



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

## **POINT LOMA WASTEWATER TREATMENT PLANT**

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

## **JULY 2020**

Environmental Monitoring and Technical Services  
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August 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 July 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 Public Utilities Director

RK:rg

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 July 1, 8, 15, 22, and 29.
- During July, each of the shore stations was in compliance with California Ocean Plan (Ocean Plan) water contact standards.
- Nothing of sewage origin was observed at any of the shore stations.
- 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 July 6, 13, 21, and 28.
- During July, each of the kelp bed stations was in compliance with the various Ocean Plan water contact standards.
- Water column temperatures ranged from 11.28 to 22.32°C. The difference between surface and bottom waters ranged from 3.09 to 9.65°C.
- Chlorophyll *a* concentrations ranged from 0.57 to 10.05 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.

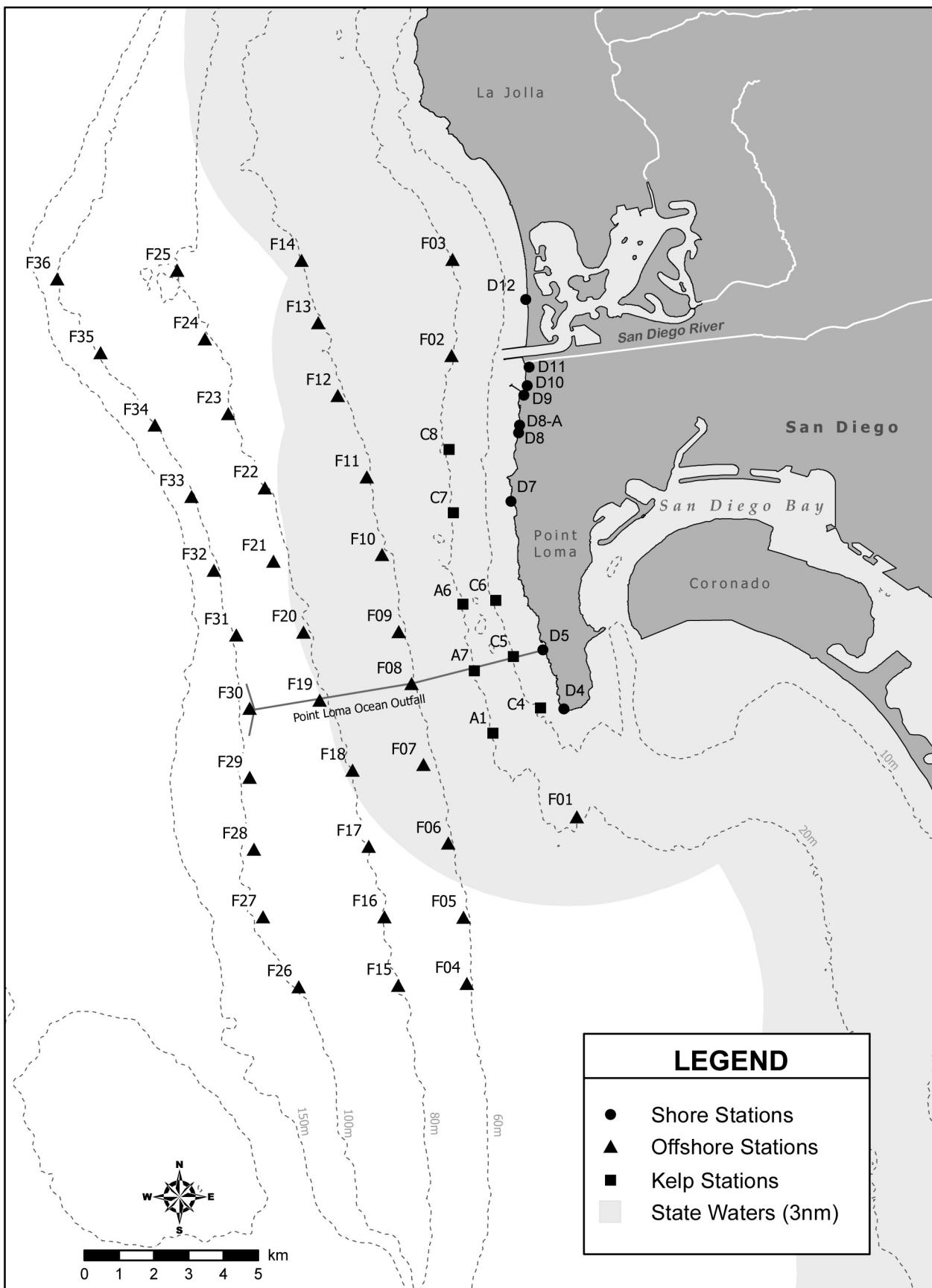
### ***Offshore Stations***

- Quarterly water quality sampling was not conducted during July at the offshore stations. The next quarterly sampling is scheduled for August 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 Jul 2020	13	23	20	23	42	30	45	11
02 Jul 2020	13	23	20	23	42	30	45	11
03 Jul 2020	11*	24*	20*	24*	50*	24*	56*	10*
04 Jul 2020	11*	24*	20*	24*	50*	24*	56*	10*
05 Jul 2020	11*	24*	20*	24*	50*	24*	56*	10*
06 Jul 2020	11*	24*	20*	24*	50*	24*	56*	10*
07 Jul 2020	11*	24*	20*	24*	50*	24*	56*	10*
08 Jul 2020	14	14	30	23	38	23	45	11
09 Jul 2020	14	14	30	23	38	23	45	11
10 Jul 2020	24*	13*	33*	24*	37*	24*	56*	13*
11 Jul 2020	24*	13*	33*	24*	37*	24*	56*	13*
12 Jul 2020	24*	13*	33*	24*	37*	24*	56*	13*
13 Jul 2020	24*	13*	33*	24*	37*	24*	56*	13*
14 Jul 2020	24*	13*	33*	24*	37*	24*	56*	13*
15 Jul 2020	14	9	30	18	26	23	45	9
16 Jul 2020	14	9	30	18	26	23	45	9
17 Jul 2020	13*	8*	33*	18*	15*	20*	42*	8*
18 Jul 2020	13*	8*	33*	18*	15*	20*	42*	8*
19 Jul 2020	13*	8*	33*	18*	15*	20*	42*	8*
20 Jul 2020	13*	8*	33*	18*	15*	20*	42*	8*
21 Jul 2020	13*	8*	33*	18*	15*	20*	42*	8*
22 Jul 2020	9	9	30	27	16	20	42	9
23 Jul 2020	9	9	30	27	16	20	42	9
24 Jul 2020	8*	8*	33*	30*	15*	20*	42*	11*
25 Jul 2020	8*	8*	33*	30*	15*	20*	42*	11*
26 Jul 2020	8*	8*	33*	30*	15*	20*	42*	11*
27 Jul 2020	8*	8*	33*	30*	15*	20*	42*	11*
28 Jul 2020	8*	8*	33*	30*	15*	20*	42*	11*
29 Jul 2020	6	9	19	27	16	20	33	8
30 Jul 2020	6	9	19	27	16	20	33	8
31 Jul 2020	4*	6*	18*	25*	13*	20*	21*	6*

