	2*	2*	2*	2*	2*	2*

\* Geometric mean calculated using n<5

**Table 3.3**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Sep 2020	2	2	2	2	2	2	2	2
02 Sep 2020	2	2	2	2	2	2	2	2
03 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
04 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
05 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
06 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
07 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
08 Sep 2020	2	2	2	2	2	2	2	2
09 Sep 2020	2	2	2	2	2	2	2	2
10 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
11 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
12 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
13 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
14 Sep 2020	2	2	2	2	2	2	2	2
15 Sep 2020	2	2	2	2	2	2	2	2
16 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
17 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
18 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
19 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
20 Sep 2020	2*	2*	2*	2*	2*	2*	2*	2*
21 Sep 2020	2	2	2	3	2	2	2	2
22 Sep 2020	2	2	2	3	2	2	2	2
23 Sep 2020	2	2	2	3	2	2	2	2
24 Sep 2020	2	2	2	3	2	2	2	2
25 Sep 2020	2	2	2	3	2	2	2	2
26 Sep 2020	2*	2*	2*	3*	2*	2*	2*	2*
27 Sep 2020	2*	2*	2*	3*	2*	2*	2*	2*
28 Sep 2020	2	2	2	3	2	2	2	2
29 Sep 2020	2	2	2	3	2	2	2	2
30 Sep 2020	2*	2*	2*	3*	2*	2*	2*	2*

\* Geometric mean calculated using n<5

**Table 3.4**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
08 Sep 2020	IC							
14 Sep 2020	IC							
21 Sep 2020	IC							
28 Sep 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.5**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
08 Sep 2020	IC							
14 Sep 2020	IC							
21 Sep 2020	IC							
28 Sep 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.6**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
08 Sep 2020	IC							
14 Sep 2020	IC							
21 Sep 2020	IC							
28 Sep 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.7**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
08 Sep 2020	IC							
14 Sep 2020	IC							
21 Sep 2020	IC							
28 Sep 2020	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.8**

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

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
A1	08 Sep 2020	807	1	<2	<2	<2	1.0	21.4	83.59	7.6	33.62	8.1
A1	08 Sep 2020	807	12	84	38e	<2	0.5	16.4	82.69	7.6	33.48	8.0
A1	08 Sep 2020	807	18	<20	<2	<2	0.1	15.3	83.90	7.2	33.49	8.0
A1	14 Sep 2020	750	1	<2	2e	<2	1.0	18.9	78.17	8.5	33.50	8.2
A1	14 Sep 2020	750	12	<2	<2	<2	1.0	17.1	84.27	7.9	33.50	8.1
A1	14 Sep 2020	750	18	<2	<2	<2	1.0	14.6	86.56	7.3	33.45	8.0
A1	21 Sep 2020	848	1	<2	<2	<2	1.0	16.9	81.87	8.0	33.49	8.0
A1	21 Sep 2020	848	12	8e	<2	<2	0.2	15.1	82.56	7.3	33.49	8.0
A1	21 Sep 2020	848	18	16e	2e	<2	0.1	13.8	87.78	6.7	33.49	7.9
A1	28 Sep 2020	805	1	<2	<2	<2	1.0	19.6	82.46	7.5	33.57	8.1
A1	28 Sep 2020	805	12	2e	<2	<2	1.0	18.5	84.73	7.8	33.54	8.1
A1	28 Sep 2020	805	18	2e	<2	<2	1.0	16.6	83.94	7.7	33.51	8.1
A6	08 Sep 2020	830	1	<2	<2	<2	1.0	22.0	88.14	7.5	33.66	8.2
A6	08 Sep 2020	830	12	<2	<2	<2	1.0	16.2	81.56	7.9	33.50	8.1
A6	08 Sep 2020	830	18	<2	<2	<2	1.0	15.0	85.92	7.2	33.53	8.1
A6	14 Sep 2020	817	1	<2	<2	<2	1.0	19.8	84.62	8.5	33.53	8.2
A6	14 Sep 2020	817	12	<2	<2	<2	1.0	14.9	82.95	7.5	33.46	8.0
A6	14 Sep 2020	817	18	4e	2e	<2	0.5	14.2	86.87	6.9	33.48	8.0
A6	21 Sep 2020	914	1	2e	<2	<2	1.0	19.8	83.88	7.8	33.57	8.1
A6	21 Sep 2020	914	12	6e	2e	<2	0.3	14.0	86.95	6.7	33.49	7.9
A6	21 Sep 2020	914	18	16e	2e	<2	0.1	13.9	87.28	6.7	33.49	7.9
A6	28 Sep 2020	834	1	<2	<2	<2	1.0	21.2	87.56	7.4	33.66	8.2
A6	28 Sep 2020	834	12	<2	<2	<2	1.0	18.1	84.45	7.5	33.54	8.1
A6	28 Sep 2020	834	18	2e	<2	<2	1.0	14.6	85.33	7.1	33.47	8.0
A7	08 Sep 2020	818	1	<2	<2	<2	1.0	21.6	88.50	7.5	33.64	8.2
A7	08 Sep 2020	818	12	2e	2e	<2	1.0	16.3	84.65	7.5	33.50	8.1
A7	08 Sep 2020	818	18	<2	2e	<2	1.0	15.2	85.77	7.1	33.50	8.0
A7	14 Sep 2020	806	1	<2	<2	<2	1.0	19.0	84.13	8.4	33.52	8.2
A7	14 Sep 2020	806	12	<2	<2	<2	1.0	17.4	83.49	8.2	33.51	8.1
A7	14 Sep 2020	806	18	2e	<2	<2	1.0	14.8	85.49	7.2	33.48	8.0
A7	21 Sep 2020	902	1	2e	<2	<2	1.0	19.3	72.65	8.1	33.56	8.1
A7	21 Sep 2020	902	12	4e	<2	<2	0.5	14.1	85.72	7.0	33.48	7.9
A7	21 Sep 2020	902	18	12e	<2	<2	0.2	13.8	86.84	6.8	33.48	7.9
A7	28 Sep 2020	819	1	2e	<2	<2	1.0	20.9	87.57	7.4	33.65	8.2
A7	28 Sep 2020	819	12	<2	<2	<2	1.0	18.5	83.59	7.5	33.55	8.1
A7	28 Sep 2020	819	18	<2	<2	<2	1.0	15.6	83.57	7.7	33.46	8.1
C4	08 Sep 2020	933	1	<2	<2	<2	1.0	20.9	84.99	7.4	33.58	8.1
C4	08 Sep 2020	933	3	<2	<2	<2	1.0	20.2	83.87	7.2	33.55	8.1
C4	08 Sep 2020	933	9	<2	<2	<2	1.0	17.7	82.27	7.3	33.47	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C4	14 Sep 2020	923	1	<2	<2	<2	1.0	20.5	84.02	8.1	33.56	8.2
C4	14 Sep 2020	923	3	<2	<2	<2	1.0	20.3	83.80	7.8	33.56	8.2
C4	14 Sep 2020	923	9	<2	2e	<2	1.0	15.9	82.00	4.2	33.48	7.8
C4	21 Sep 2020	1036	1	<2	<2	<20	1.0	19.7	82.12	7.6	33.55	8.1
C4	21 Sep 2020	1036	3	<2	<2	<2	1.0	18.5	80.66	7.1	33.56	8.1
C4	21 Sep 2020	1036	9	2e	<2	<2	1.0	14.9	76.89	5.0	33.49	7.8
C4	28 Sep 2020	945	1	<2	<2	<2	1.0	21.1	67.27	6.7	33.65	8.1
C4	28 Sep 2020	945	3	<2	<2	<2	1.0	21.0	66.97	7.0	33.65	8.1
C4	28 Sep 2020	945	9	<2	<2	<2	1.0	17.3	80.61	5.0	33.57	8.0
C5	08 Sep 2020	924	1	<2	2e	<2	1.0	21.4	84.96	7.2	33.61	8.2
C5	08 Sep 2020	924	3	<2	<2	<2	1.0	21.4	85.35	7.2	33.61	8.2
C5	08 Sep 2020	924	9	2e	<2	<2	1.0	18.9	83.57	6.9	33.53	8.1
C5	14 Sep 2020	914	1	<2	<2	<2	1.0	20.2	81.41	8.2	33.55	8.2
C5	14 Sep 2020	914	3	<2	<2	<2	1.0	19.5	82.50	8.4	33.53	8.2
C5	14 Sep 2020	914	9	<2	<2	<2	1.0	16.8	83.02	7.4	33.51	8.1
C5	21 Sep 2020	1024	1	<2	<2	<2	1.0	20.1	82.49	7.6	33.56	8.1
C5	21 Sep 2020	1024	3	<2	<2	<2	1.0	18.8	82.30	7.6	33.56	8.1
C5	21 Sep 2020	1024	9	<2	<2	<2	1.0	15.1	82.70	6.7	33.49	8.0
C5	28 Sep 2020	934	1	<2	<2	<2	1.0	21.3	86.31	7.3	33.66	8.2
C5	28 Sep 2020	934	3	2e	<2	<2	1.0	20.9	86.51	7.4	33.65	8.2
C5	28 Sep 2020	934	9	<2	<2	<2	1.0	18.2	83.25	6.9	33.56	8.1
C6	08 Sep 2020	913	1	<2	<2	<2	1.0	21.9	88.18	7.4	33.64	8.2
C6	08 Sep 2020	913	3	<20	<2	<2	0.1	21.8	88.35	7.2	33.63	8.2
C6	08 Sep 2020	913	9	<2	<2	<2	1.0	19.3	78.04	6.6	33.52	8.1
C6	14 Sep 2020	904	1	<2	<2	<2	1.0	20.2	82.45	7.9	33.55	8.2
C6	14 Sep 2020	904	3	<2	<2	<2	1.0	19.7	82.34	7.9	33.61	8.2
C6	14 Sep 2020	904	9	<2	<2	<2	1.0	15.9	82.82	6.8	33.55	8.0
C6	21 Sep 2020	1010	1	<2	<2	<2	1.0	20.7	87.15	7.7	33.60	8.1
C6	21 Sep 2020	1010	3	<2	<2	<2	1.0	19.8	83.55	7.5	33.58	8.1
C6	21 Sep 2020	1010	9	<2	<2	<2	1.0	15.0	83.55	6.3	33.50	7.9
C6	28 Sep 2020	923	1	<2	<2	<2	1.0	21.2	80.91	6.7	33.66	8.1
C6	28 Sep 2020	923	3	<2	2e	<2	1.0	21.2	80.84	6.7	33.66	8.1
C6	28 Sep 2020	923	9	<2	<2	<2	1.0	16.9	82.65	6.0	33.54	8.0
C7	08 Sep 2020	845	1	<2	<2	<2	1.0	22.2	90.40	7.4	33.68	8.2
C7	08 Sep 2020	845	12	<2	<2	<2	1.0	16.6	86.80	7.1	33.63	8.1
C7	08 Sep 2020	845	18	<2	<2	<2	1.0	15.0	84.84	7.5	33.49	8.1
C7	14 Sep 2020	832	1	2e	<2	<2	1.0	19.6	82.26	8.2	33.54	8.2
C7	14 Sep 2020	832	12	<2	<2	<2	1.0	14.4	84.47	7.3	33.46	8.0
C7	14 Sep 2020	832	18	<2	<2	<2	1.0	13.9	89.80	6.5	33.49	8.0
C7	21 Sep 2020	935	1	<2	<2	<2	1.0	20.6	85.37	7.7	33.60	8.1
C7	21 Sep 2020	935	12	<2	<2	<2	1.0	15.5	83.01	7.8	33.51	8.1
C7	21 Sep 2020	935	18	<2	<2	<2	1.0	14.1	86.99	6.9	33.49	8.0
C7	28 Sep 2020	849	1	<2	<2	<2	1.0	21.6	86.46	7.4	33.67	8.2
C7	28 Sep 2020	849	12	<2	<2	2e	1.0	16.5	85.14	7.7	33.49	8.1
C7	28 Sep 2020	849	18	<2	<2	<2	1.0	14.2	85.71	7.2	33.45	8.0
C8	08 Sep 2020	855	1	<2	<2	<2	1.0	22.1	91.29	7.4	33.69	8.2

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C8	08 Sep 2020	855	12	2e	<2	<2	1.0	18.6	87.33	7.6	33.58	8.2
C8	08 Sep 2020	855	18	<2	<2	<2	1.0	14.9	86.32	7.3	33.49	8.1
C8	14 Sep 2020	845	1	<2	<2	<2	1.0	19.0	80.80	8.1	33.55	8.1
C8	14 Sep 2020	845	12	<2	<2	<2	1.0	16.6	78.45	8.0	33.49	8.1
C8	14 Sep 2020	845	18	<2	<2	<2	1.0	14.0	85.62	6.9	33.48	8.0
C8	21 Sep 2020	949	1	4e	<2	<2	0.5	21.8	88.80	7.6	33.66	8.2
C8	21 Sep 2020	949	12	<2	<2	<2	1.0	16.0	82.88	7.9	33.48	8.1
C8	21 Sep 2020	949	18	<2	<2	ns	1.0	14.3	85.88	6.8	33.48	8.0
C8	28 Sep 2020	902	1	6e	<2	6e	0.3	21.5	85.55	7.6	33.66	8.2
C8	28 Sep 2020	902	12	<2	<2	2e	1.0	15.9	83.99	7.4	33.48	8.1
C8	28 Sep 2020	902	18	<2	4e	<2	2.0	14.4	85.82	7.1	33.45	8.0

ns = not sampled

ND = no data

**Table 3.9**

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

Station	Date	Parameter	Value
A1	08 Sep 2020	Depth (m)	18
A1	08 Sep 2020	Arrive Time	807
A1	08 Sep 2020	Depart Time	811
A1	08 Sep 2020	Air Temp (C)	22
A1	08 Sep 2020	Weather	Overcast
A1	08 Sep 2020	Visibility (mi)	5
A1	08 Sep 2020	Wind Speed (kts)	5
A1	08 Sep 2020	Wind Dir	S
A1	08 Sep 2020	Water Color	Green
A1	08 Sep 2020	Wave Ht Low (ft)	4
A1	08 Sep 2020	Wave Period (sec)	16
A1	08 Sep 2020	Sea State	Wind ripples
A1	08 Sep 2020	High Tide (ft)	4.48
A1	08 Sep 2020	High Tide Time	1303
A1	08 Sep 2020	Low Tide (ft)	2.21
A1	08 Sep 2020	Low Tide Time	624
A1	08 Sep 2020	Comments	Kelp
A1	14 Sep 2020	Depth (m)	20
A1	14 Sep 2020	Arrive Time	750
A1	14 Sep 2020	Depart Time	757
A1	14 Sep 2020	Air Temp (C)	19
A1	14 Sep 2020	Weather	Partly Cloudy
A1	14 Sep 2020	Visibility (mi)	5
A1	14 Sep 2020	Wind Speed (kts)	4
A1	14 Sep 2020	Wind Dir	N
A1	14 Sep 2020	Water Color	Brownish-Green
A1	14 Sep 2020	Wave Ht Low (ft)	3
A1	14 Sep 2020	Wave Period (sec)	9
A1	14 Sep 2020	Sea State	Calm
A1	14 Sep 2020	High Tide (ft)	4.33
A1	14 Sep 2020	High Tide Time	819
A1	14 Sep 2020	Low Tide (ft)	1.87
A1	14 Sep 2020	Low Tide Time	1337
A1	14 Sep 2020	Comments	none
A1	21 Sep 2020	Depth (m)	18
A1	21 Sep 2020	Arrive Time	848
A1	21 Sep 2020	Depart Time	851
A1	21 Sep 2020	Air Temp (C)	18
A1	21 Sep 2020	Weather	Continuous layer of clouds
A1	21 Sep 2020	Visibility (mi)	4
A1	21 Sep 2020	Wind Speed (kts)	4
A1	21 Sep 2020	Wind Dir	S
A1	21 Sep 2020	Water Color	Greenish-Blue
A1	21 Sep 2020	Wave Ht Low (ft)	3
A1	21 Sep 2020	Wave Period (sec)	13
A1	21 Sep 2020	Sea State	Light chop
A1	21 Sep 2020	High Tide (ft)	5.69
A1	21 Sep 2020	High Tide Time	1221
A1	21 Sep 2020	Low Tide (ft)	1.43
A1	21 Sep 2020	Low Tide Time	604
A1	21 Sep 2020	Comments	Kelp
A1	28 Sep 2020	Depth (m)	19
A1	28 Sep 2020	Arrive Time	805

Station	Date	Parameter	Value
A1	28 Sep 2020	Depart Time	810
A1	28 Sep 2020	Air Temp (C)	20
A1	28 Sep 2020	Weather	Clear
A1	28 Sep 2020	Visibility (mi)	12
A1	28 Sep 2020	Wind Speed (kts)	8
A1	28 Sep 2020	Wind Dir	N
A1	28 Sep 2020	Water Color	Bluish-Green
A1	28 Sep 2020	Wave Ht Low (ft)	3
A1	28 Sep 2020	Wave Period (sec)	9
A1	28 Sep 2020	Sea State	Calm
A1	28 Sep 2020	High Tide (ft)	4.72
A1	28 Sep 2020	High Tide Time	827
A1	28 Sep 2020	Low Tide (ft)	1.57
A1	28 Sep 2020	Low Tide Time	1408
A1	28 Sep 2020	Comments	none
A6	08 Sep 2020	Depth (m)	18
A6	08 Sep 2020	Arrive Time	830
A6	08 Sep 2020	Depart Time	837
A6	08 Sep 2020	Air Temp (C)	22
A6	08 Sep 2020	Weather	Overcast
A6	08 Sep 2020	Visibility (mi)	5
A6	08 Sep 2020	Wind Speed (kts)	11
A6	08 Sep 2020	Wind Dir	SE
A6	08 Sep 2020	Water Color	Green
A6	08 Sep 2020	Wave Ht Low (ft)	4
A6	08 Sep 2020	Wave Period (sec)	16
A6	08 Sep 2020	Sea State	Wind ripples
A6	08 Sep 2020	High Tide (ft)	4.48
A6	08 Sep 2020	High Tide Time	1303
A6	08 Sep 2020	Low Tide (ft)	2.21
A6	08 Sep 2020	Low Tide Time	624
A6	08 Sep 2020	Comments	Kelp debris
A6	14 Sep 2020	Depth (m)	18
A6	14 Sep 2020	Arrive Time	817
A6	14 Sep 2020	Depart Time	825
A6	14 Sep 2020	Air Temp (C)	20
A6	14 Sep 2020	Weather	Partly Cloudy
A6	14 Sep 2020	Visibility (mi)	5
A6	14 Sep 2020	Wind Speed (kts)	6
A6	14 Sep 2020	Wind Dir	NW
A6	14 Sep 2020	Water Color	Green
A6	14 Sep 2020	Wave Ht Low (ft)	2
A6	14 Sep 2020	Wave Period (sec)	9
A6	14 Sep 2020	Sea State	Calm
A6	14 Sep 2020	High Tide (ft)	4.33
A6	14 Sep 2020	High Tide Time	819
A6	14 Sep 2020	Low Tide (ft)	1.87
A6	14 Sep 2020	Low Tide Time	1337
A6	14 Sep 2020	Comments	Kelp
A6	21 Sep 2020	Depth (m)	20
A6	21 Sep 2020	Arrive Time	914
A6	21 Sep 2020	Depart Time	918
A6	21 Sep 2020	Air Temp (C)	19
A6	21 Sep 2020	Weather	Continuous layer of clouds
A6	21 Sep 2020	Visibility (mi)	4
A6	21 Sep 2020	Wind Speed (kts)	4
A6	21 Sep 2020	Wind Dir	SW
A6	21 Sep 2020	Water Color	Greenish-Blue