\* 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 Jul 2020	2	4	3	3	6	8	9	2
02 Jul 2020	2	4	3	3	6	8	9	2
03 Jul 2020	2*	4*	3*	3*	7*	9*	10*	2*
04 Jul 2020	2*	4*	3*	3*	7*	9*	10*	2*
05 Jul 2020	2*	4*	3*	3*	7*	9*	10*	2*
06 Jul 2020	2*	4*	3*	3*	7*	9*	10*	2*
07 Jul 2020	2*	4*	3*	3*	7*	9*	10*	2*
08 Jul 2020	2	4	7	3	6	9	7	2
09 Jul 2020	2	4	7	3	6	9	7	2
10 Jul 2020	2*	4*	9*	3*	5*	7*	6*	2*
11 Jul 2020	2*	4*	9*	3*	5*	7*	6*	2*
12 Jul 2020	2*	4*	9*	3*	5*	7*	6*	2*
13 Jul 2020	2*	4*	9*	3*	5*	7*	6*	2*
14 Jul 2020	2*	4*	9*	3*	5*	7*	6*	2*
15 Jul 2020	2	4	7	3	4	6	5	2
16 Jul 2020	2	4	7	3	4	6	5	2
17 Jul 2020	2*	2*	9*	3*	2*	5*	5*	2*
18 Jul 2020	2*	2*	9*	3*	2*	5*	5*	2*
19 Jul 2020	2*	2*	9*	3*	2*	5*	5*	2*
20 Jul 2020	2*	2*	9*	3*	2*	5*	5*	2*
21 Jul 2020	2*	2*	9*	3*	2*	5*	5*	2*
22 Jul 2020	3	2	7	6	2	6	6	2
23 Jul 2020	3	2	7	6	2	6	6	2
24 Jul 2020	3*	2*	7*	5*	2*	6*	7*	2*
25 Jul 2020	3*	2*	7*	5*	2*	6*	7*	2*
26 Jul 2020	3*	2*	7*	5*	2*	6*	7*	2*
27 Jul 2020	3*	2*	7*	5*	2*	6*	7*	2*
28 Jul 2020	3*	2*	7*	5*	2*	6*	7*	2*
29 Jul 2020	3	3	5	5	2	5	5	2
30 Jul 2020	3	3	5	5	2	5	5	2
31 Jul 2020	3*	3*	5*	6*	2*	5*	4*	2*

\* 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 Jul 2020	2	2	3	2	2	5	3	2
02 Jul 2020	2	2	3	2	2	5	3	2
03 Jul 2020	2*	2*	3*	2*	2*	5*	3*	3*
04 Jul 2020	2*	2*	3*	2*	2*	5*	3*	3*
05 Jul 2020	2*	2*	3*	2*	2*	5*	3*	3*
06 Jul 2020	2*	2*	3*	2*	2*	5*	3*	3*
07 Jul 2020	2*	2*	3*	2*	2*	5*	3*	3*
08 Jul 2020	2	2	3	2	2	5	3	2
09 Jul 2020	2	2	3	2	2	5	3	2
10 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
11 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
12 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
13 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
14 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
15 Jul 2020	2	2	3	2	2	5	2	2
16 Jul 2020	2	2	3	2	2	5	2	2
17 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
18 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
19 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
20 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
21 Jul 2020	2*	2*	3*	2*	2*	6*	2*	2*
22 Jul 2020	2	2	3	2	2	8	3	2
23 Jul 2020	2	2	3	2	2	8	3	2
24 Jul 2020	2*	2*	3*	2*	2*	6*	3*	2*
25 Jul 2020	2*	2*	3*	2*	2*	6*	3*	2*
26 Jul 2020	2*	2*	3*	2*	2*	6*	3*	2*
27 Jul 2020	2*	2*	3*	2*	2*	6*	3*	2*
28 Jul 2020	2*	2*	3*	2*	2*	6*	3*	2*
29 Jul 2020	2	2	3	2	2	5	3	2
30 Jul 2020	2	2	3	2	2	5	3	2
31 Jul 2020	2*	2*	2*	2*	2*	4*	3*	2*

\* 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
01 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Jul 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
01 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Jul 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
01 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Jul 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
01 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Jul 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Jul 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	01 Jul 2020	800	20e	2e	<2	0.10
	08 Jul 2020	906	40e	<2	<2	0.05
	15 Jul 2020	750	2e	<2	<2	1.00
	22 Jul 2020	747	2e	8e	<2	4.00
	29 Jul 2020	757	2e	<2	<2	1.00
D5	01 Jul 2020	818	40e	<2	<2	0.05
	08 Jul 2020	852	2e	<2	<2	1.00
	15 Jul 2020	806	<2	<2	<2	1.00
	22 Jul 2020	759	20e	<2	<2	0.10
	29 Jul 2020	812	16e	10e	<2	0.62
D7	01 Jul 2020	841	<20	6e	8e	0.30
	08 Jul 2020	933	140e	94	2e	0.67
	15 Jul 2020	853	<20	<2	2e	0.10
	22 Jul 2020	851	20e	<2	<2	0.10
	29 Jul 2020	846	2e	2e	4e	1.00
D8-B	01 Jul 2020	856	40e	<2	2e	0.05
	08 Jul 2020	952	<20	<2	<2	0.10
	15 Jul 2020	911	6e	<2	<2	0.33
	22 Jul 2020	903	160e	80e	<2	0.50
	29 Jul 2020	910	<20	4e	<2	0.20
D9	01 Jul 2020	907	40e	4e	2e	0.10
	08 Jul 2020	1008	12e	<2	<2	0.17
	15 Jul 2020	924	6e	<2	<2	0.33
	22 Jul 2020	915	20e	2e	<2	0.10
	29 Jul 2020	925	18e	<2	<2	0.11
D10	01 Jul 2020	923	20e	6e	8e	0.30
	08 Jul 2020	1025	<20	8e	6e	0.40
	15 Jul 2020	937	<20	<2	<2	0.10
	22 Jul 2020	933	20e	14e	16e	0.70
	29 Jul 2020	943	<20	<2	2e	0.10
D11	01 Jul 2020	939	<200	<20	<2	0.10
	08 Jul 2020	1055	<20	<2	<2	0.10
	15 Jul 2020	951	<20	4e	<2	0.20
	22 Jul 2020	945	40e	12e	12e	0.30
	29 Jul 2020	1014	12e	2e	2e	0.17