Station	Date	Parameter	Value
A6	21 Sep 2020	Wave Ht Low (ft)	3
A6	21 Sep 2020	Wave Period (sec)	11
A6	21 Sep 2020	Sea State	Light chop
A6	21 Sep 2020	High Tide (ft)	5.69
A6	21 Sep 2020	High Tide Time	1221
A6	21 Sep 2020	Low Tide (ft)	1.43
A6	21 Sep 2020	Low Tide Time	604
A6	21 Sep 2020	Comments	Kelp
A6	28 Sep 2020	Depth (m)	19
A6	28 Sep 2020	Arrive Time	834
A6	28 Sep 2020	Depart Time	837
A6	28 Sep 2020	Air Temp (C)	19
A6	28 Sep 2020	Weather	Clear
A6	28 Sep 2020	Visibility (mi)	12
A6	28 Sep 2020	Wind Speed (kts)	9
A6	28 Sep 2020	Wind Dir	N
A6	28 Sep 2020	Water Color	Bluish-Green
A6	28 Sep 2020	Wave Ht Low (ft)	3
A6	28 Sep 2020	Wave Period (sec)	9
A6	28 Sep 2020	Sea State	Calm
A6	28 Sep 2020	High Tide (ft)	4.72
A6	28 Sep 2020	High Tide Time	827
A6	28 Sep 2020	Low Tide (ft)	1.57
A6	28 Sep 2020	Low Tide Time	1408
A6	28 Sep 2020	Comments	none
A7	08 Sep 2020	Depth (m)	17
A7	08 Sep 2020	Arrive Time	818
A7	08 Sep 2020	Depart Time	824
A7	08 Sep 2020	Air Temp (C)	22
A7	08 Sep 2020	Weather	Overcast
A7	08 Sep 2020	Visibility (mi)	5
A7	08 Sep 2020	Wind Speed (kts)	8
A7	08 Sep 2020	Wind Dir	S
A7	08 Sep 2020	Water Color	Green
A7	08 Sep 2020	Wave Ht Low (ft)	4
A7	08 Sep 2020	Wave Period (sec)	16
A7	08 Sep 2020	Sea State	Wind ripples
A7	08 Sep 2020	High Tide (ft)	4.48
A7	08 Sep 2020	High Tide Time	1303
A7	08 Sep 2020	Low Tide (ft)	2.21
A7	08 Sep 2020	Low Tide Time	624
A7	08 Sep 2020	Comments	Kelp
A7	14 Sep 2020	Depth (m)	19
A7	14 Sep 2020	Arrive Time	806
A7	14 Sep 2020	Depart Time	810
A7	14 Sep 2020	Air Temp (C)	20
A7	14 Sep 2020	Weather	Partly Cloudy
A7	14 Sep 2020	Visibility (mi)	5
A7	14 Sep 2020	Wind Speed (kts)	6
A7	14 Sep 2020	Wind Dir	N
A7	14 Sep 2020	Water Color	Green
A7	14 Sep 2020	Wave Ht Low (ft)	2
A7	14 Sep 2020	Wave Period (sec)	9
A7	14 Sep 2020	Sea State	Calm
A7	14 Sep 2020	High Tide (ft)	4.33
A7	14 Sep 2020	High Tide Time	819
A7	14 Sep 2020	Low Tide (ft)	1.87
A7	14 Sep 2020	Low Tide Time	1337

Station	Date	Parameter	Value
A7	14 Sep 2020	Comments	none
A7	21 Sep 2020	Depth (m)	18
A7	21 Sep 2020	Arrive Time	902
A7	21 Sep 2020	Depart Time	905
A7	21 Sep 2020	Air Temp (C)	19
A7	21 Sep 2020	Weather	Continuous layer of clouds
A7	21 Sep 2020	Visibility (mi)	4
A7	21 Sep 2020	Wind Speed (kts)	4
A7	21 Sep 2020	Wind Dir	S
A7	21 Sep 2020	Water Color	Greenish-Blue
A7	21 Sep 2020	Wave Ht Low (ft)	3
A7	21 Sep 2020	Wave Period (sec)	13
A7	21 Sep 2020	Sea State	Light chop
A7	21 Sep 2020	High Tide (ft)	5.69
A7	21 Sep 2020	High Tide Time	1221
A7	21 Sep 2020	Low Tide (ft)	1.43
A7	21 Sep 2020	Low Tide Time	604
A7	21 Sep 2020	Comments	Kelp
A7	28 Sep 2020	Depth (m)	18
A7	28 Sep 2020	Arrive Time	819
A7	28 Sep 2020	Depart Time	823
A7	28 Sep 2020	Air Temp (C)	20
A7	28 Sep 2020	Weather	Clear
A7	28 Sep 2020	Visibility (mi)	12
A7	28 Sep 2020	Wind Speed (kts)	7
A7	28 Sep 2020	Wind Dir	NW
A7	28 Sep 2020	Water Color	Bluish-Green
A7	28 Sep 2020	Wave Ht Low (ft)	3
A7	28 Sep 2020	Wave Period (sec)	9
A7	28 Sep 2020	Sea State	Calm
A7	28 Sep 2020	High Tide (ft)	4.72
A7	28 Sep 2020	High Tide Time	827
A7	28 Sep 2020	Low Tide (ft)	1.57
A7	28 Sep 2020	Low Tide Time	1408
A7	28 Sep 2020	Comments	none
C4	08 Sep 2020	Depth (m)	14
C4	08 Sep 2020	Arrive Time	933
C4	08 Sep 2020	Depart Time	939
C4	08 Sep 2020	Air Temp (C)	21
C4	08 Sep 2020	Weather	Overcast
C4	08 Sep 2020	Visibility (mi)	5
C4	08 Sep 2020	Wind Speed (kts)	4
C4	08 Sep 2020	Wind Dir	E
C4	08 Sep 2020	Water Color	Green
C4	08 Sep 2020	Wave Ht Low (ft)	4
C4	08 Sep 2020	Wave Period (sec)	16
C4	08 Sep 2020	Sea State	Wind ripples
C4	08 Sep 2020	High Tide (ft)	4.48
C4	08 Sep 2020	High Tide Time	1303
C4	08 Sep 2020	Low Tide (ft)	2.21
C4	08 Sep 2020	Low Tide Time	624
C4	08 Sep 2020	Comments	none
C4	14 Sep 2020	Depth (m)	10
C4	14 Sep 2020	Arrive Time	923
C4	14 Sep 2020	Depart Time	946
C4	14 Sep 2020	Air Temp (C)	21
C4	14 Sep 2020	Weather	Partly Cloudy

Station	Date	Parameter	Value
C4	14 Sep 2020	Visibility (mi)	5
C4	14 Sep 2020	Wind Speed (kts)	3
C4	14 Sep 2020	Wind Dir	SE
C4	14 Sep 2020	Water Color	Green
C4	14 Sep 2020	Wave Ht Low (ft)	2
C4	14 Sep 2020	Wave Period (sec)	9
C4	14 Sep 2020	Sea State	Calm
C4	14 Sep 2020	High Tide (ft)	4.33
C4	14 Sep 2020	High Tide Time	819
C4	14 Sep 2020	Low Tide (ft)	1.87
C4	14 Sep 2020	Low Tide Time	1337
C4	14 Sep 2020	Comments	Kelp
C4	21 Sep 2020	Depth (m)	10
C4	21 Sep 2020	Arrive Time	1036
C4	21 Sep 2020	Depart Time	1038
C4	21 Sep 2020	Air Temp (C)	20
C4	21 Sep 2020	Weather	Partly Cloudy
C4	21 Sep 2020	Visibility (mi)	8
C4	21 Sep 2020	Wind Speed (kts)	4
C4	21 Sep 2020	Wind Dir	W
C4	21 Sep 2020	Water Color	Green
C4	21 Sep 2020	Wave Ht Low (ft)	2
C4	21 Sep 2020	Wave Period (sec)	11
C4	21 Sep 2020	Sea State	Light chop
C4	21 Sep 2020	High Tide (ft)	5.69
C4	21 Sep 2020	High Tide Time	1221
C4	21 Sep 2020	Low Tide (ft)	1.43
C4	21 Sep 2020	Low Tide Time	604
C4	21 Sep 2020	Comments	none
C4	28 Sep 2020	Depth (m)	10
C4	28 Sep 2020	Arrive Time	945
C4	28 Sep 2020	Depart Time	948
C4	28 Sep 2020	Air Temp (C)	19
C4	28 Sep 2020	Weather	Haze
C4	28 Sep 2020	Visibility (mi)	9
C4	28 Sep 2020	Wind Speed (kts)	8
C4	28 Sep 2020	Wind Dir	N
C4	28 Sep 2020	Water Color	Bluish-Green
C4	28 Sep 2020	Wave Ht Low (ft)	3
C4	28 Sep 2020	Wave Period (sec)	9
C4	28 Sep 2020	Sea State	Calm
C4	28 Sep 2020	High Tide (ft)	4.72
C4	28 Sep 2020	High Tide Time	827
C4	28 Sep 2020	Low Tide (ft)	1.57
C4	28 Sep 2020	Low Tide Time	1408
C4	28 Sep 2020	Comments	none
C5	08 Sep 2020	Depth (m)	9
C5	08 Sep 2020	Arrive Time	924
C5	08 Sep 2020	Depart Time	929
C5	08 Sep 2020	Air Temp (C)	21
C5	08 Sep 2020	Weather	Overcast
C5	08 Sep 2020	Visibility (mi)	5
C5	08 Sep 2020	Wind Speed (kts)	6
C5	08 Sep 2020	Wind Dir	E
C5	08 Sep 2020	Water Color	Green
C5	08 Sep 2020	Wave Ht Low (ft)	4
C5	08 Sep 2020	Wave Period (sec)	16
C5	08 Sep 2020	Sea State	Wind ripples

Station	Date	Parameter	Value
C5	08 Sep 2020	High Tide (ft)	4.48
C5	08 Sep 2020	High Tide Time	1303
C5	08 Sep 2020	Low Tide (ft)	2.21
C5	08 Sep 2020	Low Tide Time	624
C5	08 Sep 2020	Comments	none
C5	14 Sep 2020	Depth (m)	10
C5	14 Sep 2020	Arrive Time	914
C5	14 Sep 2020	Depart Time	918
C5	14 Sep 2020	Air Temp (C)	20
C5	14 Sep 2020	Weather	Partly Cloudy
C5	14 Sep 2020	Visibility (mi)	5
C5	14 Sep 2020	Wind Speed (kts)	2
C5	14 Sep 2020	Wind Dir	NE
C5	14 Sep 2020	Water Color	Green
C5	14 Sep 2020	Wave Ht Low (ft)	2
C5	14 Sep 2020	Wave Period (sec)	9
C5	14 Sep 2020	Sea State	Calm
C5	14 Sep 2020	High Tide (ft)	4.33
C5	14 Sep 2020	High Tide Time	819
C5	14 Sep 2020	Low Tide (ft)	1.87
C5	14 Sep 2020	Low Tide Time	1337
C5	14 Sep 2020	Comments	none
C5	21 Sep 2020	Depth (m)	10
C5	21 Sep 2020	Arrive Time	1024
C5	21 Sep 2020	Depart Time	1026
C5	21 Sep 2020	Air Temp (C)	20
C5	21 Sep 2020	Weather	Partly Cloudy
C5	21 Sep 2020	Visibility (mi)	7
C5	21 Sep 2020	Wind Speed (kts)	4
C5	21 Sep 2020	Wind Dir	W
C5	21 Sep 2020	Water Color	Green
C5	21 Sep 2020	Wave Ht Low (ft)	2
C5	21 Sep 2020	Wave Period (sec)	11
C5	21 Sep 2020	Sea State	Light chop
C5	21 Sep 2020	High Tide (ft)	5.69
C5	21 Sep 2020	High Tide Time	1221
C5	21 Sep 2020	Low Tide (ft)	1.43
C5	21 Sep 2020	Low Tide Time	604
C5	21 Sep 2020	Comments	none
C5	28 Sep 2020	Depth (m)	9
C5	28 Sep 2020	Arrive Time	934
C5	28 Sep 2020	Depart Time	938
C5	28 Sep 2020	Air Temp (C)	19
C5	28 Sep 2020	Weather	Haze
C5	28 Sep 2020	Visibility (mi)	9
C5	28 Sep 2020	Wind Speed (kts)	12
C5	28 Sep 2020	Wind Dir	N
C5	28 Sep 2020	Water Color	Bluish-Green
C5	28 Sep 2020	Wave Ht Low (ft)	3
C5	28 Sep 2020	Wave Period (sec)	9
C5	28 Sep 2020	Sea State	Calm
C5	28 Sep 2020	High Tide (ft)	4.72
C5	28 Sep 2020	High Tide Time	827
C5	28 Sep 2020	Low Tide (ft)	1.57
C5	28 Sep 2020	Low Tide Time	1408
C5	28 Sep 2020	Comments	none
C6	08 Sep 2020	Depth (m)	9

Station	Date	Parameter	Value
C6	08 Sep 2020	Arrive Time	913
C6	08 Sep 2020	Depart Time	918
C6	08 Sep 2020	Air Temp (C)	22
C6	08 Sep 2020	Weather	Overcast
C6	08 Sep 2020	Visibility (mi)	5
C6	08 Sep 2020	Wind Speed (kts)	6
C6	08 Sep 2020	Wind Dir	E
C6	08 Sep 2020	Water Color	Green
C6	08 Sep 2020	Wave Ht Low (ft)	4
C6	08 Sep 2020	Wave Period (sec)	16
C6	08 Sep 2020	Sea State	Wind ripples
C6	08 Sep 2020	High Tide (ft)	4.48
C6	08 Sep 2020	High Tide Time	1303
C6	08 Sep 2020	Low Tide (ft)	2.21
C6	08 Sep 2020	Low Tide Time	624
C6	08 Sep 2020	Comments	none
C6	14 Sep 2020	Depth (m)	10
C6	14 Sep 2020	Arrive Time	904
C6	14 Sep 2020	Depart Time	909
C6	14 Sep 2020	Air Temp (C)	20
C6	14 Sep 2020	Weather	Partly Cloudy
C6	14 Sep 2020	Visibility (mi)	5
C6	14 Sep 2020	Wind Speed (kts)	7
C6	14 Sep 2020	Wind Dir	NW
C6	14 Sep 2020	Water Color	Green
C6	14 Sep 2020	Wave Ht Low (ft)	2
C6	14 Sep 2020	Wave Period (sec)	9
C6	14 Sep 2020	Sea State	Calm
C6	14 Sep 2020	High Tide (ft)	4.33
C6	14 Sep 2020	High Tide Time	819
C6	14 Sep 2020	Low Tide (ft)	1.87
C6	14 Sep 2020	Low Tide Time	1337
C6	14 Sep 2020	Comments	none
C6	21 Sep 2020	Depth (m)	9
C6	21 Sep 2020	Arrive Time	1010
C6	21 Sep 2020	Depart Time	1013
C6	21 Sep 2020	Air Temp (C)	20
C6	21 Sep 2020	Weather	Partly Cloudy
C6	21 Sep 2020	Visibility (mi)	7
C6	21 Sep 2020	Wind Speed (kts)	3
C6	21 Sep 2020	Wind Dir	W
C6	21 Sep 2020	Water Color	Green
C6	21 Sep 2020	Wave Ht Low (ft)	2
C6	21 Sep 2020	Wave Period (sec)	11
C6	21 Sep 2020	Sea State	Light chop
C6	21 Sep 2020	High Tide (ft)	5.69
C6	21 Sep 2020	High Tide Time	1221
C6	21 Sep 2020	Low Tide (ft)	1.43
C6	21 Sep 2020	Low Tide Time	604
C6	21 Sep 2020	Comments	Kelp
C6	28 Sep 2020	Depth (m)	9
C6	28 Sep 2020	Arrive Time	923
C6	28 Sep 2020	Depart Time	927
C6	28 Sep 2020	Air Temp (C)	19
C6	28 Sep 2020	Weather	Haze
C6	28 Sep 2020	Visibility (mi)	9
C6	28 Sep 2020	Wind Speed (kts)	11
C6	28 Sep 2020	Wind Dir	N

Station	Date	Parameter	Value
C6	28 Sep 2020	Water Color	Bluish-Green
C6	28 Sep 2020	Wave Ht Low (ft)	3
C6	28 Sep 2020	Wave Period (sec)	9
C6	28 Sep 2020	Sea State	Calm
C6	28 Sep 2020	High Tide (ft)	4.72
C6	28 Sep 2020	High Tide Time	827
C6	28 Sep 2020	Low Tide (ft)	1.57
C6	28 Sep 2020	Low Tide Time	1408
C6	28 Sep 2020	Comments	none
C7	08 Sep 2020	Depth (m)	18
C7	08 Sep 2020	Arrive Time	845
C7	08 Sep 2020	Depart Time	850
C7	08 Sep 2020	Air Temp (C)	22
C7	08 Sep 2020	Weather	Overcast
C7	08 Sep 2020	Visibility (mi)	5
C7	08 Sep 2020	Wind Speed (kts)	10
C7	08 Sep 2020	Wind Dir	SE
C7	08 Sep 2020	Water Color	Green
C7	08 Sep 2020	Wave Ht Low (ft)	4
C7	08 Sep 2020	Wave Period (sec)	16
C7	08 Sep 2020	Sea State	Wind ripples
C7	08 Sep 2020	High Tide (ft)	4.48
C7	08 Sep 2020	High Tide Time	1303
C7	08 Sep 2020	Low Tide (ft)	2.21
C7	08 Sep 2020	Low Tide Time	624
C7	08 Sep 2020	Comments	Kelp debris; Kelp
C7	14 Sep 2020	Depth (m)	19
C7	14 Sep 2020	Arrive Time	832
C7	14 Sep 2020	Depart Time	836
C7	14 Sep 2020	Air Temp (C)	20
C7	14 Sep 2020	Weather	Partly Cloudy
C7	14 Sep 2020	Visibility (mi)	5
C7	14 Sep 2020	Wind Speed (kts)	2
C7	14 Sep 2020	Wind Dir	N
C7	14 Sep 2020	Water Color	Green
C7	14 Sep 2020	Wave Ht Low (ft)	2
C7	14 Sep 2020	Wave Period (sec)	9
C7	14 Sep 2020	Sea State	Calm
C7	14 Sep 2020	High Tide (ft)	4.33
C7	14 Sep 2020	High Tide Time	819
C7	14 Sep 2020	Low Tide (ft)	1.87
C7	14 Sep 2020	Low Tide Time	1337
C7	14 Sep 2020	Comments	Kelp
C7	21 Sep 2020	Depth (m)	18
C7	21 Sep 2020	Arrive Time	935
C7	21 Sep 2020	Depart Time	937
C7	21 Sep 2020	Air Temp (C)	20
C7	21 Sep 2020	Weather	Continuous layer of clouds
C7	21 Sep 2020	Visibility (mi)	4
C7	21 Sep 2020	Wind Speed (kts)	3
C7	21 Sep 2020	Wind Dir	SW
C7	21 Sep 2020	Water Color	Greenish-Blue
C7	21 Sep 2020	Wave Ht Low (ft)	3
C7	21 Sep 2020	Wave Period (sec)	11
C7	21 Sep 2020	Sea State	Light chop
C7	21 Sep 2020	High Tide (ft)	5.69
C7	21 Sep 2020	High Tide Time	1221
C7	21 Sep 2020	Low Tide (ft)	1.43

Station	Date	Parameter	Value
C7	21 Sep 2020	Low Tide Time	604
C7	21 Sep 2020	Comments	Kelp
C7	28 Sep 2020	Depth (m)	18
C7	28 Sep 2020	Arrive Time	849
C7	28 Sep 2020	Depart Time	853
C7	28 Sep 2020	Air Temp (C)	19
C7	28 Sep 2020	Weather	Overcast
C7	28 Sep 2020	Visibility (mi)	12
C7	28 Sep 2020	Wind Speed (kts)	8
C7	28 Sep 2020	Wind Dir	N
C7	28 Sep 2020	Water Color	Bluish-Green
C7	28 Sep 2020	Wave Ht Low (ft)	3
C7	28 Sep 2020	Wave Period (sec)	9
C7	28 Sep 2020	Sea State	Calm
C7	28 Sep 2020	High Tide (ft)	4.72
C7	28 Sep 2020	High Tide Time	827
C7	28 Sep 2020	Low Tide (ft)	1.57
C7	28 Sep 2020	Low Tide Time	1408
C7	28 Sep 2020	Comments	none
C8	08 Sep 2020	Depth (m)	21
C8	08 Sep 2020	Arrive Time	855
C8	08 Sep 2020	Depart Time	900
C8	08 Sep 2020	Air Temp (C)	22
C8	08 Sep 2020	Weather	Overcast
C8	08 Sep 2020	Visibility (mi)	5
C8	08 Sep 2020	Wind Speed (kts)	7
C8	08 Sep 2020	Wind Dir	SE
C8	08 Sep 2020	Water Color	Green
C8	08 Sep 2020	Wave Ht Low (ft)	4
C8	08 Sep 2020	Wave Period (sec)	16
C8	08 Sep 2020	Sea State	Wind ripples
C8	08 Sep 2020	High Tide (ft)	4.48
C8	08 Sep 2020	High Tide Time	1303
C8	08 Sep 2020	Low Tide (ft)	2.21
C8	08 Sep 2020	Low Tide Time	624
C8	08 Sep 2020	Comments	Boats
C8	14 Sep 2020	Depth (m)	19
C8	14 Sep 2020	Arrive Time	845
C8	14 Sep 2020	Depart Time	849
C8	14 Sep 2020	Air Temp (C)	19
C8	14 Sep 2020	Weather	Partly Cloudy
C8	14 Sep 2020	Visibility (mi)	5
C8	14 Sep 2020	Wind Speed (kts)	7
C8	14 Sep 2020	Wind Dir	N
C8	14 Sep 2020	Water Color	Green
C8	14 Sep 2020	Wave Ht Low (ft)	2
C8	14 Sep 2020	Wave Period (sec)	9
C8	14 Sep 2020	Sea State	Calm
C8	14 Sep 2020	High Tide (ft)	4.33
C8	14 Sep 2020	High Tide Time	819
C8	14 Sep 2020	Low Tide (ft)	1.87
C8	14 Sep 2020	Low Tide Time	1337
C8	14 Sep 2020	Comments	none
C8	21 Sep 2020	Depth (m)	19
C8	21 Sep 2020	Arrive Time	949
C8	21 Sep 2020	Depart Time	951
C8	21 Sep 2020	Air Temp (C)	20

<b>Station</b>	<b>Date</b>	<b>Parameter</b>	<b>Value</b>
C8	21 Sep 2020	Weather	Continuous layer of clouds
C8	21 Sep 2020	Visibility (mi)	4
C8	21 Sep 2020	Wind Speed (kts)	3
C8	21 Sep 2020	Wind Dir	N
C8	21 Sep 2020	Water Color	Greenish-Blue
C8	21 Sep 2020	Wave Ht Low (ft)	3
C8	21 Sep 2020	Wave Period (sec)	11
C8	21 Sep 2020	Sea State	Light chop
C8	21 Sep 2020	High Tide (ft)	5.69
C8	21 Sep 2020	High Tide Time	1221
C8	21 Sep 2020	Low Tide (ft)	1.43
C8	21 Sep 2020	Low Tide Time	604
C8	21 Sep 2020	Comments	none
C8	28 Sep 2020	Depth (m)	19
C8	28 Sep 2020	Arrive Time	902
C8	28 Sep 2020	Depart Time	906
C8	28 Sep 2020	Air Temp (C)	19
C8	28 Sep 2020	Weather	Haze
C8	28 Sep 2020	Visibility (mi)	9
C8	28 Sep 2020	Wind Speed (kts)	8
C8	28 Sep 2020	Wind Dir	NW
C8	28 Sep 2020	Water Color	Bluish-Green
C8	28 Sep 2020	Wave Ht Low (ft)	3
C8	28 Sep 2020	Wave Period (sec)	9
C8	28 Sep 2020	Sea State	Calm
C8	28 Sep 2020	High Tide (ft)	4.72
C8	28 Sep 2020	High Tide Time	827
C8	28 Sep 2020	Low Tide (ft)	1.57
C8	28 Sep 2020	Low Tide Time	1408
C8	28 Sep 2020	Comments	none

**Table 3.10**

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
A1	08 Sep 2020	1	21.44	83.59	7.6	33.62	8.1	23.3	0.90
A1	08 Sep 2020	2	21.10	86.19	7.7	33.62	8.1	23.4	1.18
A1	08 Sep 2020	3	20.51	86.71	7.8	33.60	8.1	23.6	1.69
A1	08 Sep 2020	4	18.76	84.71	8.2	33.54	8.1	24.0	2.46
A1	08 Sep 2020	5	18.55	82.09	8.0	33.49	8.1	24.0	2.73
A1	08 Sep 2020	6	17.74	82.27	7.9	33.51	8.1	24.2	2.75
A1	08 Sep 2020	7	17.41	82.12	7.9	33.49	8.1	24.3	2.66
A1	08 Sep 2020	8	17.35	82.32	7.8	33.49	8.1	24.3	2.60
A1	08 Sep 2020	9	17.06	82.46	7.7	33.50	8.1	24.3	2.44
A1	08 Sep 2020	10	16.70	82.62	7.6	33.49	8.1	24.4	2.37
A1	08 Sep 2020	11	16.47	82.64	7.6	33.49	8.1	24.5	2.27
A1	08 Sep 2020	12	16.41	82.69	7.6	33.48	8.0	24.5	2.32
A1	08 Sep 2020	13	16.38	81.95	7.6	33.48	8.1	24.5	2.35
A1	08 Sep 2020	14	16.29	80.61	7.6	33.48	8.1	24.5	2.36
A1	08 Sep 2020	15	16.25	82.07	7.6	33.49	8.1	24.5	2.34
A1	08 Sep 2020	16	16.11	82.40	7.4	33.49	8.0	24.6	2.03
A1	08 Sep 2020	17	15.93	83.03	7.2	33.49	8.0	24.6	1.83
A1	08 Sep 2020	18	15.32	83.90	7.2	33.49	8.0	24.7	1.62
A1	14 Sep 2020	1	18.95	78.17	8.5	33.50	8.2	23.9	1.34
A1	14 Sep 2020	2	18.72	85.98	8.6	33.51	8.2	24.0	1.54
A1	14 Sep 2020	3	18.63	85.94	8.5	33.51	8.1	24.0	1.70
A1	14 Sep 2020	4	18.44	85.46	8.5	33.50	8.1	24.0	1.94
A1	14 Sep 2020	5	18.24	85.04	8.5	33.50	8.1	24.1	2.11
A1	14 Sep 2020	6	18.19	84.83	8.5	33.49	8.1	24.1	2.16
A1	14 Sep 2020	7	18.17	84.86	8.5	33.49	8.1	24.1	2.24
A1	14 Sep 2020	8	18.13	84.85	8.5	33.49	8.1	24.1	2.20
A1	14 Sep 2020	9	17.97	85.00	8.5	33.50	8.1	24.1	2.28
A1	14 Sep 2020	10	17.76	84.84	8.5	33.49	8.1	24.2	2.34
A1	14 Sep 2020	11	17.70	84.73	8.4	33.48	8.1	24.2	2.47
A1	14 Sep 2020	12	17.07	84.27	7.9	33.50	8.1	24.3	2.79
A1	14 Sep 2020	13	15.48	83.55	7.6	33.52	8.1	24.7	2.80
A1	14 Sep 2020	14	14.62	84.64	7.4	33.47	8.0	24.9	2.57
A1	14 Sep 2020	15	14.54	86.45	7.4	33.44	8.0	24.9	2.41
A1	14 Sep 2020	16	14.69	86.83	7.3	33.44	8.0	24.8	2.39
A1	14 Sep 2020	17	14.55	86.46	7.3	33.45	8.0	24.9	2.39
A1	14 Sep 2020	18	14.58	86.56	7.3	33.45	8.0	24.9	2.40
A1	14 Sep 2020	19	14.52	86.76	7.3	33.46	8.0	24.9	2.38
A1	21 Sep 2020	1	16.92	81.87	8.0	33.49	8.0	24.4	2.69
A1	21 Sep 2020	2	17.19	82.90	8.0	33.52	8.0	24.3	2.46
A1	21 Sep 2020	3	16.40	82.38	7.8	33.50	8.0	24.5	3.15
A1	21 Sep 2020	4	15.88	81.25	7.8	33.49	8.0	24.6	3.90
A1	21 Sep 2020	5	15.76	80.63	7.7	33.48	8.0	24.6	4.30
A1	21 Sep 2020	6	15.70	80.43	7.7	33.48	8.0	24.6	4.51
A1	21 Sep 2020	7	15.39	80.48	7.6	33.48	8.0	24.7	4.68
A1	21 Sep 2020	8	15.24	80.77	7.4	33.48	8.0	24.7	4.68
A1	21 Sep 2020	9	15.12	81.59	7.4	33.48	8.0	24.8	4.24
A1	21 Sep 2020	10	15.13	82.45	7.3	33.48	8.0	24.8	4.15
A1	21 Sep 2020	11	15.09	82.48	7.3	33.48	8.0	24.8	4.04
A1	21 Sep 2020	12	15.06	82.56	7.3	33.49	8.0	24.8	4.02
A1	21 Sep 2020	13	15.01	82.74	7.2	33.48	8.0	24.8	3.98
A1	21 Sep 2020	14	14.22	83.38	7.1	33.48	7.9	25.0	3.90
A1	21 Sep 2020	15	14.07	84.12	7.0	33.48	7.9	25.0	3.26
A1	21 Sep 2020	16	13.94	85.72	6.8	33.48	7.9	25.0	2.70
A1	21 Sep 2020	17	13.80	86.44	6.7	33.49	7.9	25.1	2.12

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A1	21 Sep 2020	18	13.80	87.78	6.7	33.49	7.9	25.1	1.80
A1	28 Sep 2020	1	19.64	82.46	7.5	33.57	8.1	23.8	1.39
A1	28 Sep 2020	2	19.62	82.29	7.5	33.57	8.1	23.8	1.51
A1	28 Sep 2020	3	19.60	82.11	7.5	33.57	8.1	23.8	1.70
A1	28 Sep 2020	4	19.57	81.91	7.5	33.56	8.1	23.8	1.81
A1	28 Sep 2020	5	19.56	81.79	7.5	33.56	8.1	23.8	1.87
A1	28 Sep 2020	6	19.54	81.70	7.5	33.56	8.1	23.8	1.88
A1	28 Sep 2020	7	19.53	81.76	7.5	33.56	8.1	23.8	1.88
A1	28 Sep 2020	8	19.49	81.85	7.5	33.56	8.1	23.8	1.86
A1	28 Sep 2020	9	19.46	82.10	7.5	33.55	8.1	23.8	1.83
A1	28 Sep 2020	10	19.28	82.49	7.5	33.55	8.1	23.8	1.80
A1	28 Sep 2020	11	18.84	83.54	7.7	33.55	8.1	24.0	1.87
A1	28 Sep 2020	12	18.50	84.73	7.8	33.54	8.1	24.0	1.94
A1	28 Sep 2020	13	18.26	84.77	7.8	33.53	8.1	24.1	2.07
A1	28 Sep 2020	14	18.20	84.75	7.8	33.52	8.1	24.1	2.07
A1	28 Sep 2020	15	18.07	84.69	7.8	33.52	8.1	24.1	2.12
A1	28 Sep 2020	16	18.12	84.71	7.8	33.51	8.1	24.1	2.13
A1	28 Sep 2020	17	17.65	84.68	7.7	33.53	8.1	24.2	2.26
A1	28 Sep 2020	18	16.65	83.94	7.7	33.51	8.1	24.5	2.49
A1	28 Sep 2020	19	16.19	83.16	7.6	33.48	8.1	24.5	2.53
A1	28 Sep 2020	20	15.55	83.30	7.5	33.47	8.1	24.7	2.36
A6	08 Sep 2020	1	22.03	88.14	7.5	33.66	8.2	23.2	0.89
A6	08 Sep 2020	2	22.00	88.65	7.5	33.66	8.2	23.2	0.90
A6	08 Sep 2020	3	21.93	88.94	7.6	33.65	8.2	23.2	0.93
A6	08 Sep 2020	4	21.79	88.82	7.6	33.65	8.2	23.2	1.12
A6	08 Sep 2020	5	21.01	88.03	7.6	33.68	8.2	23.5	1.38
A6	08 Sep 2020	6	19.97	86.46	7.7	33.59	8.2	23.7	1.85
A6	08 Sep 2020	7	18.75	85.70	7.5	33.64	8.2	24.0	2.07
A6	08 Sep 2020	8	17.48	85.66	7.5	33.60	8.1	24.3	1.93
A6	08 Sep 2020	9	16.67	85.32	7.6	33.58	8.1	24.5	2.15
A6	08 Sep 2020	10	16.27	82.72	7.9	33.52	8.1	24.5	2.74
A6	08 Sep 2020	11	16.20	81.88	8.0	33.51	8.1	24.6	3.11
A6	08 Sep 2020	12	16.16	81.56	7.9	33.50	8.1	24.6	3.31
A6	08 Sep 2020	13	16.14	81.43	7.9	33.50	8.1	24.6	3.38
A6	08 Sep 2020	14	16.08	81.39	7.9	33.50	8.1	24.6	3.32
A6	08 Sep 2020	15	16.02	81.65	7.8	33.51	8.1	24.6	3.23
A6	08 Sep 2020	16	15.77	82.75	7.6	33.54	8.1	24.7	2.96
A6	08 Sep 2020	17	15.25	85.09	7.3	33.55	8.1	24.8	2.35
A6	08 Sep 2020	18	14.96	85.92	7.2	33.53	8.1	24.8	1.92
A6	08 Sep 2020	19	14.82	85.80	7.1	33.53	8.0	24.9	1.74
A6	08 Sep 2020	20	14.65	85.81	7.2	33.52	8.0	24.9	1.73
A6	14 Sep 2020	1	19.79	84.62	8.5	33.53	8.2	23.7	1.56
A6	14 Sep 2020	2	19.76	84.87	8.4	33.54	8.2	23.7	1.56
A6	14 Sep 2020	3	19.05	84.84	8.4	33.56	8.1	23.9	2.05
A6	14 Sep 2020	4	18.30	83.01	8.4	33.52	8.1	24.1	3.34
A6	14 Sep 2020	5	17.60	81.70	8.3	33.53	8.1	24.2	3.87
A6	14 Sep 2020	6	16.72	81.41	8.3	33.50	8.1	24.4	4.18
A6	14 Sep 2020	7	15.99	81.27	8.1	33.49	8.1	24.6	4.43
A6	14 Sep 2020	8	15.58	81.09	8.0	33.47	8.1	24.7	4.65
A6	14 Sep 2020	9	15.50	81.53	7.9	33.45	8.1	24.7	4.79
A6	14 Sep 2020	10	15.30	81.73	7.8	33.46	8.1	24.7	4.70
A6	14 Sep 2020	11	14.98	82.13	7.6	33.47	8.0	24.8	4.35
A6	14 Sep 2020	12	14.95	82.95	7.5	33.46	8.0	24.8	4.05
A6	14 Sep 2020	13	14.73	83.75	7.4	33.47	8.0	24.8	3.69
A6	14 Sep 2020	14	14.64	84.18	7.3	33.47	8.0	24.9	3.39
A6	14 Sep 2020	15	14.47	84.66	7.2	33.47	8.0	24.9	2.93
A6	14 Sep 2020	16	14.42	85.95	7.1	33.47	8.0	24.9	2.50
A6	14 Sep 2020	17	14.37	86.69	7.0	33.48	8.0	24.9	2.32

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	14 Sep 2020	18	14.23	86.87	6.9	33.48	8.0	25.0	1.94
A6	14 Sep 2020	19	14.14	87.75	6.8	33.48	8.0	25.0	1.58
A6	14 Sep 2020	20	14.04	88.21	6.7	33.48	8.0	25.0	1.39
A6	14 Sep 2020	21	14.01	88.54	6.6	33.48	7.9	25.0	1.26
A6	21 Sep 2020	1	19.78	83.88	7.8	33.57	8.1	23.7	1.71
A6	21 Sep 2020	2	18.90	84.32	7.7	33.57	8.1	24.0	2.06
A6	21 Sep 2020	3	16.44	83.45	7.4	33.55	8.0	24.5	2.85
A6	21 Sep 2020	4	15.07	81.74	7.3	33.47	8.0	24.8	3.25
A6	21 Sep 2020	5	14.75	82.99	7.0	33.47	8.0	24.9	2.62
A6	21 Sep 2020	6	14.45	83.91	7.0	33.47	8.0	24.9	2.59
A6	21 Sep 2020	7	14.31	85.23	7.0	33.48	8.0	24.9	2.97
A6	21 Sep 2020	8	14.26	84.87	7.0	33.48	8.0	25.0	3.02
A6	21 Sep 2020	9	14.24	85.24	6.9	33.48	7.9	25.0	2.84
A6	21 Sep 2020	10	14.14	85.94	6.7	33.49	7.9	25.0	2.45
A6	21 Sep 2020	11	14.07	86.36	6.7	33.49	7.9	25.0	2.38
A6	21 Sep 2020	12	14.03	86.95	6.7	33.49	7.9	25.0	2.36
A6	21 Sep 2020	13	13.98	87.01	6.7	33.49	7.9	25.0	2.44
A6	21 Sep 2020	14	13.93	87.05	6.7	33.49	7.9	25.0	2.57
A6	21 Sep 2020	15	13.93	86.90	6.8	33.49	7.9	25.0	2.57
A6	21 Sep 2020	16	13.92	87.01	6.8	33.49	7.9	25.0	2.75
A6	21 Sep 2020	17	13.90	87.05	6.7	33.49	7.9	25.0	2.54
A6	21 Sep 2020	18	13.88	87.28	6.7	33.49	7.9	25.0	2.32
A6	21 Sep 2020	19	13.80	87.56	6.7	33.49	7.9	25.1	2.17
A6	21 Sep 2020	20	13.75	87.71	6.7	33.49	7.9	25.1	2.23
A6	21 Sep 2020	21	13.73	87.94	6.7	33.49	7.9	25.1	2.20
A6	28 Sep 2020	1	21.25	87.56	7.4	33.66	8.2	23.4	0.90
A6	28 Sep 2020	2	21.24	87.46	7.4	33.66	8.2	23.4	0.97
A6	28 Sep 2020	3	21.23	87.47	7.4	33.66	8.2	23.4	1.05
A6	28 Sep 2020	4	21.20	87.42	7.4	33.66	8.2	23.4	1.16
A6	28 Sep 2020	5	21.04	87.20	7.4	33.66	8.2	23.5	1.33
A6	28 Sep 2020	6	20.80	86.81	7.3	33.64	8.2	23.5	1.59
A6	28 Sep 2020	7	20.04	86.31	7.5	33.63	8.2	23.7	1.86
A6	28 Sep 2020	8	19.54	85.88	7.6	33.59	8.2	23.8	2.08
A6	28 Sep 2020	9	19.09	86.00	7.6	33.58	8.2	23.9	2.23
A6	28 Sep 2020	10	18.64	85.61	7.6	33.57	8.1	24.0	2.30
A6	28 Sep 2020	11	18.25	85.01	7.6	33.55	8.1	24.1	2.45
A6	28 Sep 2020	12	18.05	84.45	7.5	33.54	8.1	24.1	2.46
A6	28 Sep 2020	13	17.55	84.51	7.3	33.54	8.1	24.3	2.16
A6	28 Sep 2020	14	17.04	84.96	7.2	33.52	8.1	24.4	1.84
A6	28 Sep 2020	15	16.66	85.62	7.1	33.51	8.1	24.4	1.59
A6	28 Sep 2020	16	15.90	86.02	7.1	33.51	8.1	24.6	1.46
A6	28 Sep 2020	17	15.29	85.84	7.0	33.48	8.1	24.7	1.45
A6	28 Sep 2020	18	14.59	85.33	7.1	33.47	8.0	24.9	1.48
A6	28 Sep 2020	19	14.53	84.98	7.2	33.44	8.0	24.9	1.50
A7	08 Sep 2020	1	21.60	88.50	7.5	33.64	8.2	23.3	1.01
A7	08 Sep 2020	2	21.61	88.82	7.5	33.64	8.2	23.3	1.02
A7	08 Sep 2020	3	21.30	88.80	7.6	33.64	8.2	23.4	1.24
A7	08 Sep 2020	4	20.81	87.06	7.5	33.62	8.2	23.5	1.50
A7	08 Sep 2020	5	18.87	85.68	7.8	33.58	8.1	24.0	1.99
A7	08 Sep 2020	6	18.58	84.53	7.8	33.51	8.1	24.0	2.12
A7	08 Sep 2020	7	18.16	83.93	7.7	33.55	8.1	24.1	2.13
A7	08 Sep 2020	8	17.52	84.43	7.7	33.51	8.1	24.2	2.10
A7	08 Sep 2020	9	17.16	84.58	7.6	33.52	8.1	24.3	2.10
A7	08 Sep 2020	10	16.79	84.54	7.6	33.50	8.1	24.4	2.09
A7	08 Sep 2020	11	16.47	84.28	7.6	33.51	8.1	24.5	2.09
A7	08 Sep 2020	12	16.34	84.65	7.5	33.50	8.1	24.5	1.94
A7	08 Sep 2020	13	16.27	84.89	7.4	33.50	8.1	24.5	1.82
A7	08 Sep 2020	14	15.89	85.11	7.3	33.50	8.1	24.6	1.88