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
D12	01 Jul 2020	1024	<20	<2	2e	0.10
D12	08 Jul 2020	1120	<20	<2	<2	0.10
D12	15 Jul 2020	1100	<2	<2	<2	1.00
D12	22 Jul 2020	1015	<20	<2	<2	0.10
D12	29 Jul 2020	1103	<2	<2	<2	1.00

ns = not sampled

ND = no data

**Table 2.9**

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

Station	Date	Parameter	Value
D4	01 Jul 2020	Arrive Time	800
D4	01 Jul 2020	Weather	Cloudy
D4	01 Jul 2020	Wind Speed (kts)	2.1
D4	01 Jul 2020	Wind Dir	W
D4	01 Jul 2020	Animal Life	3 Cormorants; 1 Pelican
D4	01 Jul 2020	Floatables	Foam
D4	01 Jul 2020	Water Color	Green
D4	01 Jul 2020	Current Direction	N
D4	01 Jul 2020	Water Temp (C)	19.9
D4	01 Jul 2020	Wave Height Low (ft)	2
D4	01 Jul 2020	High Tide (ft)	3.6
D4	01 Jul 2020	High Tide Time	720
D4	01 Jul 2020	Low Tide (ft)	1.5
D4	01 Jul 2020	Low Tide Time	1233
D4	01 Jul 2020	Comments	Kelp; 17 Surfers; 9 Boats; Water clear
D4	08 Jul 2020	Arrive Time	906
D4	08 Jul 2020	Weather	Cloudy
D4	08 Jul 2020	Wind Speed (kts)	5.2
D4	08 Jul 2020	Wind Dir	W
D4	08 Jul 2020	Animal Life	2 Pelicans; 1 Seagull; 1 Tern
D4	08 Jul 2020	Floatables	None
D4	08 Jul 2020	Water Color	Blue
D4	08 Jul 2020	Current Direction	N
D4	08 Jul 2020	Water Temp (C)	23.1
D4	08 Jul 2020	Wave Height Low (ft)	2
D4	08 Jul 2020	High Tide (ft)	3.9
D4	08 Jul 2020	High Tide Time	1257
D4	08 Jul 2020	Low Tide (ft)	-0.5
D4	08 Jul 2020	Low Tide Time	627
D4	08 Jul 2020	Comments	Kelp; Algae; Water clear
D4	15 Jul 2020	Arrive Time	750
D4	15 Jul 2020	Weather	Sunny
D4	15 Jul 2020	Wind Speed (kts)	2.7
D4	15 Jul 2020	Wind Dir	W
D4	15 Jul 2020	Animal Life	None
D4	15 Jul 2020	Floatables	None
D4	15 Jul 2020	Water Color	Green
D4	15 Jul 2020	Current Direction	S
D4	15 Jul 2020	Water Temp (C)	22.7
D4	15 Jul 2020	Wave Height Low (ft)	1
D4	15 Jul 2020	High Tide (ft)	3
D4	15 Jul 2020	High Tide Time	656
D4	15 Jul 2020	Low Tide (ft)	2.1
D4	15 Jul 2020	Low Tide Time	1143
D4	15 Jul 2020	Comments	Kelp; Seagrass; Algae; 4 Surfers; 2 Boats; Water clear
D4	22 Jul 2020	Arrive Time	747
D4	22 Jul 2020	Weather	Cloudy
D4	22 Jul 2020	Wind Speed (kts)	2.1

Station	Date	Parameter	Value
D4	22 Jul 2020	Wind Dir	W
D4	22 Jul 2020	Animal Life	2 Cormorants; 1 Pelican; 1 Seagull; 2 Terns; 3 Heron
D4	22 Jul 2020	Floatables	None
D4	22 Jul 2020	Water Color	Green
D4	22 Jul 2020	Current Direction	S
D4	22 Jul 2020	Water Temp (C)	18.1
D4	22 Jul 2020	Wave Height Low (ft)	2
D4	22 Jul 2020	High Tide (ft)	4.1
D4	22 Jul 2020	High Tide Time	1143
D4	22 Jul 2020	Low Tide (ft)	-1
D4	22 Jul 2020	Low Tide Time	522
D4	22 Jul 2020	Comments	Kelp; Seagrass; Algae; 2 Surfers; 3 Boats; Water clear
D4	29 Jul 2020	Arrive Time	757
D4	29 Jul 2020	Weather	Overcast
D4	29 Jul 2020	Wind Speed (kts)	2.1
D4	29 Jul 2020	Wind Dir	NW
D4	29 Jul 2020	Animal Life	None
D4	29 Jul 2020	Floatables	None
D4	29 Jul 2020	Water Color	Green
D4	29 Jul 2020	Current Direction	S
D4	29 Jul 2020	Water Temp (C)	18.8
D4	29 Jul 2020	Wave Height Low (ft)	1
D4	29 Jul 2020	High Tide (ft)	3.3
D4	29 Jul 2020	High Tide Time	624
D4	29 Jul 2020	Low Tide (ft)	2
D4	29 Jul 2020	Low Tide Time	1116
D4	29 Jul 2020	Comments	Kelp; Seagrass; Algae; 3 Surfers; 2 Boats; Water clear
D5	01 Jul 2020	Arrive Time	818
D5	01 Jul 2020	Weather	Cloudy
D5	01 Jul 2020	Wind Speed (kts)	1.7
D5	01 Jul 2020	Wind Dir	SW
D5	01 Jul 2020	Animal Life	1 Cormorant
D5	01 Jul 2020	Floatables	Foam
D5	01 Jul 2020	Water Color	Green
D5	01 Jul 2020	Current Direction	N
D5	01 Jul 2020	Water Temp (C)	20.9
D5	01 Jul 2020	Wave Height Low (ft)	4
D5	01 Jul 2020	High Tide (ft)	3.6
D5	01 Jul 2020	High Tide Time	720
D5	01 Jul 2020	Low Tide (ft)	1.5
D5	01 Jul 2020	Low Tide Time	1233
D5	01 Jul 2020	Comments	Kelp; Seagrass; Algae; Water turbid
D5	08 Jul 2020	Arrive Time	852
D5	08 Jul 2020	Weather	Cloudy
D5	08 Jul 2020	Wind Speed (kts)	0.5
D5	08 Jul 2020	Wind Dir	W
D5	08 Jul 2020	Animal Life	1 Cormorant; 1 Seagull; 3 Terns
D5	08 Jul 2020	Floatables	None
D5	08 Jul 2020	Water Color	Blue
D5	08 Jul 2020	Current Direction	N
D5	08 Jul 2020	Water Temp (C)	22.7
D5	08 Jul 2020	Wave Height Low (ft)	1

Station	Date	Parameter	Value
D5	08 Jul 2020	High Tide (ft)	3.9
D5	08 Jul 2020	High Tide Time	1257
D5	08 Jul 2020	Low Tide (ft)	-0.5
D5	08 Jul 2020	Low Tide Time	627
D5	08 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D5	15 Jul 2020	Arrive Time	806
D5	15 Jul 2020	Weather	Sunny
D5	15 Jul 2020	Wind Speed (kts)	3.1
D5	15 Jul 2020	Wind Dir	W
D5	15 Jul 2020	Animal Life	1 Fish
D5	15 Jul 2020	Floatables	Foam; Film
D5	15 Jul 2020	Water Color	Green
D5	15 Jul 2020	Current Direction	S
D5	15 Jul 2020	Water Temp (C)	23.1
D5	15 Jul 2020	Wave Height Low (ft)	2
D5	15 Jul 2020	High Tide (ft)	3
D5	15 Jul 2020	High Tide Time	656
D5	15 Jul 2020	Low Tide (ft)	2.1
D5	15 Jul 2020	Low Tide Time	1143
D5	15 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D5	22 Jul 2020	Arrive Time	759
D5	22 Jul 2020	Weather	Cloudy
D5	22 Jul 2020	Wind Speed (kts)	0
D5	22 Jul 2020	Wind Dir	
D5	22 Jul 2020	Animal Life	1 Cormorant
D5	22 Jul 2020	Floatables	None
D5	22 Jul 2020	Water Color	Green
D5	22 Jul 2020	Current Direction	S
D5	22 Jul 2020	Water Temp (C)	17.4
D5	22 Jul 2020	Wave Height Low (ft)	2
D5	22 Jul 2020	High Tide (ft)	4.1
D5	22 Jul 2020	High Tide Time	1143
D5	22 Jul 2020	Low Tide (ft)	-1
D5	22 Jul 2020	Low Tide Time	522
D5	22 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Boat; Water turbid
D5	29 Jul 2020	Arrive Time	812
D5	29 Jul 2020	Weather	Overcast
D5	29 Jul 2020	Wind Speed (kts)	1.7
D5	29 Jul 2020	Wind Dir	NW
D5	29 Jul 2020	Animal Life	None
D5	29 Jul 2020	Floatables	Foam; Film
D5	29 Jul 2020	Water Color	Green
D5	29 Jul 2020	Current Direction	S
D5	29 Jul 2020	Water Temp (C)	18.6
D5	29 Jul 2020	Wave Height Low (ft)	1
D5	29 Jul 2020	High Tide (ft)	3.3
D5	29 Jul 2020	High Tide Time	624
D5	29 Jul 2020	Low Tide (ft)	2
D5	29 Jul 2020	Low Tide Time	1116
D5	29 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D7	01 Jul 2020	Arrive Time	841

Station	Date	Parameter	Value
D7	01 Jul 2020	Weather	Cloudy
D7	01 Jul 2020	Wind Speed (kts)	3.8
D7	01 Jul 2020	Wind Dir	W
D7	01 Jul 2020	Animal Life	None
D7	01 Jul 2020	Floatables	Foam
D7	01 Jul 2020	Water Color	Green
D7	01 Jul 2020	Current Direction	N
D7	01 Jul 2020	Water Temp (C)	20.7
D7	01 Jul 2020	Wave Height Low (ft)	3
D7	01 Jul 2020	High Tide (ft)	3.6
D7	01 Jul 2020	High Tide Time	720
D7	01 Jul 2020	Low Tide (ft)	1.5
D7	01 Jul 2020	Low Tide Time	1233
D7	01 Jul 2020	Comments	Kelp; Seagrass; Algae; 24 Surfers; Water turbid
D7	08 Jul 2020	Arrive Time	933
D7	08 Jul 2020	Weather	Partly Cloudy
D7	08 Jul 2020	Wind Speed (kts)	3.1
D7	08 Jul 2020	Wind Dir	S
D7	08 Jul 2020	Animal Life	None
D7	08 Jul 2020	Floatables	None
D7	08 Jul 2020	Water Color	Blue
D7	08 Jul 2020	Current Direction	N
D7	08 Jul 2020	Water Temp (C)	22.5
D7	08 Jul 2020	Wave Height Low (ft)	2
D7	08 Jul 2020	High Tide (ft)	3.9
D7	08 Jul 2020	High Tide Time	1257
D7	08 Jul 2020	Low Tide (ft)	-0.5
D7	08 Jul 2020	Low Tide Time	627
D7	08 Jul 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; 14 Surfers; Water clear
D7	15 Jul 2020	Arrive Time	853
D7	15 Jul 2020	Weather	Sunny
D7	15 Jul 2020	Wind Speed (kts)	3.3
D7	15 Jul 2020	Wind Dir	W
D7	15 Jul 2020	Animal Life	None
D7	15 Jul 2020	Floatables	None
D7	15 Jul 2020	Water Color	Green
D7	15 Jul 2020	Current Direction	S
D7	15 Jul 2020	Water Temp (C)	22.6
D7	15 Jul 2020	Wave Height Low (ft)	1
D7	15 Jul 2020	High Tide (ft)	3
D7	15 Jul 2020	High Tide Time	656
D7	15 Jul 2020	Low Tide (ft)	2.1
D7	15 Jul 2020	Low Tide Time	1143
D7	15 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Person; 1 Swimmer; Water clear
D7	22 Jul 2020	Arrive Time	851
D7	22 Jul 2020	Weather	Cloudy
D7	22 Jul 2020	Wind Speed (kts)	2.1
D7	22 Jul 2020	Wind Dir	W
D7	22 Jul 2020	Animal Life	7 Pelicans; 2 Seagulls
D7	22 Jul 2020	Floatables	None
D7	22 Jul 2020	Water Color	Green
D7	22 Jul 2020	Current Direction	S