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	08 Sep 2020	15	15.57	85.19	7.2	33.51	8.1	24.7	1.91
A7	08 Sep 2020	16	15.46	85.09	7.2	33.50	8.0	24.7	1.92
A7	08 Sep 2020	17	15.34	85.31	7.2	33.50	8.0	24.7	1.91
A7	08 Sep 2020	18	15.23	85.77	7.1	33.50	8.0	24.8	1.74
A7	08 Sep 2020	19	15.15	85.90	7.0	33.50	8.0	24.8	1.53
A7	14 Sep 2020	1	19.04	84.13	8.4	33.52	8.2	23.9	1.52
A7	14 Sep 2020	2	18.93	85.59	8.4	33.52	8.2	23.9	1.69
A7	14 Sep 2020	3	18.88	85.27	8.4	33.52	8.2	23.9	1.92
A7	14 Sep 2020	4	18.83	85.11	8.5	33.51	8.2	23.9	2.01
A7	14 Sep 2020	5	18.81	85.04	8.4	33.52	8.2	23.9	2.14
A7	14 Sep 2020	6	18.73	84.95	8.4	33.52	8.2	24.0	2.20
A7	14 Sep 2020	7	18.70	84.75	8.4	33.51	8.2	24.0	2.24
A7	14 Sep 2020	8	18.65	84.76	8.4	33.51	8.2	24.0	2.31
A7	14 Sep 2020	9	18.59	84.63	8.4	33.51	8.2	24.0	2.39
A7	14 Sep 2020	10	18.25	84.46	8.4	33.52	8.1	24.1	2.58
A7	14 Sep 2020	11	18.05	83.91	8.3	33.50	8.1	24.1	2.91
A7	14 Sep 2020	12	17.43	83.49	8.2	33.51	8.1	24.3	3.34
A7	14 Sep 2020	13	16.57	82.83	8.2	33.51	8.1	24.5	3.64
A7	14 Sep 2020	14	16.20	82.27	8.0	33.48	8.1	24.5	3.94
A7	14 Sep 2020	15	15.86	82.35	7.8	33.48	8.1	24.6	3.98
A7	14 Sep 2020	16	15.59	82.72	7.6	33.48	8.1	24.7	3.79
A7	14 Sep 2020	17	15.13	83.72	7.4	33.49	8.0	24.8	3.20
A7	14 Sep 2020	18	14.78	85.49	7.2	33.48	8.0	24.8	2.42
A7	14 Sep 2020	19	14.60	86.52	7.1	33.48	8.0	24.9	2.22
A7	21 Sep 2020	1	19.27	72.65	8.1	33.56	8.1	23.9	1.79
A7	21 Sep 2020	2	18.99	80.23	7.8	33.58	8.1	23.9	1.98
A7	21 Sep 2020	3	16.87	82.77	7.7	33.53	8.1	24.4	3.42
A7	21 Sep 2020	4	16.07	80.84	7.7	33.50	8.0	24.6	4.34
A7	21 Sep 2020	5	15.46	80.25	7.6	33.49	8.0	24.7	4.81
A7	21 Sep 2020	6	15.21	80.36	7.5	33.48	8.0	24.8	4.91
A7	21 Sep 2020	7	15.07	80.81	7.4	33.47	8.0	24.8	4.86
A7	21 Sep 2020	8	14.89	81.43	7.1	33.48	8.0	24.8	3.86
A7	21 Sep 2020	9	14.50	83.46	6.9	33.49	8.0	24.9	3.19
A7	21 Sep 2020	10	14.10	85.08	7.0	33.48	7.9	25.0	3.16
A7	21 Sep 2020	11	14.07	85.37	7.0	33.47	7.9	25.0	3.11
A7	21 Sep 2020	12	14.05	85.72	7.0	33.48	7.9	25.0	3.17
A7	21 Sep 2020	13	13.97	85.73	6.9	33.48	7.9	25.0	3.09
A7	21 Sep 2020	14	13.85	85.90	6.9	33.48	7.9	25.0	2.83
A7	21 Sep 2020	15	13.83	86.57	6.8	33.48	7.9	25.1	2.71
A7	21 Sep 2020	16	13.82	86.68	6.8	33.48	7.9	25.1	2.66
A7	21 Sep 2020	17	13.80	86.69	6.8	33.48	7.9	25.1	2.57
A7	21 Sep 2020	18	13.80	86.84	6.8	33.48	7.9	25.1	2.45
A7	21 Sep 2020	19	13.81	87.02	6.8	33.48	7.9	25.1	2.48
A7	21 Sep 2020	20	13.81	87.08	6.8	33.49	7.9	25.1	2.46
A7	28 Sep 2020	1	20.90	87.57	7.4	33.65	8.2	23.5	1.03
A7	28 Sep 2020	2	20.67	87.16	7.4	33.64	8.2	23.5	1.18
A7	28 Sep 2020	3	20.42	86.44	7.6	33.63	8.2	23.6	1.44
A7	28 Sep 2020	4	20.31	85.35	7.6	33.62	8.2	23.6	1.59
A7	28 Sep 2020	5	20.10	84.73	7.6	33.61	8.2	23.7	1.71
A7	28 Sep 2020	6	19.80	84.67	7.6	33.60	8.1	23.7	1.86
A7	28 Sep 2020	7	19.49	84.23	7.6	33.57	8.1	23.8	2.01
A7	28 Sep 2020	8	19.12	83.72	7.6	33.56	8.1	23.9	2.19
A7	28 Sep 2020	9	18.94	83.54	7.6	33.55	8.1	23.9	2.34
A7	28 Sep 2020	10	18.85	83.57	7.6	33.55	8.1	23.9	2.38
A7	28 Sep 2020	11	18.76	83.61	7.6	33.55	8.1	24.0	2.39
A7	28 Sep 2020	12	18.49	83.59	7.5	33.55	8.1	24.0	2.45
A7	28 Sep 2020	13	18.12	83.54	7.5	33.54	8.1	24.1	2.57
A7	28 Sep 2020	14	17.80	83.29	7.5	33.52	8.1	24.2	2.59

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	28 Sep 2020	15	17.12	83.33	7.4	33.56	8.1	24.4	2.47
A7	28 Sep 2020	16	15.96	83.43	7.5	33.50	8.1	24.6	2.30
A7	28 Sep 2020	17	15.66	83.68	7.6	33.47	8.1	24.6	2.23
A7	28 Sep 2020	18	15.63	83.57	7.7	33.46	8.1	24.6	2.17
C4	08 Sep 2020	1	20.93	84.99	7.4	33.58	8.1	23.4	1.03
C4	08 Sep 2020	2	20.46	84.71	7.3	33.57	8.1	23.5	1.04
C4	08 Sep 2020	3	20.25	83.87	7.2	33.55	8.1	23.6	1.04
C4	08 Sep 2020	4	19.54	82.43	7.3	33.53	8.1	23.8	1.14
C4	08 Sep 2020	5	19.54	82.07	7.2	33.53	8.1	23.8	1.16
C4	08 Sep 2020	6	18.47	81.75	7.3	33.51	8.1	24.0	1.21
C4	08 Sep 2020	7	18.19	81.89	7.3	33.49	8.1	24.1	1.18
C4	08 Sep 2020	8	17.80	82.03	7.3	33.48	8.1	24.2	1.03
C4	08 Sep 2020	9	17.67	82.27	7.3	33.47	8.1	24.2	0.86
C4	08 Sep 2020	10	17.63	80.63	7.2	33.47	8.1	24.2	0.77
C4	08 Sep 2020	11	17.63	78.70	7.2	33.47	8.1	24.2	0.76
C4	08 Sep 2020	12	17.64	77.47	7.2	33.47	8.1	24.2	0.77
C4	14 Sep 2020	1	20.50	84.02	8.1	33.56	8.2	23.5	0.95
C4	14 Sep 2020	2	20.47	84.02	8.0	33.56	8.2	23.5	1.07
C4	14 Sep 2020	3	20.26	83.80	7.8	33.56	8.2	23.6	1.96
C4	14 Sep 2020	4	19.89	82.24	7.5	33.56	8.1	23.7	3.26
C4	14 Sep 2020	5	18.75	80.34	6.8	33.56	8.1	24.0	3.46
C4	14 Sep 2020	6	17.75	80.54	6.1	33.54	8.0	24.2	2.82
C4	14 Sep 2020	7	16.96	82.25	5.3	33.50	7.9	24.4	1.50
C4	14 Sep 2020	8	16.36	83.71	4.8	33.50	7.9	24.5	0.89
C4	14 Sep 2020	9	15.95	82.00	4.2	33.48	7.8	24.6	0.55
C4	14 Sep 2020	10	15.78	78.35	4.1	33.48	7.8	24.6	0.43
C4	14 Sep 2020	11	15.65	71.57	4.2	33.48	7.8	24.7	0.48
C4	21 Sep 2020	1	19.69	82.12	7.6	33.55	8.1	23.7	0.78
C4	21 Sep 2020	2	19.50	81.34	7.4	33.56	8.1	23.8	0.86
C4	21 Sep 2020	3	18.51	80.66	7.1	33.56	8.1	24.0	1.21
C4	21 Sep 2020	4	17.32	79.39	6.6	33.54	8.0	24.3	1.39
C4	21 Sep 2020	5	16.50	78.66	6.2	33.52	8.0	24.5	1.36
C4	21 Sep 2020	6	15.85	78.94	5.9	33.51	7.9	24.6	1.19
C4	21 Sep 2020	7	15.39	79.52	5.5	33.50	7.9	24.7	0.91
C4	21 Sep 2020	8	15.07	78.46	5.2	33.49	7.8	24.8	0.69
C4	21 Sep 2020	9	14.92	76.89	5.0	33.49	7.8	24.8	0.59
C4	21 Sep 2020	10	14.94	75.91	5.0	33.49	7.8	24.8	0.56
C4	21 Sep 2020	11	14.96	73.92	5.0	33.49	7.8	24.8	0.56
C4	28 Sep 2020	1	21.08	67.27	6.7	33.65	8.1	23.4	1.08
C4	28 Sep 2020	2	21.07	66.85	6.8	33.65	8.1	23.5	1.17
C4	28 Sep 2020	3	20.99	66.97	7.0	33.65	8.1	23.5	2.09
C4	28 Sep 2020	4	20.89	70.00	7.2	33.65	8.1	23.5	3.48
C4	28 Sep 2020	5	20.73	75.91	7.2	33.65	8.2	23.5	3.67
C4	28 Sep 2020	6	19.99	79.63	6.8	33.65	8.1	23.7	3.11
C4	28 Sep 2020	7	18.99	81.37	6.1	33.62	8.1	24.0	2.56
C4	28 Sep 2020	8	18.06	80.75	5.4	33.59	8.0	24.2	1.60
C4	28 Sep 2020	9	17.33	80.61	5.0	33.57	8.0	24.3	1.05
C4	28 Sep 2020	10	16.95	80.12	4.8	33.54	7.9	24.4	0.69
C4	28 Sep 2020	11	16.67	74.59	4.6	33.53	7.9	24.5	0.51
C5	08 Sep 2020	1	21.42	84.96	7.2	33.61	8.2	23.3	0.81
C5	08 Sep 2020	2	21.42	85.50	7.2	33.61	8.2	23.3	0.82
C5	08 Sep 2020	3	21.42	85.35	7.2	33.61	8.2	23.3	0.87
C5	08 Sep 2020	4	21.35	85.67	7.2	33.61	8.2	23.3	0.92
C5	08 Sep 2020	5	20.68	85.93	7.3	33.60	8.1	23.5	0.92
C5	08 Sep 2020	6	20.21	86.21	7.2	33.57	8.1	23.6	0.78
C5	08 Sep 2020	7	19.64	87.19	7.0	33.55	8.1	23.8	0.62

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C5	08 Sep 2020	8	19.37	85.59	7.0	33.53	8.1	23.8	0.54
C5	08 Sep 2020	9	18.92	83.57	6.9	33.53	8.1	23.9	0.54
C5	08 Sep 2020	10	17.13	81.71	6.8	33.53	8.1	24.4	0.58
C5	08 Sep 2020	11	16.31	75.25	7.1	33.50	8.0	24.5	0.63
C5	14 Sep 2020	1	20.24	81.41	8.2	33.55	8.2	23.6	1.28
C5	14 Sep 2020	2	19.74	82.62	8.3	33.55	8.2	23.7	2.15
C5	14 Sep 2020	3	19.51	82.50	8.4	33.53	8.2	23.8	2.73
C5	14 Sep 2020	4	19.29	82.52	8.5	33.52	8.2	23.8	2.67
C5	14 Sep 2020	5	18.74	83.99	8.4	33.52	8.2	24.0	2.77
C5	14 Sep 2020	6	18.29	84.17	8.4	33.51	8.2	24.1	2.98
C5	14 Sep 2020	7	18.00	83.45	8.4	33.50	8.2	24.1	3.40
C5	14 Sep 2020	8	17.72	82.82	7.9	33.49	8.1	24.2	3.49
C5	14 Sep 2020	9	16.78	83.02	7.4	33.51	8.1	24.4	2.38
C5	14 Sep 2020	10	15.98	83.71	7.4	33.50	8.1	24.6	1.53
C5	21 Sep 2020	1	20.08	82.49	7.6	33.56	8.1	23.6	0.78
C5	21 Sep 2020	2	19.70	82.48	7.6	33.56	8.1	23.7	0.99
C5	21 Sep 2020	3	18.84	82.30	7.6	33.56	8.1	24.0	1.51
C5	21 Sep 2020	4	18.12	80.92	7.6	33.52	8.1	24.1	2.14
C5	21 Sep 2020	5	17.19	79.64	7.3	33.51	8.0	24.3	2.36
C5	21 Sep 2020	6	16.04	81.01	7.1	33.52	8.0	24.6	1.76
C5	21 Sep 2020	7	15.49	82.10	6.9	33.49	8.0	24.7	1.47
C5	21 Sep 2020	8	15.21	82.42	6.8	33.49	8.0	24.8	1.32
C5	21 Sep 2020	9	15.12	82.70	6.7	33.49	8.0	24.8	1.26
C5	21 Sep 2020	10	15.02	83.16	6.7	33.49	8.0	24.8	1.09
C5	28 Sep 2020	1	21.31	86.31	7.3	33.66	8.2	23.4	0.96
C5	28 Sep 2020	2	21.21	86.50	7.3	33.66	8.2	23.4	1.00
C5	28 Sep 2020	3	20.85	86.51	7.4	33.65	8.2	23.5	1.34
C5	28 Sep 2020	4	20.59	86.33	7.5	33.64	8.2	23.6	1.45
C5	28 Sep 2020	5	20.26	86.07	7.5	33.63	8.2	23.7	1.77
C5	28 Sep 2020	6	19.52	85.21	7.4	33.61	8.2	23.8	2.32
C5	28 Sep 2020	7	18.95	83.70	7.4	33.58	8.1	23.9	2.70
C5	28 Sep 2020	8	18.66	83.34	7.3	33.56	8.1	24.0	2.79
C5	28 Sep 2020	9	18.19	83.25	6.9	33.56	8.1	24.1	2.19
C5	28 Sep 2020	10	17.36	76.13	6.3	33.54	8.0	24.3	1.23
C5	28 Sep 2020	11	18.13	51.64	6.4	33.50	8.0	24.1	1.17
C6	08 Sep 2020	1	21.90	88.18	7.4	33.64	8.2	23.2	0.77
C6	08 Sep 2020	2	21.89	88.22	7.4	33.64	8.2	23.2	0.81
C6	08 Sep 2020	3	21.81	88.35	7.2	33.63	8.2	23.2	0.82
C6	08 Sep 2020	4	21.76	87.16	7.1	33.62	8.2	23.2	0.74
C6	08 Sep 2020	5	21.61	86.45	7.0	33.62	8.2	23.3	0.65
C6	08 Sep 2020	6	21.50	86.17	6.9	33.61	8.1	23.3	0.57
C6	08 Sep 2020	7	21.21	85.92	6.6	33.62	8.1	23.4	0.53
C6	08 Sep 2020	8	19.17	82.93	6.5	33.59	8.1	23.9	0.43
C6	08 Sep 2020	9	19.33	78.04	6.6	33.52	8.1	23.8	0.41
C6	14 Sep 2020	1	20.16	82.45	7.9	33.55	8.2	23.6	1.17
C6	14 Sep 2020	2	20.05	83.76	7.9	33.57	8.2	23.7	1.18
C6	14 Sep 2020	3	19.74	82.34	7.9	33.61	8.2	23.8	1.84
C6	14 Sep 2020	4	18.53	82.13	7.8	33.60	8.1	24.1	2.48
C6	14 Sep 2020	5	18.45	81.13	7.8	33.56	8.1	24.1	3.02
C6	14 Sep 2020	6	17.57	82.28	7.9	33.56	8.1	24.3	3.30
C6	14 Sep 2020	7	17.15	82.69	7.6	33.53	8.1	24.4	3.41
C6	14 Sep 2020	8	16.53	81.92	7.3	33.59	8.1	24.5	3.74
C6	14 Sep 2020	9	15.93	82.82	6.8	33.55	8.0	24.6	3.43
C6	21 Sep 2020	1	20.69	87.15	7.7	33.60	8.1	23.5	0.55
C6	21 Sep 2020	2	20.02	85.33	7.6	33.59	8.1	23.7	0.69

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C6	21 Sep 2020	3	19.79	83.55	7.5	33.58	8.1	23.7	0.98
C6	21 Sep 2020	4	17.70	82.83	7.4	33.57	8.1	24.2	1.56
C6	21 Sep 2020	5	16.52	81.30	7.2	33.51	8.0	24.5	2.08
C6	21 Sep 2020	6	15.70	80.82	7.1	33.50	8.0	24.7	2.25
C6	21 Sep 2020	7	15.56	82.82	7.0	33.49	8.0	24.7	1.85
C6	21 Sep 2020	8	15.20	84.53	6.6	33.50	8.0	24.8	1.36
C6	21 Sep 2020	9	14.98	83.55	6.3	33.50	7.9	24.8	0.67
C6	28 Sep 2020	1	21.16	80.91	6.7	33.66	8.1	23.4	1.08
C6	28 Sep 2020	2	21.17	80.97	6.7	33.66	8.1	23.4	1.13
C6	28 Sep 2020	3	21.16	80.84	6.7	33.66	8.1	23.4	1.18
C6	28 Sep 2020	4	21.15	81.05	6.7	33.66	8.1	23.4	1.20
C6	28 Sep 2020	5	21.10	81.06	6.5	33.66	8.1	23.4	1.18
C6	28 Sep 2020	6	20.45	81.22	6.4	33.66	8.1	23.6	1.13
C6	28 Sep 2020	7	19.13	82.43	6.4	33.63	8.1	23.9	1.03
C6	28 Sep 2020	8	17.88	84.12	6.3	33.58	8.1	24.2	0.84
C6	28 Sep 2020	9	16.91	82.65	6.0	33.54	8.0	24.4	0.64
C6	28 Sep 2020	10	17.07	67.09	6.0	33.49	8.0	24.3	0.57
C7	08 Sep 2020	1	22.23	90.40	7.4	33.68	8.2	23.2	0.70
C7	08 Sep 2020	2	22.22	90.62	7.4	33.68	8.2	23.2	0.73
C7	08 Sep 2020	3	22.22	90.78	7.4	33.68	8.2	23.2	0.73
C7	08 Sep 2020	4	22.21	90.93	7.4	33.68	8.2	23.2	0.77
C7	08 Sep 2020	5	21.97	90.74	7.4	33.70	8.2	23.2	0.79
C7	08 Sep 2020	6	21.49	90.32	7.5	33.68	8.2	23.4	0.94
C7	08 Sep 2020	7	21.25	89.86	7.5	33.66	8.2	23.4	1.09
C7	08 Sep 2020	8	20.85	89.34	7.6	33.65	8.2	23.5	1.26
C7	08 Sep 2020	9	20.57	88.75	7.5	33.66	8.2	23.6	1.45
C7	08 Sep 2020	10	18.98	88.34	7.4	33.68	8.2	24.0	1.42
C7	08 Sep 2020	11	18.06	87.69	7.2	33.64	8.1	24.2	1.31
C7	08 Sep 2020	12	16.61	86.80	7.1	33.63	8.1	24.6	1.34
C7	08 Sep 2020	13	15.27	86.11	7.3	33.59	8.1	24.8	1.64
C7	08 Sep 2020	14	14.97	84.18	7.6	33.51	8.1	24.8	2.59
C7	08 Sep 2020	15	14.88	83.74	7.7	33.50	8.1	24.8	3.00
C7	08 Sep 2020	16	14.86	84.18	7.6	33.49	8.1	24.8	2.90
C7	08 Sep 2020	17	14.87	84.56	7.5	33.49	8.1	24.8	2.69
C7	08 Sep 2020	18	14.98	84.84	7.5	33.49	8.1	24.8	2.63
C7	14 Sep 2020	1	19.57	82.26	8.2	33.54	8.2	23.8	2.22
C7	14 Sep 2020	2	19.55	82.45	8.2	33.54	8.2	23.8	2.37
C7	14 Sep 2020	3	19.26	82.36	8.1	33.55	8.2	23.8	2.96
C7	14 Sep 2020	4	18.57	82.04	8.0	33.56	8.1	24.0	3.68
C7	14 Sep 2020	5	17.12	81.55	7.9	33.56	8.1	24.4	3.81
C7	14 Sep 2020	6	16.26	81.95	7.9	33.51	8.1	24.5	4.01
C7	14 Sep 2020	7	15.93	81.55	7.6	33.49	8.1	24.6	4.16
C7	14 Sep 2020	8	15.52	82.08	7.4	33.49	8.0	24.7	4.29
C7	14 Sep 2020	9	15.28	82.55	7.3	33.48	8.0	24.7	4.47
C7	14 Sep 2020	10	14.96	82.72	7.2	33.48	8.0	24.8	4.53
C7	14 Sep 2020	11	14.61	83.23	7.2	33.48	8.0	24.9	4.22
C7	14 Sep 2020	12	14.39	84.47	7.3	33.46	8.0	24.9	3.57
C7	14 Sep 2020	13	14.41	85.47	7.3	33.46	8.0	24.9	3.26
C7	14 Sep 2020	14	14.23	85.96	7.2	33.47	8.0	25.0	2.90
C7	14 Sep 2020	15	14.12	86.63	7.0	33.48	8.0	25.0	2.14
C7	14 Sep 2020	16	14.06	87.70	6.8	33.48	8.0	25.0	1.49
C7	14 Sep 2020	17	13.90	89.43	6.6	33.49	8.0	25.0	0.95
C7	14 Sep 2020	18	13.89	89.80	6.5	33.49	8.0	25.0	0.78
C7	21 Sep 2020	1	20.64	85.37	7.7	33.60	8.1	23.5	0.98
C7	21 Sep 2020	2	20.59	85.34	7.7	33.60	8.1	23.5	1.02
C7	21 Sep 2020	3	20.57	85.03	7.7	33.60	8.1	23.5	1.08
C7	21 Sep 2020	4	20.54	85.14	7.7	33.60	8.1	23.6	1.15

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	21 Sep 2020	5	20.52	84.93	7.7	33.60	8.1	23.6	1.23
C7	21 Sep 2020	6	20.45	84.75	7.7	33.60	8.1	23.6	1.48
C7	21 Sep 2020	7	20.37	84.17	7.8	33.59	8.1	23.6	1.73
C7	21 Sep 2020	8	20.08	84.15	7.9	33.59	8.1	23.7	1.70
C7	21 Sep 2020	9	19.80	84.65	7.8	33.58	8.1	23.7	1.79
C7	21 Sep 2020	10	18.94	84.58	7.6	33.58	8.1	23.9	2.04
C7	21 Sep 2020	11	17.09	84.16	7.7	33.53	8.1	24.4	2.82
C7	21 Sep 2020	12	15.48	83.01	7.8	33.51	8.1	24.7	4.10
C7	21 Sep 2020	13	15.49	81.75	7.5	33.49	8.0	24.7	4.52
C7	21 Sep 2020	14	14.58	81.22	7.4	33.48	8.0	24.9	4.50
C7	21 Sep 2020	15	14.48	82.37	7.2	33.47	8.0	24.9	4.16
C7	21 Sep 2020	16	14.26	83.65	7.1	33.47	8.0	25.0	3.64
C7	21 Sep 2020	17	14.23	84.66	6.9	33.47	8.0	25.0	2.95
C7	21 Sep 2020	18	14.09	86.99	6.9	33.49	8.0	25.0	2.55
C7	28 Sep 2020	1	21.56	86.46	7.4	33.67	8.2	23.3	1.27
C7	28 Sep 2020	2	21.56	86.46	7.4	33.67	8.2	23.3	1.38
C7	28 Sep 2020	3	21.53	86.42	7.3	33.67	8.2	23.3	1.57
C7	28 Sep 2020	4	21.32	86.20	7.2	33.66	8.2	23.4	1.86
C7	28 Sep 2020	5	20.65	85.07	7.0	33.65	8.1	23.6	2.29
C7	28 Sep 2020	6	19.83	82.72	7.0	33.62	8.1	23.8	2.57
C7	28 Sep 2020	7	19.15	82.21	7.2	33.59	8.1	23.9	2.31
C7	28 Sep 2020	8	18.76	84.94	7.4	33.57	8.1	24.0	2.15
C7	28 Sep 2020	9	18.38	85.66	7.3	33.56	8.1	24.1	2.06
C7	28 Sep 2020	10	18.08	85.26	7.2	33.54	8.1	24.1	2.07
C7	28 Sep 2020	11	17.21	84.94	7.4	33.54	8.1	24.3	2.17
C7	28 Sep 2020	12	16.54	85.14	7.7	33.49	8.1	24.5	2.08
C7	28 Sep 2020	13	16.26	85.02	7.6	33.48	8.1	24.5	2.11
C7	28 Sep 2020	14	16.04	84.60	7.6	33.47	8.1	24.6	2.16
C7	28 Sep 2020	15	15.82	84.23	7.5	33.47	8.1	24.6	2.43
C7	28 Sep 2020	16	14.98	84.19	7.4	33.48	8.1	24.8	2.44
C7	28 Sep 2020	17	14.27	85.06	7.3	33.46	8.0	24.9	2.02
C7	28 Sep 2020	18	14.23	85.71	7.2	33.45	8.0	24.9	1.63
C8	08 Sep 2020	1	22.15	91.29	7.4	33.69	8.2	23.2	0.59
C8	08 Sep 2020	2	22.15	91.39	7.4	33.69	8.2	23.2	0.57
C8	08 Sep 2020	3	22.14	91.38	7.4	33.69	8.2	23.2	0.62
C8	08 Sep 2020	4	22.13	91.37	7.4	33.69	8.2	23.2	0.64
C8	08 Sep 2020	5	22.13	91.22	7.4	33.69	8.2	23.2	0.65
C8	08 Sep 2020	6	21.97	91.09	7.5	33.68	8.2	23.2	0.77
C8	08 Sep 2020	7	21.69	90.87	7.6	33.67	8.2	23.3	0.82
C8	08 Sep 2020	8	21.36	90.23	7.6	33.65	8.2	23.4	0.97
C8	08 Sep 2020	9	20.63	89.10	7.8	33.61	8.2	23.5	1.20
C8	08 Sep 2020	10	20.30	88.45	7.8	33.61	8.2	23.6	1.29
C8	08 Sep 2020	11	19.67	88.19	7.9	33.58	8.2	23.8	1.47
C8	08 Sep 2020	12	18.55	87.33	7.6	33.58	8.2	24.0	1.61
C8	08 Sep 2020	13	15.83	86.21	7.4	33.53	8.1	24.7	1.61
C8	08 Sep 2020	14	15.17	86.53	7.4	33.50	8.1	24.8	1.58
C8	08 Sep 2020	15	14.97	86.43	7.4	33.48	8.1	24.8	1.60
C8	08 Sep 2020	16	14.96	86.43	7.3	33.48	8.1	24.8	1.66
C8	08 Sep 2020	17	14.95	86.40	7.3	33.48	8.1	24.8	1.67
C8	08 Sep 2020	18	14.91	86.32	7.3	33.49	8.1	24.8	1.68
C8	08 Sep 2020	19	14.88	86.35	7.3	33.49	8.1	24.8	1.71
C8	14 Sep 2020	1	18.98	80.80	8.1	33.55	8.1	23.9	2.32
C8	14 Sep 2020	2	18.62	79.77	8.2	33.53	8.1	24.0	3.23
C8	14 Sep 2020	3	17.86	79.19	8.4	33.51	8.1	24.2	4.56
C8	14 Sep 2020	4	17.57	77.75	8.4	33.50	8.1	24.2	5.28
C8	14 Sep 2020	5	17.51	77.56	8.4	33.49	8.1	24.2	5.70
C8	14 Sep 2020	6	17.50	77.28	8.4	33.48	8.1	24.2	6.02
C8	14 Sep 2020	7	17.47	77.13	8.5	33.48	8.1	24.2	6.32

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	14 Sep 2020	8	17.44	77.31	8.5	33.48	8.1	24.2	6.22
C8	14 Sep 2020	9	17.40	77.38	8.5	33.48	8.1	24.3	6.20
C8	14 Sep 2020	10	17.19	77.46	8.3	33.49	8.1	24.3	6.09
C8	14 Sep 2020	11	16.96	77.95	8.1	33.49	8.1	24.4	5.87
C8	14 Sep 2020	12	16.56	78.45	8.0	33.49	8.1	24.5	5.54
C8	14 Sep 2020	13	15.73	79.14	8.1	33.48	8.1	24.6	5.25
C8	14 Sep 2020	14	15.27	80.11	7.9	33.46	8.1	24.7	5.19
C8	14 Sep 2020	15	14.74	81.17	7.5	33.47	8.0	24.8	5.18
C8	14 Sep 2020	16	14.63	81.57	7.3	33.47	8.0	24.9	4.59
C8	14 Sep 2020	17	14.12	83.76	7.0	33.48	8.0	25.0	3.21
C8	14 Sep 2020	18	14.04	85.62	6.9	33.48	8.0	25.0	2.39
C8	14 Sep 2020	19	13.96	87.33	6.8	33.48	8.0	25.0	1.71
C8	14 Sep 2020	20	14.08	87.92	6.7	33.48	8.0	25.0	1.73
C8	21 Sep 2020	1	21.75	88.80	7.6	33.66	8.2	23.3	0.52
C8	21 Sep 2020	2	21.27	88.91	7.5	33.65	8.1	23.4	0.69
C8	21 Sep 2020	3	20.20	87.60	7.5	33.61	8.1	23.6	1.25
C8	21 Sep 2020	4	19.96	83.28	7.5	33.58	8.1	23.7	1.66
C8	21 Sep 2020	5	19.70	83.13	7.6	33.57	8.1	23.8	1.88
C8	21 Sep 2020	6	19.65	82.64	7.6	33.57	8.1	23.8	1.92
C8	21 Sep 2020	7	19.65	83.19	7.6	33.57	8.1	23.8	1.92
C8	21 Sep 2020	8	19.49	83.31	7.7	33.57	8.1	23.8	1.74
C8	21 Sep 2020	9	18.99	84.76	7.6	33.57	8.1	23.9	1.73
C8	21 Sep 2020	10	17.14	84.83	7.8	33.55	8.1	24.4	2.22
C8	21 Sep 2020	11	16.18	83.63	8.0	33.50	8.1	24.6	2.82
C8	21 Sep 2020	12	16.01	82.88	7.9	33.48	8.1	24.6	3.43
C8	21 Sep 2020	13	15.77	81.46	7.6	33.49	8.1	24.6	3.80
C8	21 Sep 2020	14	15.23	80.96	7.2	33.49	8.0	24.8	3.70
C8	21 Sep 2020	15	14.45	82.48	6.9	33.49	8.0	24.9	2.78
C8	21 Sep 2020	16	14.31	84.94	6.8	33.48	8.0	24.9	2.36
C8	21 Sep 2020	17	14.29	85.60	6.8	33.48	8.0	24.9	2.27
C8	21 Sep 2020	18	14.27	85.88	6.8	33.48	8.0	25.0	2.23
C8	21 Sep 2020	19	14.26	86.16	6.8	33.48	8.0	25.0	2.08
C8	21 Sep 2020	20	14.33	86.24	6.8	33.49	8.0	25.0	2.20
C8	28 Sep 2020	1	21.50	85.55	7.6	33.66	8.2	23.3	1.14
C8	28 Sep 2020	2	21.51	85.46	7.6	33.66	8.2	23.3	1.19
C8	28 Sep 2020	3	21.50	85.37	7.6	33.66	8.2	23.3	1.28
C8	28 Sep 2020	4	21.50	85.45	7.5	33.66	8.2	23.3	1.39
C8	28 Sep 2020	5	21.42	85.40	7.3	33.66	8.2	23.4	1.60
C8	28 Sep 2020	6	20.19	84.46	7.3	33.65	8.2	23.7	2.06
C8	28 Sep 2020	7	19.60	83.20	7.4	33.59	8.1	23.8	2.42
C8	28 Sep 2020	8	19.18	83.21	7.3	33.59	8.1	23.9	2.60
C8	28 Sep 2020	9	18.42	82.69	7.3	33.57	8.1	24.1	2.66
C8	28 Sep 2020	10	17.41	83.12	7.3	33.54	8.1	24.3	2.66
C8	28 Sep 2020	11	16.54	83.48	7.3	33.52	8.1	24.5	2.41
C8	28 Sep 2020	12	15.90	83.99	7.4	33.48	8.1	24.6	2.43
C8	28 Sep 2020	13	15.44	83.91	7.5	33.46	8.1	24.7	2.40
C8	28 Sep 2020	14	15.30	83.56	7.4	33.45	8.1	24.7	2.33
C8	28 Sep 2020	15	15.11	83.36	7.4	33.45	8.1	24.8	2.22
C8	28 Sep 2020	16	14.92	83.72	7.2	33.45	8.1	24.8	2.12
C8	28 Sep 2020	17	14.61	85.08	7.2	33.46	8.1	24.9	1.80
C8	28 Sep 2020	18	14.40	85.82	7.1	33.45	8.0	24.9	1.48
C8	28 Sep 2020	19	14.29	85.61	7.0	33.45	8.0	24.9	1.38
C8	28 Sep 2020	20	14.31	84.35	7.0	33.45	8.0	24.9	1.29