Station	Date	Parameter	Value
D7	22 Jul 2020	Water Temp (C)	18.2
D7	22 Jul 2020	Wave Height Low (ft)	2
D7	22 Jul 2020	High Tide (ft)	4.1
D7	22 Jul 2020	High Tide Time	1143
D7	22 Jul 2020	Low Tide (ft)	-1
D7	22 Jul 2020	Low Tide Time	522
D7	22 Jul 2020	Comments	Kelp; Seagrass; Algae; 9 Surfers; Water clear
D7	29 Jul 2020	Arrive Time	846
D7	29 Jul 2020	Weather	Overcast
D7	29 Jul 2020	Wind Speed (kts)	3.7
D7	29 Jul 2020	Wind Dir	NW
D7	29 Jul 2020	Animal Life	1 Godwit
D7	29 Jul 2020	Floatables	Foam
D7	29 Jul 2020	Water Color	Green
D7	29 Jul 2020	Current Direction	S
D7	29 Jul 2020	Water Temp (C)	18.5
D7	29 Jul 2020	Wave Height Low (ft)	2
D7	29 Jul 2020	High Tide (ft)	3.3
D7	29 Jul 2020	High Tide Time	624
D7	29 Jul 2020	Low Tide (ft)	2
D7	29 Jul 2020	Low Tide Time	1116
D7	29 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D8-B	01 Jul 2020	Arrive Time	856
D8-B	01 Jul 2020	Weather	Cloudy
D8-B	01 Jul 2020	Wind Speed (kts)	1.9
D8-B	01 Jul 2020	Wind Dir	W
D8-B	01 Jul 2020	Animal Life	None
D8-B	01 Jul 2020	Floatables	Foam
D8-B	01 Jul 2020	Water Color	Green
D8-B	01 Jul 2020	Current Direction	N
D8-B	01 Jul 2020	Water Temp (C)	20.9
D8-B	01 Jul 2020	Wave Height Low (ft)	2
D8-B	01 Jul 2020	High Tide (ft)	3.6
D8-B	01 Jul 2020	High Tide Time	720
D8-B	01 Jul 2020	Low Tide (ft)	1.5
D8-B	01 Jul 2020	Low Tide Time	1233
D8-B	01 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Person; 3 Surfers; Water turbid
D8-B	08 Jul 2020	Arrive Time	952
D8-B	08 Jul 2020	Weather	Partly Cloudy
D8-B	08 Jul 2020	Wind Speed (kts)	3.1
D8-B	08 Jul 2020	Wind Dir	W
D8-B	08 Jul 2020	Animal Life	None
D8-B	08 Jul 2020	Floatables	None
D8-B	08 Jul 2020	Water Color	Green
D8-B	08 Jul 2020	Current Direction	N
D8-B	08 Jul 2020	Water Temp (C)	23.2
D8-B	08 Jul 2020	Wave Height Low (ft)	2
D8-B	08 Jul 2020	High Tide (ft)	3.9
D8-B	08 Jul 2020	High Tide Time	1257
D8-B	08 Jul 2020	Low Tide (ft)	-0.5
D8-B	08 Jul 2020	Low Tide Time	627
D8-B	08 Jul 2020	Comments	Algae; 2 Persons; 13 Surfers; Water clear

Station	Date	Parameter	Value
D8-B	15 Jul 2020	Arrive Time	911
D8-B	15 Jul 2020	Weather	Sunny
D8-B	15 Jul 2020	Wind Speed (kts)	4.8
D8-B	15 Jul 2020	Wind Dir	W
D8-B	15 Jul 2020	Animal Life	None
D8-B	15 Jul 2020	Floatables	Foam
D8-B	15 Jul 2020	Water Color	Green
D8-B	15 Jul 2020	Current Direction	N
D8-B	15 Jul 2020	Water Temp (C)	22.7
D8-B	15 Jul 2020	Wave Height Low (ft)	1
D8-B	15 Jul 2020	High Tide (ft)	3
D8-B	15 Jul 2020	High Tide Time	656
D8-B	15 Jul 2020	Low Tide (ft)	2.1
D8-B	15 Jul 2020	Low Tide Time	1143
D8-B	15 Jul 2020	Comments	Kelp; Seagrass; Algae; 3 Persons; Water clear
D8-B	22 Jul 2020	Arrive Time	903
D8-B	22 Jul 2020	Weather	Cloudy
D8-B	22 Jul 2020	Wind Speed (kts)	2.5
D8-B	22 Jul 2020	Wind Dir	W
D8-B	22 Jul 2020	Animal Life	None
D8-B	22 Jul 2020	Floatables	Foam
D8-B	22 Jul 2020	Water Color	Green
D8-B	22 Jul 2020	Current Direction	S
D8-B	22 Jul 2020	Water Temp (C)	18
D8-B	22 Jul 2020	Wave Height Low (ft)	2
D8-B	22 Jul 2020	High Tide (ft)	4.1
D8-B	22 Jul 2020	High Tide Time	1143
D8-B	22 Jul 2020	Low Tide (ft)	-1
D8-B	22 Jul 2020	Low Tide Time	522
D8-B	22 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D8-B	29 Jul 2020	Arrive Time	910
D8-B	29 Jul 2020	Weather	Overcast
D8-B	29 Jul 2020	Wind Speed (kts)	0
D8-B	29 Jul 2020	Wind Dir	
D8-B	29 Jul 2020	Animal Life	None
D8-B	29 Jul 2020	Floatables	None
D8-B	29 Jul 2020	Water Color	Green
D8-B	29 Jul 2020	Current Direction	S
D8-B	29 Jul 2020	Water Temp (C)	18
D8-B	29 Jul 2020	Wave Height Low (ft)	2
D8-B	29 Jul 2020	High Tide (ft)	3.3
D8-B	29 Jul 2020	High Tide Time	624
D8-B	29 Jul 2020	Low Tide (ft)	2
D8-B	29 Jul 2020	Low Tide Time	1116
D8-B	29 Jul 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; Water clear
D9	01 Jul 2020	Arrive Time	907
D9	01 Jul 2020	Weather	Cloudy
D9	01 Jul 2020	Wind Speed (kts)	1.9
D9	01 Jul 2020	Wind Dir	W
D9	01 Jul 2020	Animal Life	None
D9	01 Jul 2020	Floatables	Foam