NA = not available

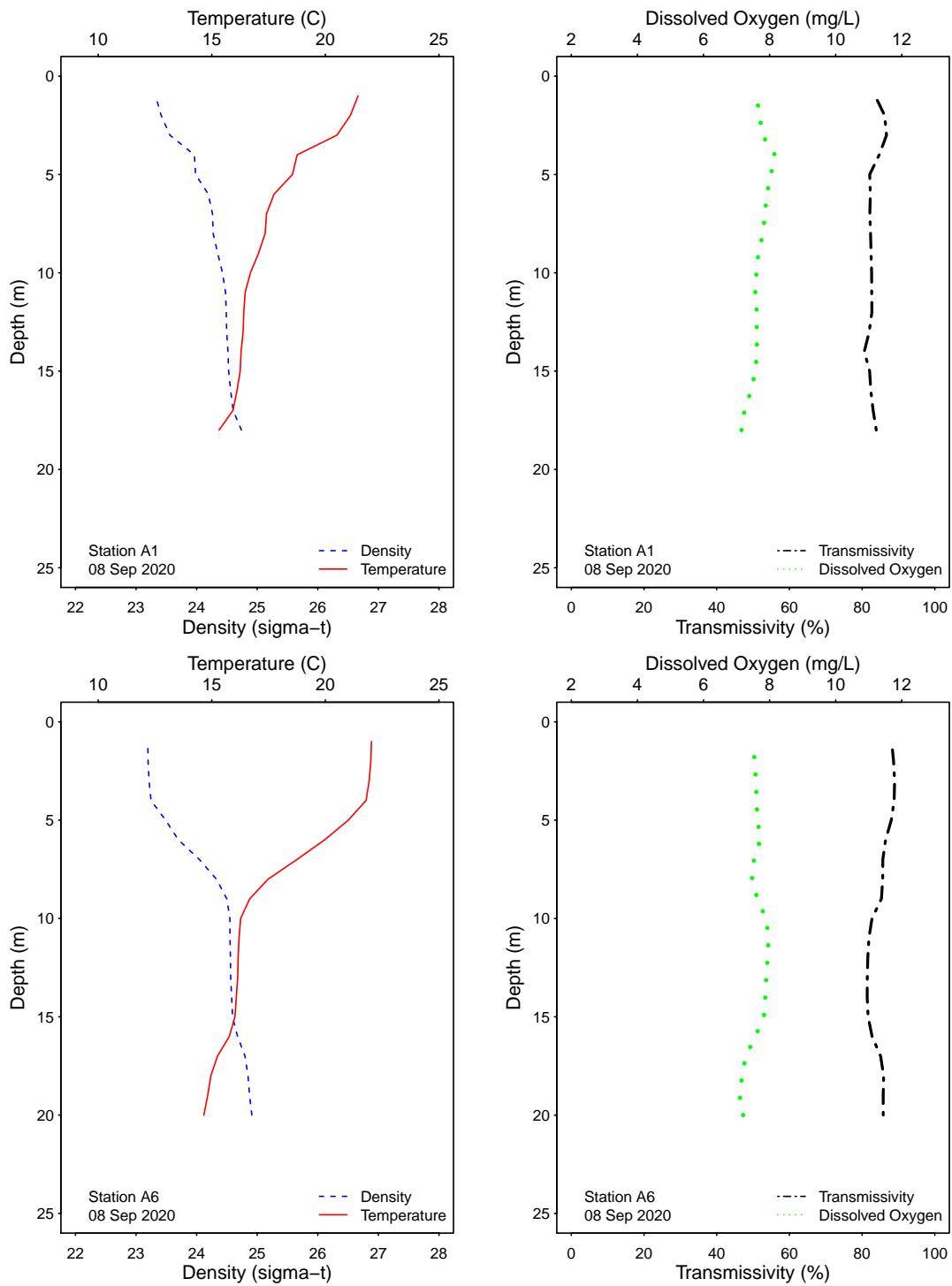


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

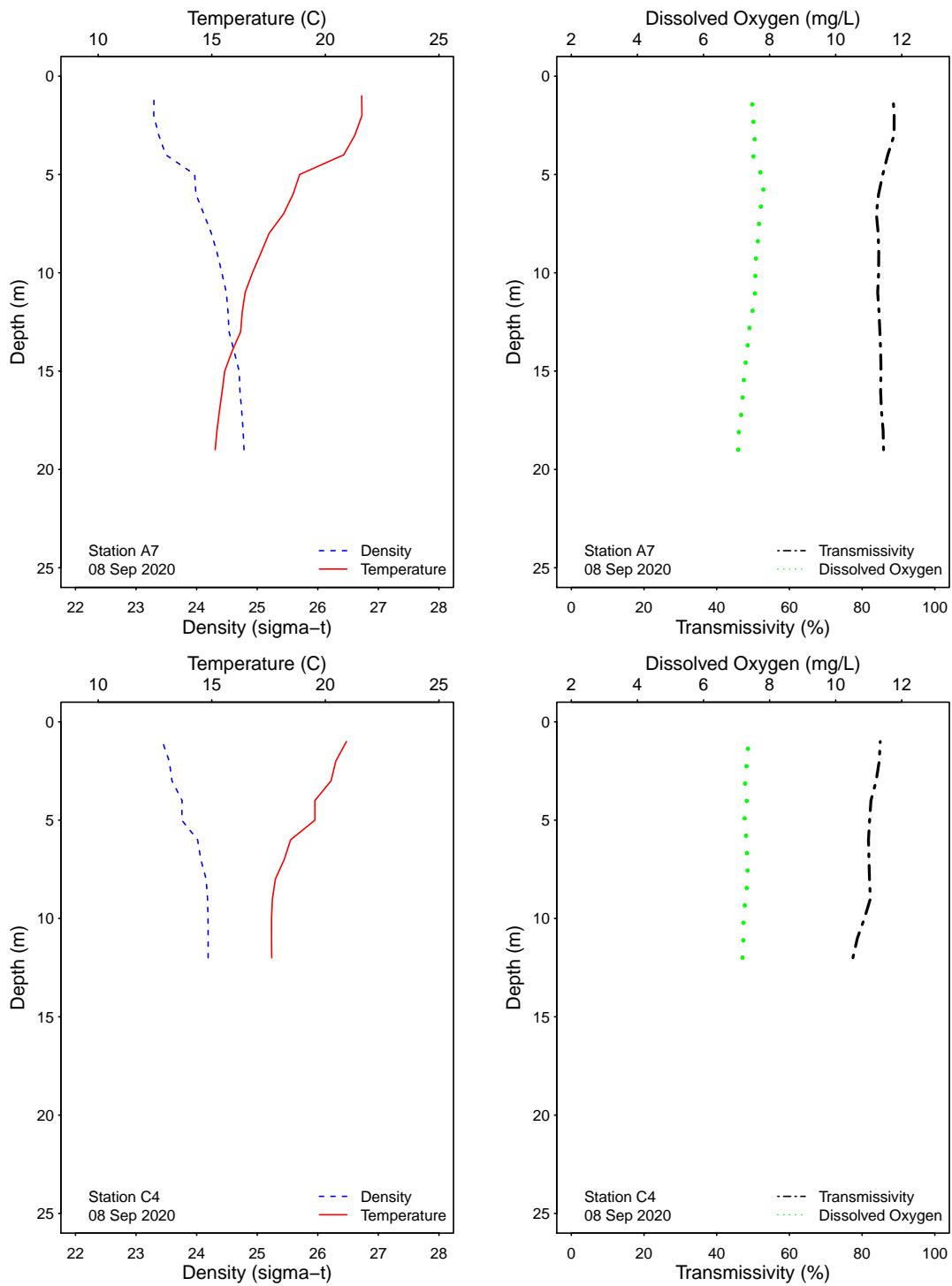


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

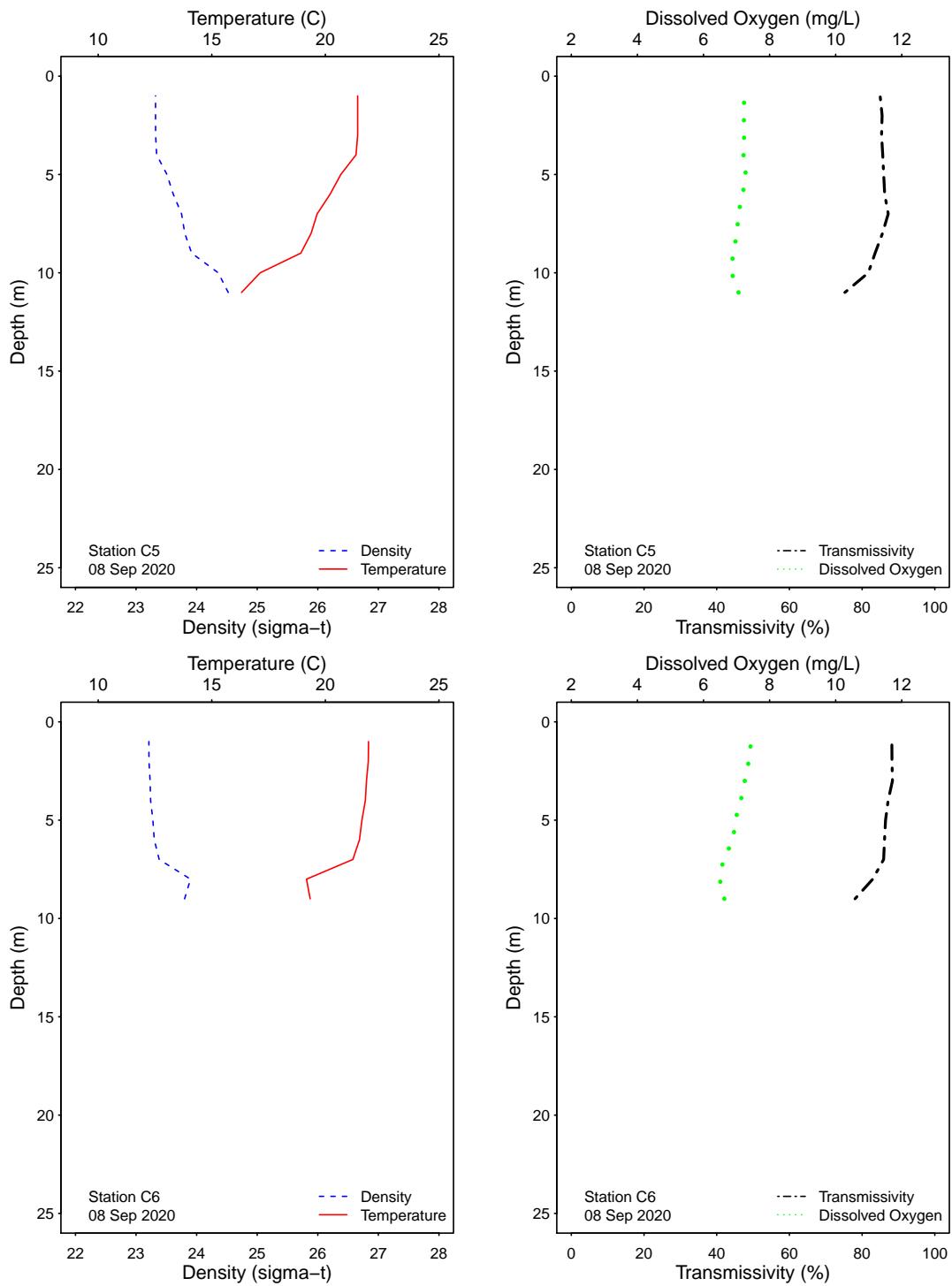


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

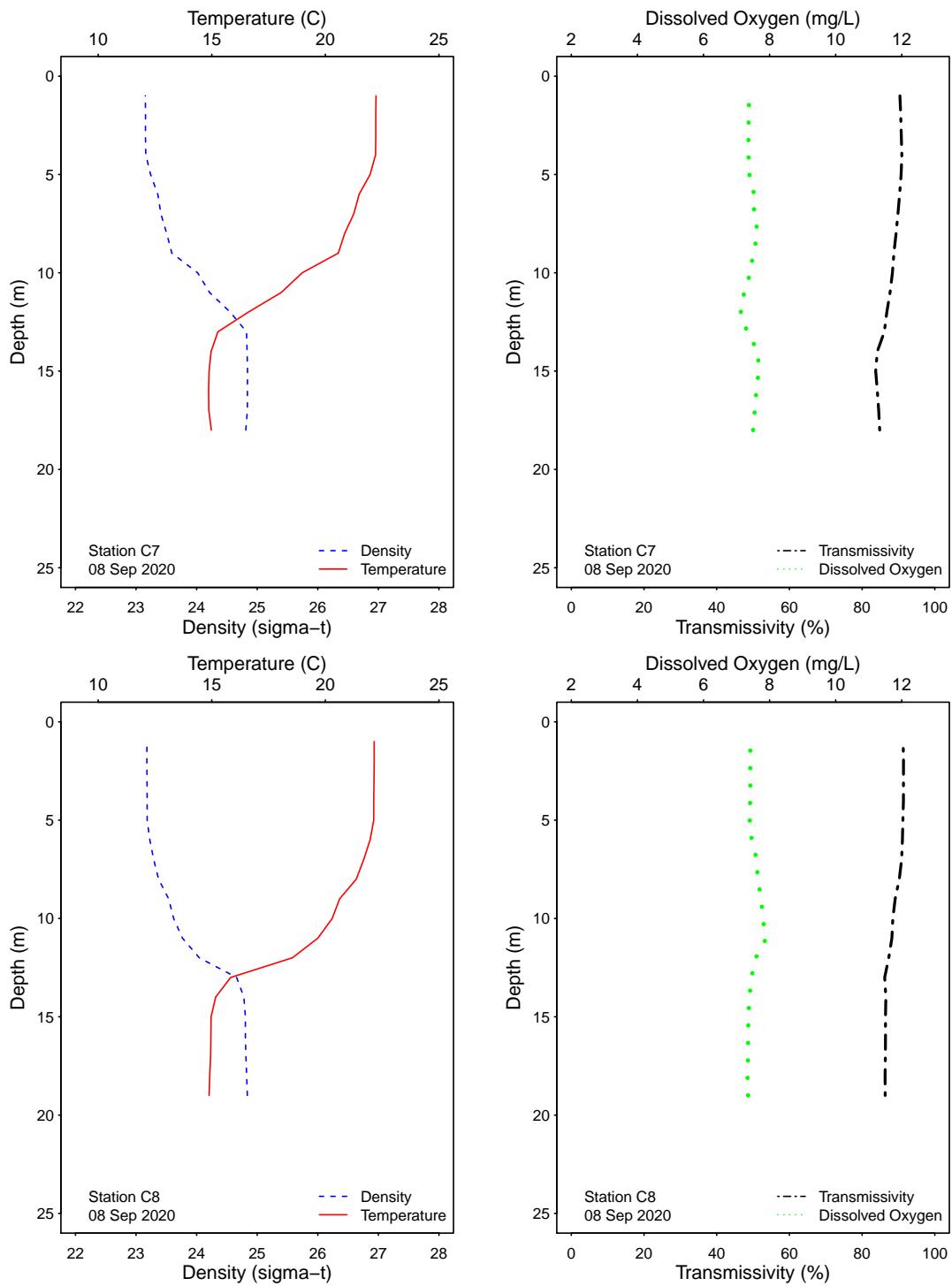


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

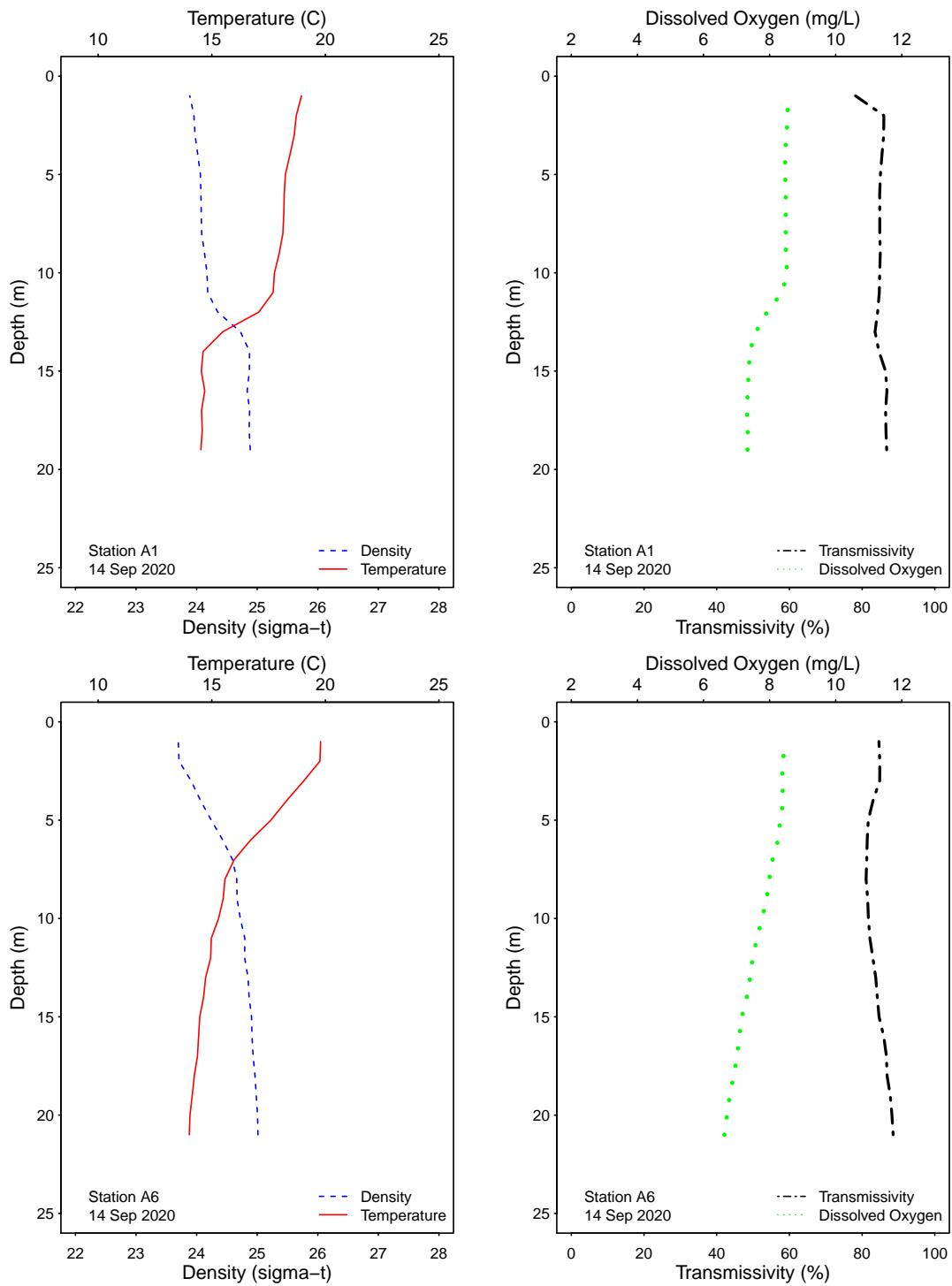


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

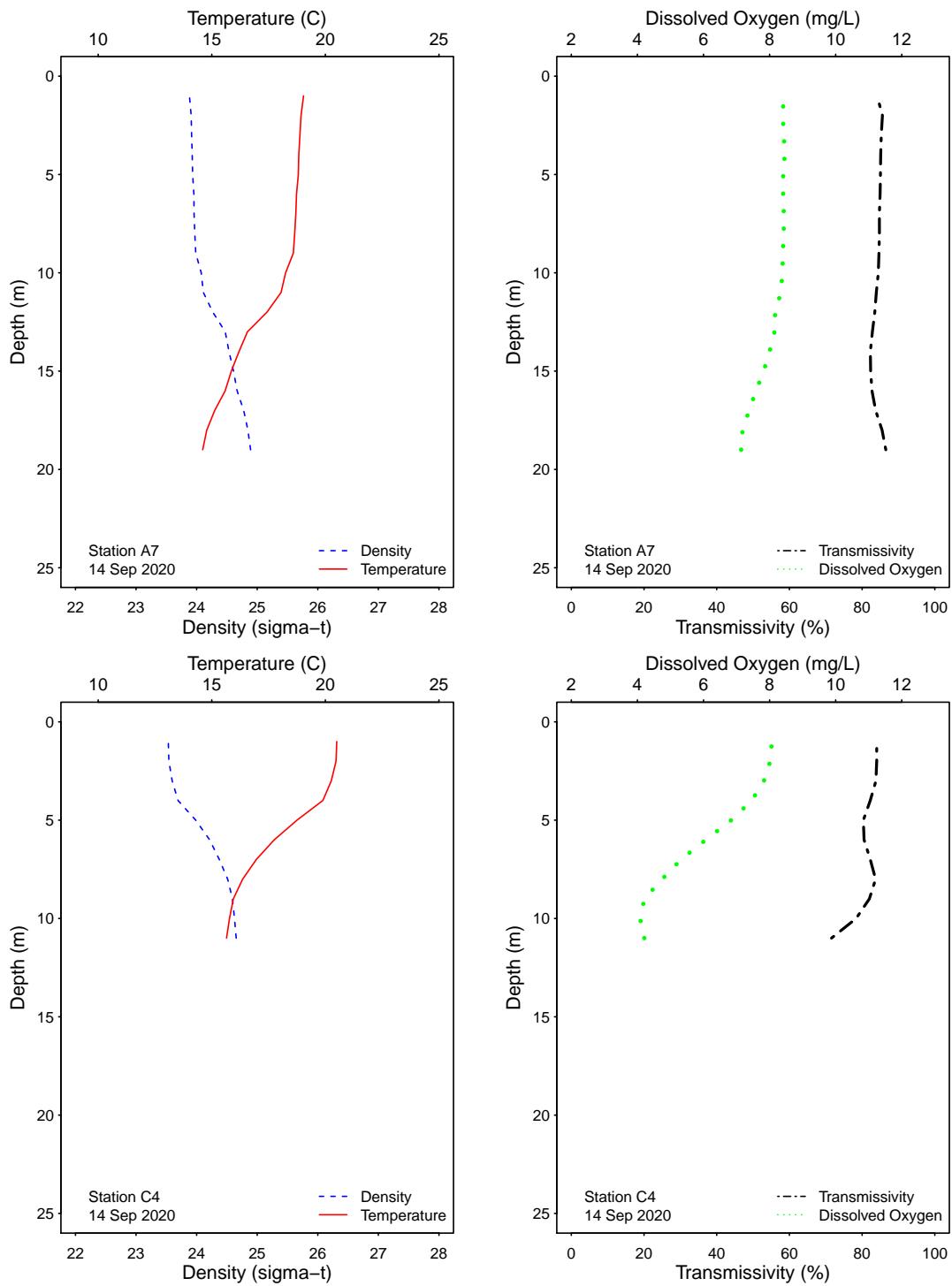


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

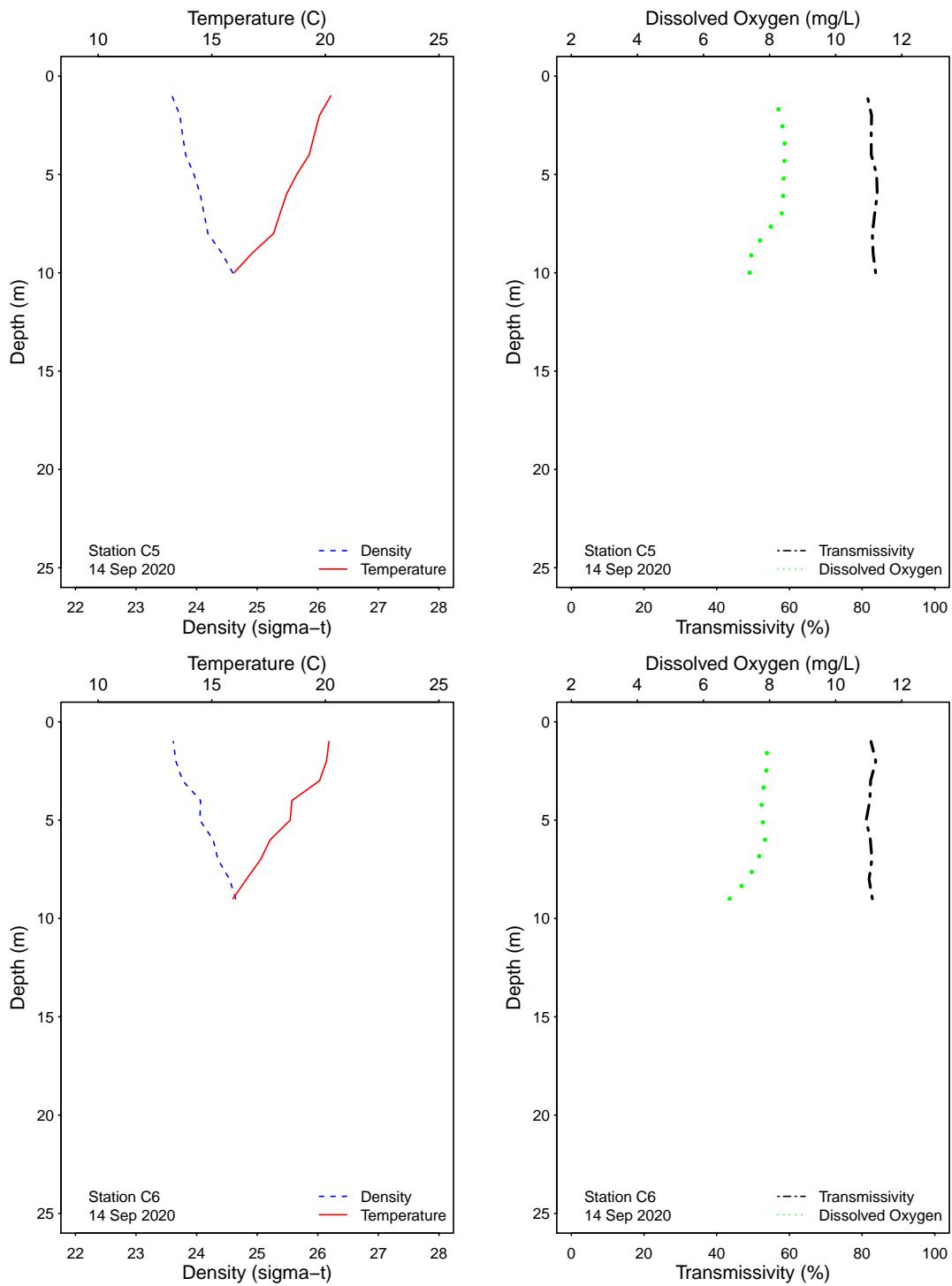


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

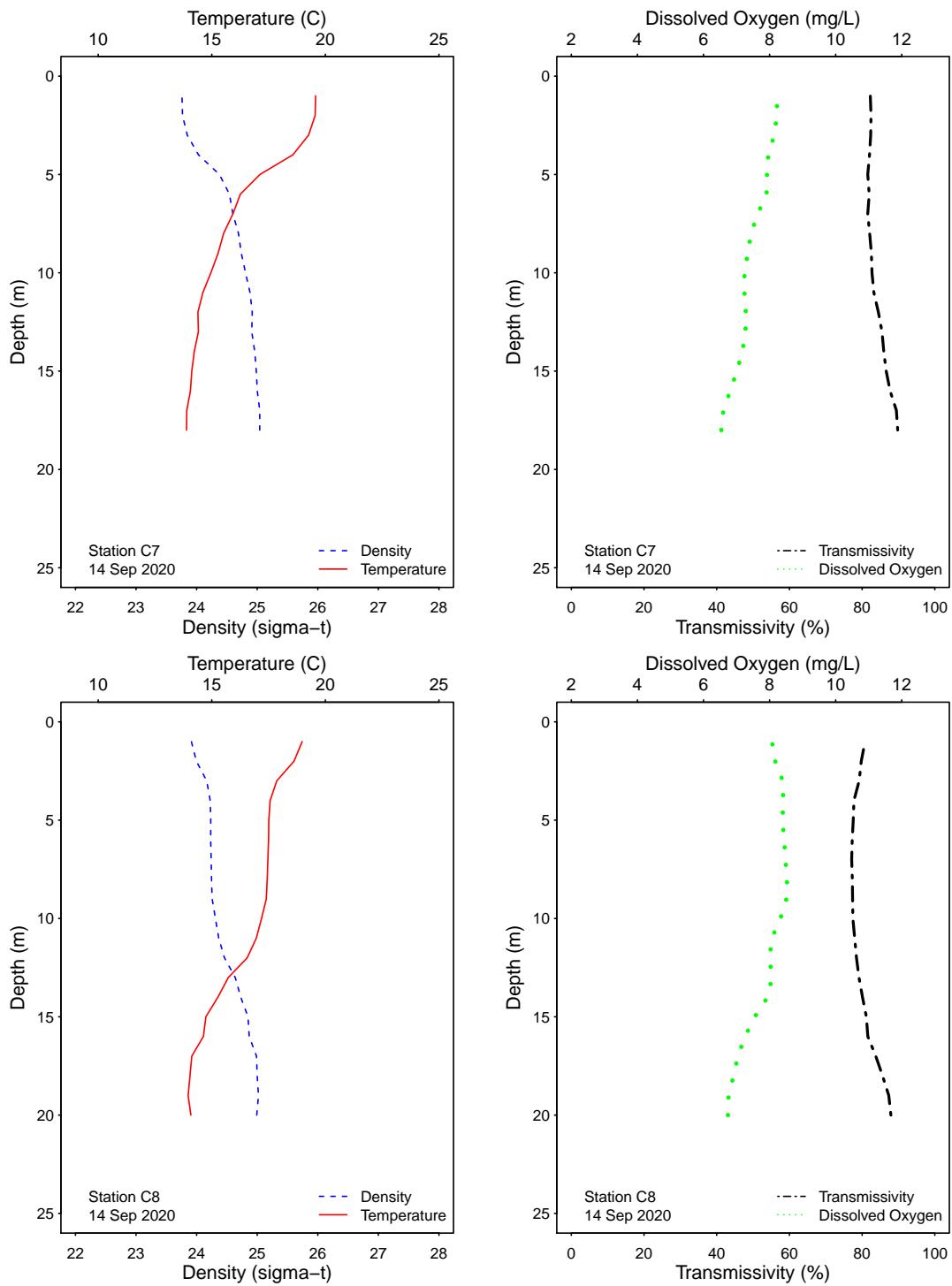


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

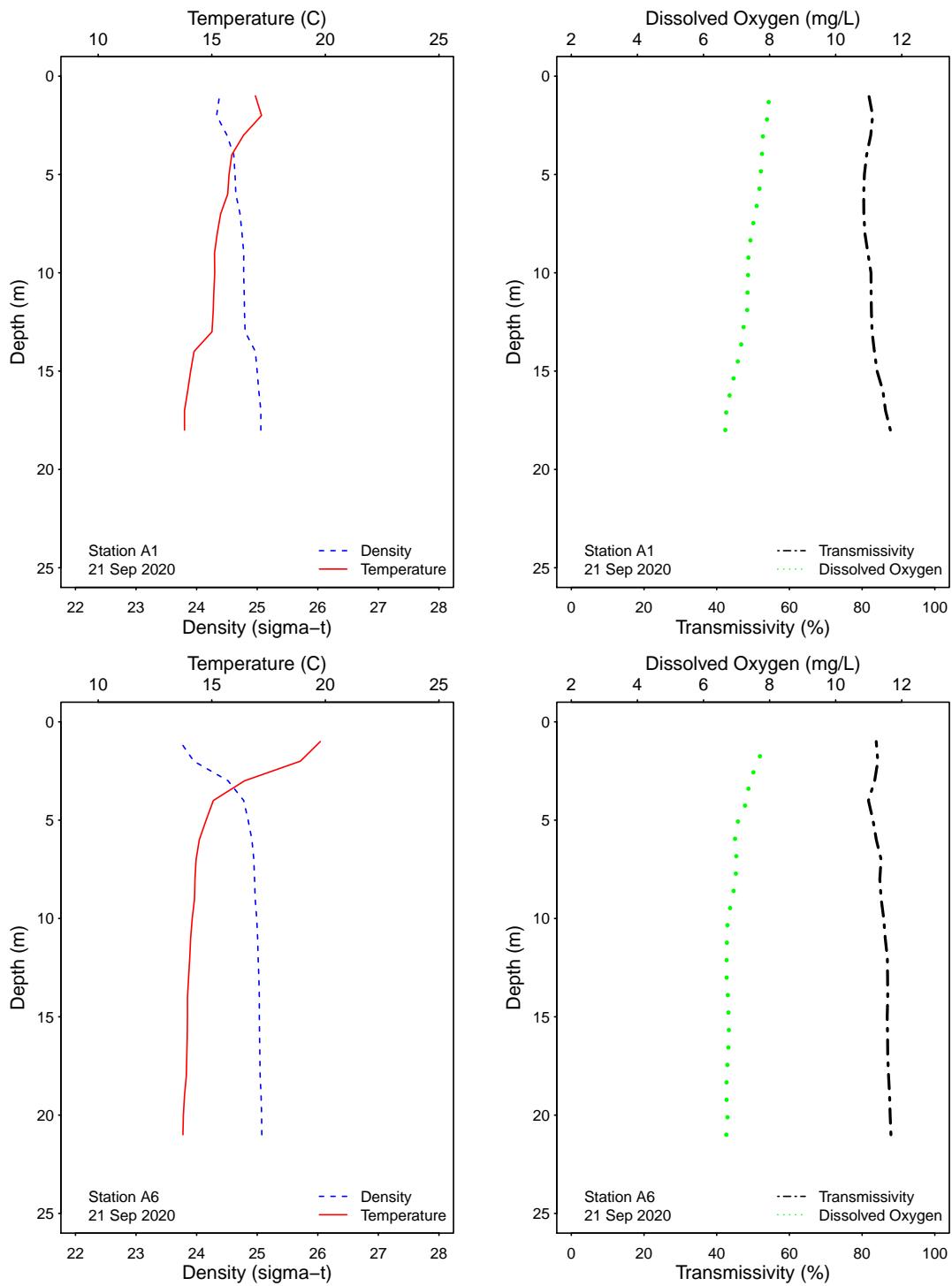


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

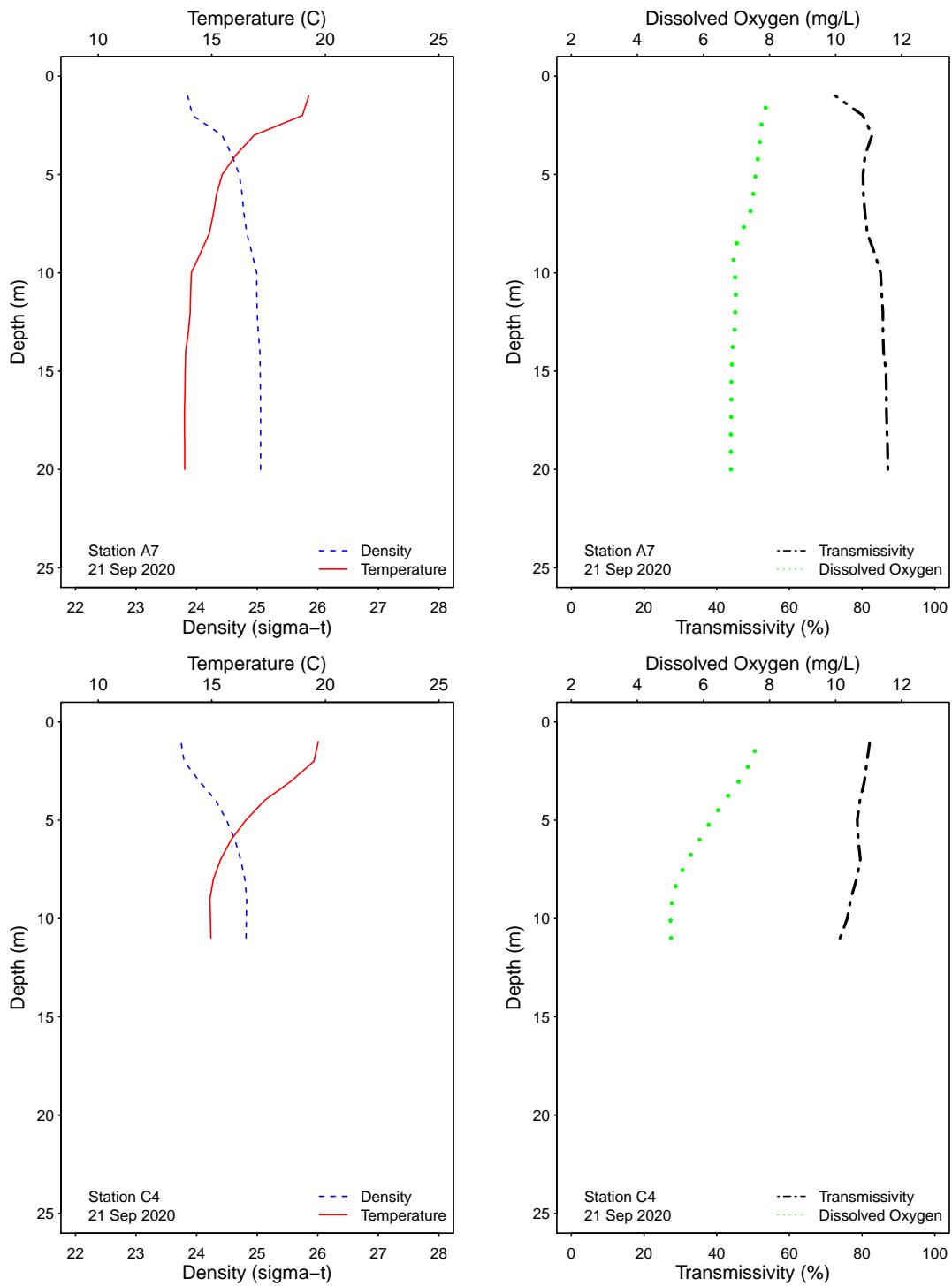