Station	Date	Parameter	Value
D9	01 Jul 2020	Water Color	Green
D9	01 Jul 2020	Current Direction	N
D9	01 Jul 2020	Water Temp (C)	21.3
D9	01 Jul 2020	Wave Height Low (ft)	3
D9	01 Jul 2020	High Tide (ft)	3.6
D9	01 Jul 2020	High Tide Time	720
D9	01 Jul 2020	Low Tide (ft)	1.5
D9	01 Jul 2020	Low Tide Time	1233
D9	01 Jul 2020	Comments	Kelp; Seagrass; Algae; 3 Persons; 7 Surfers; Water turbid
D9	08 Jul 2020	Arrive Time	1008
D9	08 Jul 2020	Weather	Sunny
D9	08 Jul 2020	Wind Speed (kts)	3.1
D9	08 Jul 2020	Wind Dir	S
D9	08 Jul 2020	Animal Life	1 Seagull
D9	08 Jul 2020	Floatables	None
D9	08 Jul 2020	Water Color	Green
D9	08 Jul 2020	Current Direction	N
D9	08 Jul 2020	Water Temp (C)	23
D9	08 Jul 2020	Wave Height Low (ft)	2
D9	08 Jul 2020	High Tide (ft)	3.9
D9	08 Jul 2020	High Tide Time	1257
D9	08 Jul 2020	Low Tide (ft)	-0.5
D9	08 Jul 2020	Low Tide Time	627
D9	08 Jul 2020	Comments	Seagrass; Algae; 4 Persons; Water clear
D9	15 Jul 2020	Arrive Time	924
D9	15 Jul 2020	Weather	Sunny
D9	15 Jul 2020	Wind Speed (kts)	2.9
D9	15 Jul 2020	Wind Dir	W
D9	15 Jul 2020	Animal Life	None
D9	15 Jul 2020	Floatables	Foam
D9	15 Jul 2020	Water Color	Green
D9	15 Jul 2020	Current Direction	N
D9	15 Jul 2020	Water Temp (C)	23.1
D9	15 Jul 2020	Wave Height Low (ft)	2
D9	15 Jul 2020	High Tide (ft)	3
D9	15 Jul 2020	High Tide Time	656
D9	15 Jul 2020	Low Tide (ft)	2.1
D9	15 Jul 2020	Low Tide Time	1143
D9	15 Jul 2020	Comments	Kelp; Seagrass; Algae; 3 Persons; Water clear
D9	22 Jul 2020	Arrive Time	915
D9	22 Jul 2020	Weather	Cloudy
D9	22 Jul 2020	Wind Speed (kts)	0.9
D9	22 Jul 2020	Wind Dir	E
D9	22 Jul 2020	Animal Life	None
D9	22 Jul 2020	Floatables	Foam
D9	22 Jul 2020	Water Color	Green
D9	22 Jul 2020	Current Direction	N
D9	22 Jul 2020	Water Temp (C)	18.6
D9	22 Jul 2020	Wave Height Low (ft)	2
D9	22 Jul 2020	High Tide (ft)	4.1
D9	22 Jul 2020	High Tide Time	1143
D9	22 Jul 2020	Low Tide (ft)	-1

Station	Date	Parameter	Value
D9	22 Jul 2020	Low Tide Time	522
D9	22 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Person; 1 Fisherman; Water clear
D9	29 Jul 2020	Arrive Time	925
D9	29 Jul 2020	Weather	Overcast
D9	29 Jul 2020	Wind Speed (kts)	2.1
D9	29 Jul 2020	Wind Dir	W
D9	29 Jul 2020	Animal Life	None
D9	29 Jul 2020	Floatables	Foam
D9	29 Jul 2020	Water Color	Green
D9	29 Jul 2020	Current Direction	N
D9	29 Jul 2020	Water Temp (C)	17.6
D9	29 Jul 2020	Wave Height Low (ft)	2
D9	29 Jul 2020	High Tide (ft)	3.3
D9	29 Jul 2020	High Tide Time	624
D9	29 Jul 2020	Low Tide (ft)	2
D9	29 Jul 2020	Low Tide Time	1116
D9	29 Jul 2020	Comments	Kelp; Seagrass; Algae; Water clear
D10	01 Jul 2020	Arrive Time	923
D10	01 Jul 2020	Weather	Cloudy
D10	01 Jul 2020	Wind Speed (kts)	3.1
D10	01 Jul 2020	Wind Dir	W
D10	01 Jul 2020	Animal Life	1 Dog; 2 Pigeons
D10	01 Jul 2020	Floatables	Foam
D10	01 Jul 2020	Water Color	Green
D10	01 Jul 2020	Current Direction	N
D10	01 Jul 2020	Water Temp (C)	21.1
D10	01 Jul 2020	Wave Height Low (ft)	3
D10	01 Jul 2020	High Tide (ft)	3.6
D10	01 Jul 2020	High Tide Time	720
D10	01 Jul 2020	Low Tide (ft)	1.5
D10	01 Jul 2020	Low Tide Time	1233
D10	01 Jul 2020	Comments	Kelp; Seagrass; 34 Persons; 48 Surfers; 6 Swimmers; Water clear
D10	08 Jul 2020	Arrive Time	1025
D10	08 Jul 2020	Weather	Sunny
D10	08 Jul 2020	Wind Speed (kts)	4.4
D10	08 Jul 2020	Wind Dir	S
D10	08 Jul 2020	Animal Life	None
D10	08 Jul 2020	Floatables	None
D10	08 Jul 2020	Water Color	Green
D10	08 Jul 2020	Current Direction	N
D10	08 Jul 2020	Water Temp (C)	22.9
D10	08 Jul 2020	Wave Height Low (ft)	3
D10	08 Jul 2020	High Tide (ft)	3.9
D10	08 Jul 2020	High Tide Time	1257
D10	08 Jul 2020	Low Tide (ft)	-0.5
D10	08 Jul 2020	Low Tide Time	627
D10	08 Jul 2020	Comments	Kelp; Seagrass; 46 Persons; 46 Surfers; Water clear
D10	15 Jul 2020	Arrive Time	937
D10	15 Jul 2020	Weather	Sunny
D10	15 Jul 2020	Wind Speed (kts)	4.6
D10	15 Jul 2020	Wind Dir	W

Station	Date	Parameter	Value
D10	15 Jul 2020	Animal Life	None
D10	15 Jul 2020	Floatables	None
D10	15 Jul 2020	Water Color	Green
D10	15 Jul 2020	Current Direction	N
D10	15 Jul 2020	Water Temp (C)	22.7
D10	15 Jul 2020	Wave Height Low (ft)	2
D10	15 Jul 2020	High Tide (ft)	3
D10	15 Jul 2020	High Tide Time	656
D10	15 Jul 2020	Low Tide (ft)	2.1
D10	15 Jul 2020	Low Tide Time	1143
D10	15 Jul 2020	Comments	Kelp; Seagrass; 29 Persons; 29 Surfers; 11 Swimmers; Water clear
D10	22 Jul 2020	Arrive Time	933
D10	22 Jul 2020	Weather	Cloudy
D10	22 Jul 2020	Wind Speed (kts)	2.7
D10	22 Jul 2020	Wind Dir	W
D10	22 Jul 2020	Animal Life	3 Pigeons
D10	22 Jul 2020	Floatables	Foam
D10	22 Jul 2020	Water Color	Green
D10	22 Jul 2020	Current Direction	N
D10	22 Jul 2020	Water Temp (C)	18.5
D10	22 Jul 2020	Wave Height Low (ft)	2
D10	22 Jul 2020	High Tide (ft)	4.1
D10	22 Jul 2020	High Tide Time	1143
D10	22 Jul 2020	Low Tide (ft)	-1
D10	22 Jul 2020	Low Tide Time	522
D10	22 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Jogger; 10 Persons; 29 Surfers; 1 Swimmer; Water clear
D10	29 Jul 2020	Arrive Time	943
D10	29 Jul 2020	Weather	Overcast
D10	29 Jul 2020	Wind Speed (kts)	1.7
D10	29 Jul 2020	Wind Dir	W
D10	29 Jul 2020	Animal Life	1 Seagull
D10	29 Jul 2020	Floatables	None
D10	29 Jul 2020	Water Color	Green
D10	29 Jul 2020	Current Direction	N
D10	29 Jul 2020	Water Temp (C)	18.2
D10	29 Jul 2020	Wave Height Low (ft)	2
D10	29 Jul 2020	High Tide (ft)	3.3
D10	29 Jul 2020	High Tide Time	624
D10	29 Jul 2020	Low Tide (ft)	2
D10	29 Jul 2020	Low Tide Time	1116
D10	29 Jul 2020	Comments	Kelp; Seagrass; 1 Jogger; 19 Persons; 28 Surfers; 3 Swimmers; Water clear
D11	01 Jul 2020	Arrive Time	939
D11	01 Jul 2020	Weather	Cloudy
D11	01 Jul 2020	Wind Speed (kts)	4.4
D11	01 Jul 2020	Wind Dir	W
D11	01 Jul 2020	Animal Life	1 Dog
D11	01 Jul 2020	Floatables	Foam
D11	01 Jul 2020	Water Color	Green
D11	01 Jul 2020	Current Direction	N
D11	01 Jul 2020	Water Temp (C)	21

Station	Date	Parameter	Value
D11	01 Jul 2020	Wave Height Low (ft)	3
D11	01 Jul 2020	High Tide (ft)	3.6
D11	01 Jul 2020	High Tide Time	720
D11	01 Jul 2020	Low Tide (ft)	1.5
D11	01 Jul 2020	Low Tide Time	1233
D11	01 Jul 2020	Comments	Kelp; Seagrass; 15 Persons; 45 Surfers; Water clear
D11	08 Jul 2020	Arrive Time	1055
D11	08 Jul 2020	Weather	Sunny
D11	08 Jul 2020	Wind Speed (kts)	5.6
D11	08 Jul 2020	Wind Dir	SW
D11	08 Jul 2020	Animal Life	2 Cormorants; 2 Terns
D11	08 Jul 2020	Floatables	None
D11	08 Jul 2020	Water Color	Green
D11	08 Jul 2020	Current Direction	N
D11	08 Jul 2020	Water Temp (C)	24.4
D11	08 Jul 2020	Wave Height Low (ft)	3
D11	08 Jul 2020	High Tide (ft)	3.9
D11	08 Jul 2020	High Tide Time	1257
D11	08 Jul 2020	Low Tide (ft)	-0.5
D11	08 Jul 2020	Low Tide Time	627
D11	08 Jul 2020	Comments	Kelp; Seagrass; 51 Persons; 33 Surfers; Water clear
D11	15 Jul 2020	Arrive Time	951
D11	15 Jul 2020	Weather	Sunny
D11	15 Jul 2020	Wind Speed (kts)	5.2
D11	15 Jul 2020	Wind Dir	W
D11	15 Jul 2020	Animal Life	None
D11	15 Jul 2020	Floatables	None
D11	15 Jul 2020	Water Color	Green
D11	15 Jul 2020	Current Direction	N
D11	15 Jul 2020	Water Temp (C)	25
D11	15 Jul 2020	Wave Height Low (ft)	2
D11	15 Jul 2020	High Tide (ft)	3
D11	15 Jul 2020	High Tide Time	656
D11	15 Jul 2020	Low Tide (ft)	2.1
D11	15 Jul 2020	Low Tide Time	1143
D11	15 Jul 2020	Comments	Kelp; Seagrass; 2 Joggers; 39 Persons; 35 Surfers; 4 Swimmers; Water clear
D11	22 Jul 2020	Arrive Time	945
D11	22 Jul 2020	Weather	Cloudy
D11	22 Jul 2020	Wind Speed (kts)	3.4
D11	22 Jul 2020	Wind Dir	W
D11	22 Jul 2020	Animal Life	None
D11	22 Jul 2020	Floatables	Foam
D11	22 Jul 2020	Water Color	Green
D11	22 Jul 2020	Current Direction	N
D11	22 Jul 2020	Water Temp (C)	18.4
D11	22 Jul 2020	Wave Height Low (ft)	2
D11	22 Jul 2020	High Tide (ft)	4.1
D11	22 Jul 2020	High Tide Time	1143
D11	22 Jul 2020	Low Tide (ft)	-1
D11	22 Jul 2020	Low Tide Time	522
D11	22 Jul 2020	Comments	Kelp; Seagrass; 10 Persons; 21 Surfers; 2 Fishermen; Water clear