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

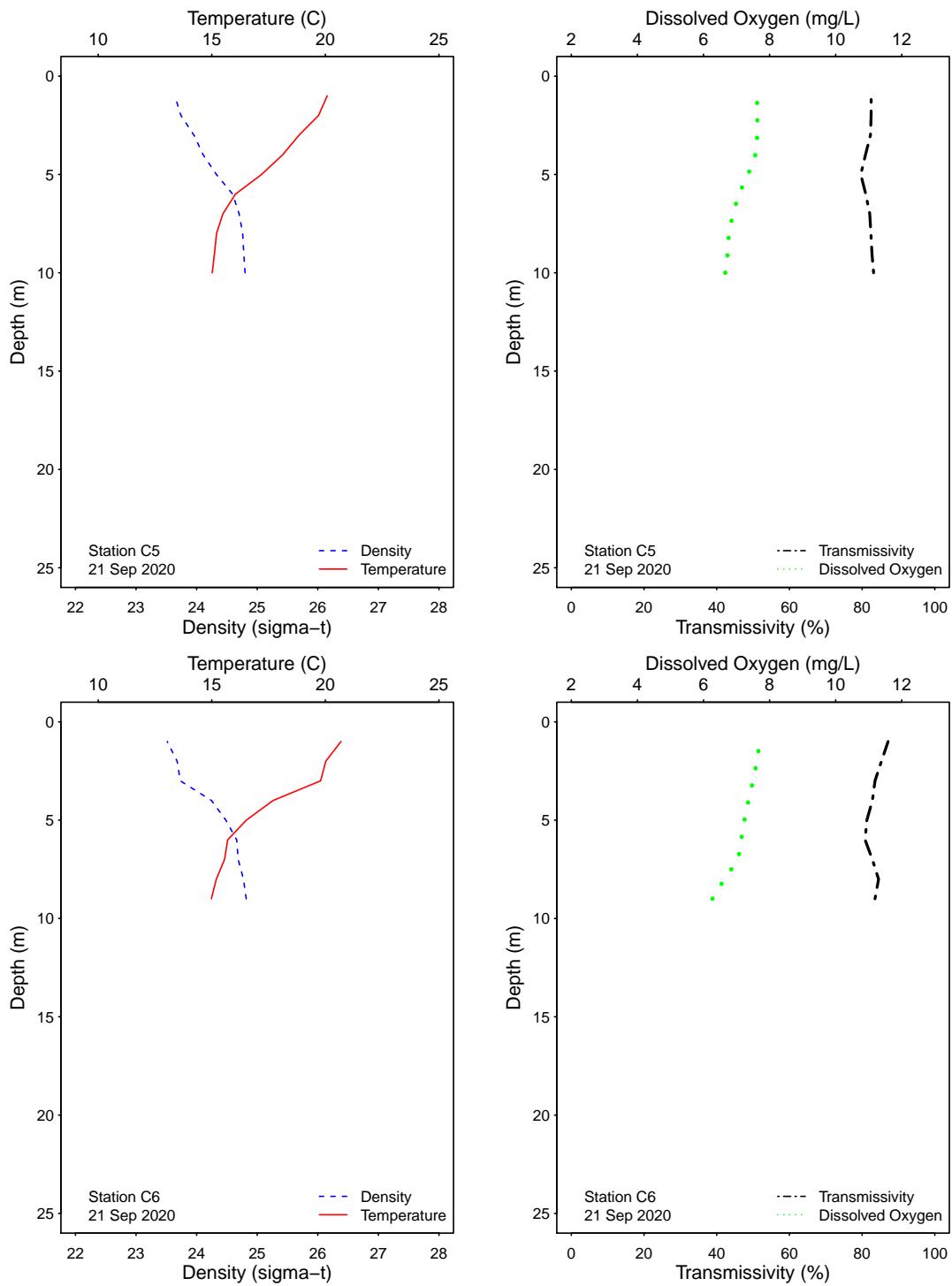


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

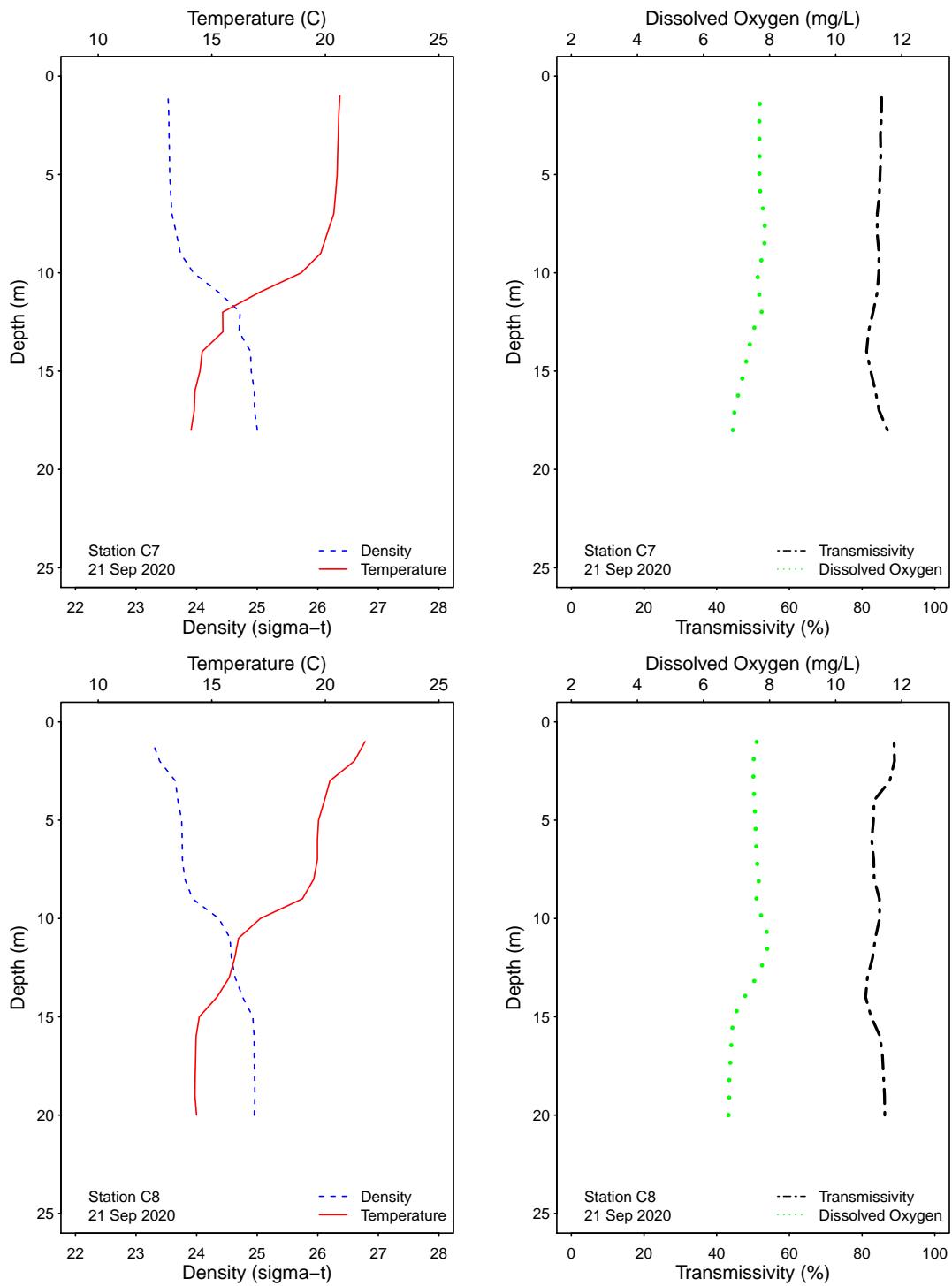


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

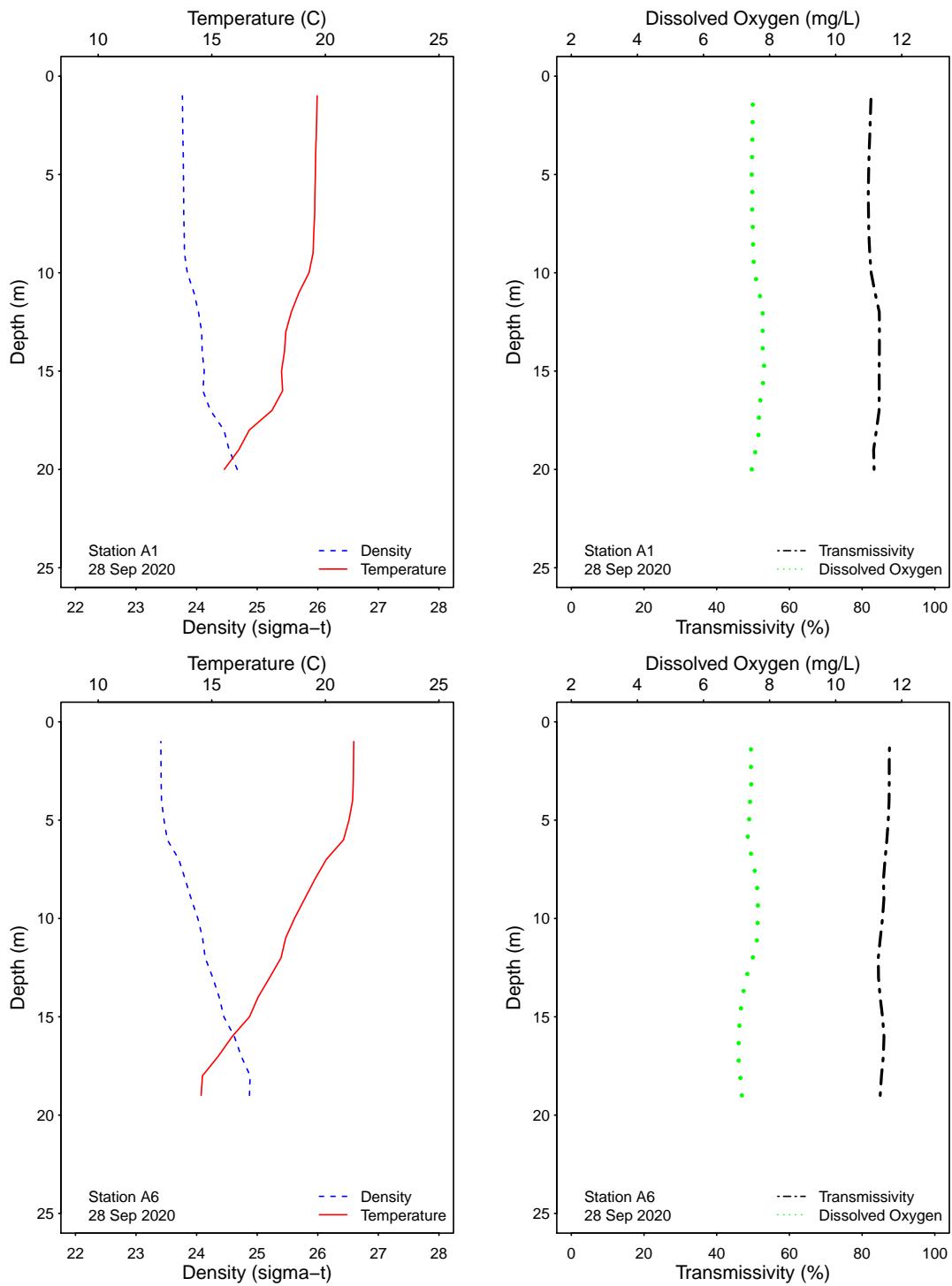


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

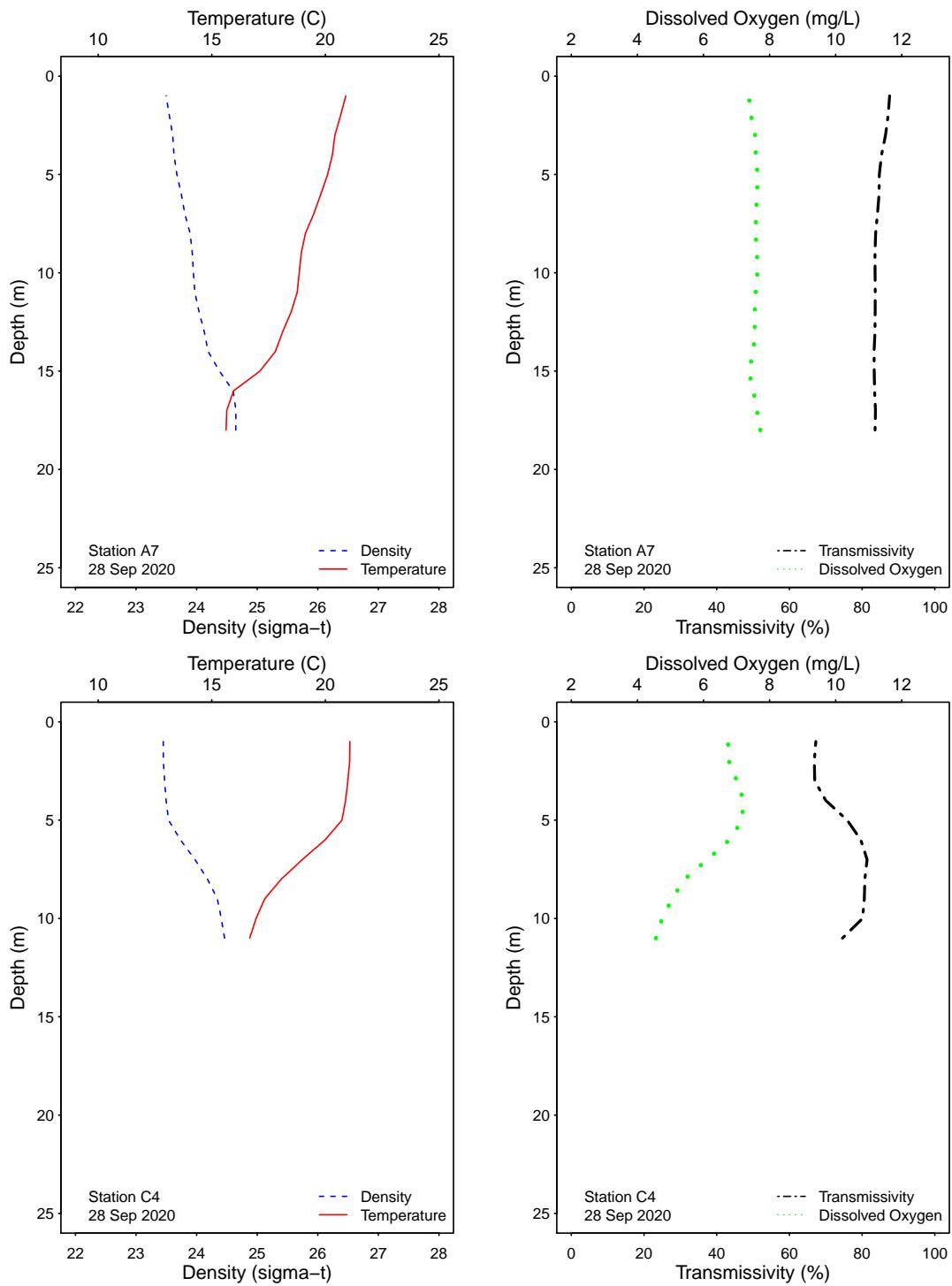


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

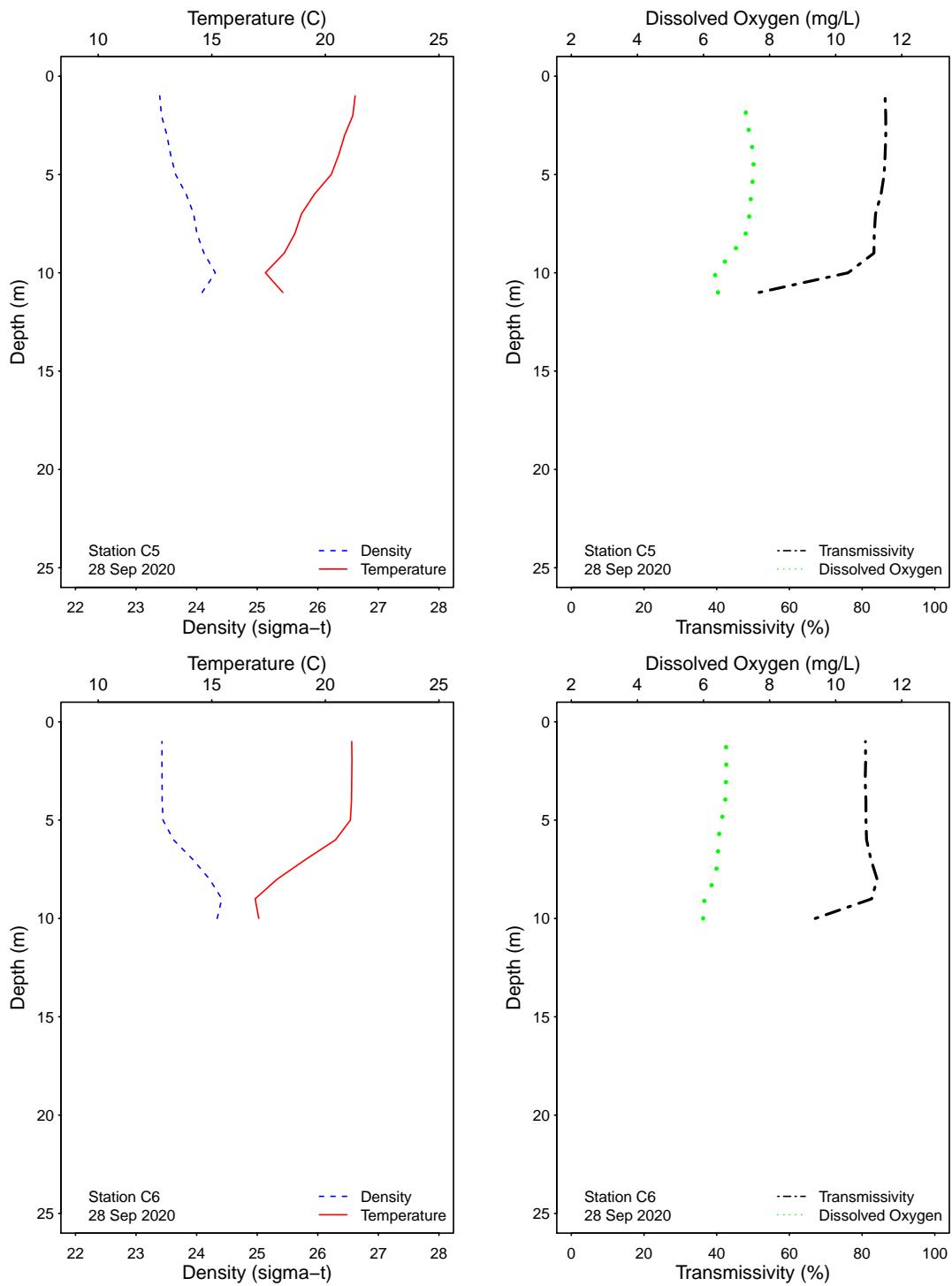


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

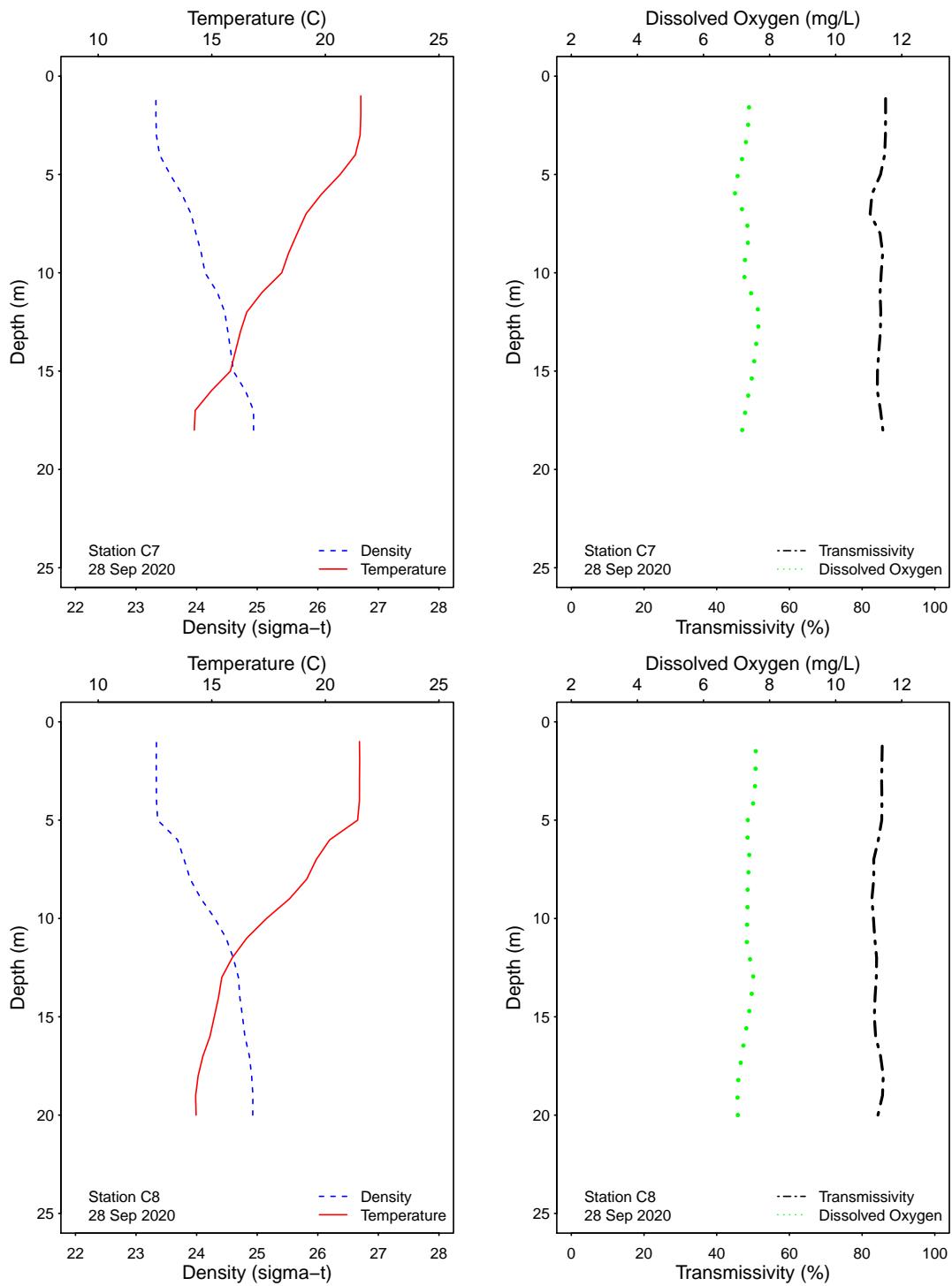


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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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* (Entero) are reported as CFU/100 mL.

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
A7	08 Sep 2020	18	BS	LAB DUPLICATE	<2	<2	<2
A7	14 Sep 2020	18	BS	LAB DUPLICATE	<2	<2	<2
A7	21 Sep 2020	18	BS	LAB DUPLICATE	8e	6e	<2
A7	28 Sep 2020	18	BS	LAB DUPLICATE	<20	2e	<2
C7	08 Sep 2020	18	AE	LAB DUPLICATE	<2	<2	<2
C7	14 Sep 2020	18	BS	LAB DUPLICATE	<2	<2	<2
C7	21 Sep 2020	18	BS	LAB DUPLICATE	<2	<2	<2
C7	28 Sep 2020	18	BS	LAB DUPLICATE	4e	<2	<2
C8	08 Sep 2020	12	JF	LAB DUPLICATE	<2	<2	<2
C8	14 Sep 2020	12	JF	LAB DUPLICATE	<2	<2	<2
C8	21 Sep 2020	12	BS	LAB DUPLICATE	<2	<2	<2
C8	28 Sep 2020	12	BS	LAB DUPLICATE	<2	<2	<2
D12	02 Sep 2020		AE	FIELD DUPLICATE	<20	14e	32e
D12	02 Sep 2020		AE	LAB DUPLICATE	20e	14e	36e
D12	09 Sep 2020		JF	FIELD DUPLICATE	60e	6e	12e
D12	09 Sep 2020		JF	LAB DUPLICATE	20e	10e	8e
D12	16 Sep 2020		AE	FIELD DUPLICATE	<20	<2	12e
D12	16 Sep 2020		AE	LAB DUPLICATE	<20	2e	6e
D12	23 Sep 2020		JF	FIELD DUPLICATE	4e	8e	2e
D12	23 Sep 2020		JF	LAB DUPLICATE	<20	14e	6e
D12	30 Sep 2020		JF	FIELD DUPLICATE	<20	2e	<2
D12	30 Sep 2020		JF	LAB DUPLICATE	<20	2e	2e

ns = not sampled

ND = no data