Station	Date	Parameter	Value
D11	29 Jul 2020	Arrive Time	1014
D11	29 Jul 2020	Weather	Overcast
D11	29 Jul 2020	Wind Speed (kts)	3.3
D11	29 Jul 2020	Wind Dir	W
D11	29 Jul 2020	Animal Life	6 Dogs
D11	29 Jul 2020	Floatables	Foam
D11	29 Jul 2020	Water Color	Green
D11	29 Jul 2020	Current Direction	N
D11	29 Jul 2020	Water Temp (C)	18.6
D11	29 Jul 2020	Wave Height Low (ft)	2
D11	29 Jul 2020	High Tide (ft)	3.3
D11	29 Jul 2020	High Tide Time	624
D11	29 Jul 2020	Low Tide (ft)	2
D11	29 Jul 2020	Low Tide Time	1116
D11	29 Jul 2020	Comments	Kelp; Seagrass; 1 Jogger; 16 Persons; 45 Surfers; 1 Swimmer; Water clear
D12	01 Jul 2020	Arrive Time	1024
D12	01 Jul 2020	Weather	Cloudy
D12	01 Jul 2020	Wind Speed (kts)	3.4
D12	01 Jul 2020	Wind Dir	W
D12	01 Jul 2020	Animal Life	10 Seagulls
D12	01 Jul 2020	Floatables	Foam
D12	01 Jul 2020	Water Color	Green
D12	01 Jul 2020	Current Direction	N
D12	01 Jul 2020	Water Temp (C)	21.6
D12	01 Jul 2020	Wave Height Low (ft)	2
D12	01 Jul 2020	High Tide (ft)	3.6
D12	01 Jul 2020	High Tide Time	720
D12	01 Jul 2020	Low Tide (ft)	1.5
D12	01 Jul 2020	Low Tide Time	1233
D12	01 Jul 2020	Comments	Kelp; Seagrass; 1 Jogger; 32 Persons; 4 Swimmers; 1 Fisherman; Water clear
D12	08 Jul 2020	Arrive Time	1120
D12	08 Jul 2020	Weather	Sunny
D12	08 Jul 2020	Wind Speed (kts)	6.6
D12	08 Jul 2020	Wind Dir	W
D12	08 Jul 2020	Animal Life	2 Seagulls
D12	08 Jul 2020	Floatables	None
D12	08 Jul 2020	Water Color	Green
D12	08 Jul 2020	Current Direction	N
D12	08 Jul 2020	Water Temp (C)	25.1
D12	08 Jul 2020	Wave Height Low (ft)	2
D12	08 Jul 2020	High Tide (ft)	3.9
D12	08 Jul 2020	High Tide Time	1257
D12	08 Jul 2020	Low Tide (ft)	-0.5
D12	08 Jul 2020	Low Tide Time	627
D12	08 Jul 2020	Comments	Kelp; Seagrass; 85 Persons; 1 Surfer; Water clear
D12	15 Jul 2020	Arrive Time	1100
D12	15 Jul 2020	Weather	Sunny
D12	15 Jul 2020	Wind Speed (kts)	4
D12	15 Jul 2020	Wind Dir	W

Station	Date	Parameter	Value
D12	15 Jul 2020	Animal Life	None
D12	15 Jul 2020	Floatables	Foam
D12	15 Jul 2020	Water Color	Green
D12	15 Jul 2020	Current Direction	N
D12	15 Jul 2020	Water Temp (C)	24.2
D12	15 Jul 2020	Wave Height Low (ft)	2
D12	15 Jul 2020	High Tide (ft)	3
D12	15 Jul 2020	High Tide Time	656
D12	15 Jul 2020	Low Tide (ft)	2.1
D12	15 Jul 2020	Low Tide Time	1143
D12	15 Jul 2020	Comments	Kelp; Seagrass; Algae; 1 Jogger; 59 Persons; 1 Surfer; 22 Swimmers; 4 Fishermen; Water clear
D12	22 Jul 2020	Arrive Time	1015
D12	22 Jul 2020	Weather	Cloudy
D12	22 Jul 2020	Wind Speed (kts)	5.4
D12	22 Jul 2020	Wind Dir	W
D12	22 Jul 2020	Animal Life	7 Godwits; 1 Egret
D12	22 Jul 2020	Floatables	None
D12	22 Jul 2020	Water Color	Green
D12	22 Jul 2020	Current Direction	N
D12	22 Jul 2020	Water Temp (C)	20.6
D12	22 Jul 2020	Wave Height Low (ft)	2
D12	22 Jul 2020	High Tide (ft)	4.1
D12	22 Jul 2020	High Tide Time	1143
D12	22 Jul 2020	Low Tide (ft)	-1
D12	22 Jul 2020	Low Tide Time	522
D12	22 Jul 2020	Comments	Kelp; Seagrass; 21 Persons; 5 Fishermen; Water clear
D12	29 Jul 2020	Arrive Time	1103
D12	29 Jul 2020	Weather	Overcast
D12	29 Jul 2020	Wind Speed (kts)	1.9
D12	29 Jul 2020	Wind Dir	W
D12	29 Jul 2020	Animal Life	1 Cormorant; 1 Seagull
D12	29 Jul 2020	Floatables	None
D12	29 Jul 2020	Water Color	Green
D12	29 Jul 2020	Current Direction	S
D12	29 Jul 2020	Water Temp (C)	19.7
D12	29 Jul 2020	Wave Height Low (ft)	1
D12	29 Jul 2020	High Tide (ft)	3.3
D12	29 Jul 2020	High Tide Time	624
D12	29 Jul 2020	Low Tide (ft)	2
D12	29 Jul 2020	Low Tide Time	1116
D12	29 Jul 2020	Comments	Kelp; Seagrass; 3 Joggers; 57 Persons; 1 Boat; 13 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 Jul 2020	7	8	6	5	3	13	3	6
02 Jul 2020	5*	6*	5*	4*	2*	11*	2*	7*
03 Jul 2020	5*	6*	5*	4*	2*	11*	2*	7*
04 Jul 2020	5*	6*	5*	4*	2*	11*	2*	7*
05 Jul 2020	5*	6*	5*	4*	2*	11*	2*	7*
06 Jul 2020	4	6	5	3	2	8	4	5
07 Jul 2020	4	6	5	3	2	8	4	5
08 Jul 2020	4	6	5	3	2	8	4	5
09 Jul 2020	2*	3*	2*	4*	2*	10*	4*	6*
10 Jul 2020	2*	3*	2*	4*	2*	10*	4*	6*
11 Jul 2020	2*	3*	2*	4*	2*	10*	4*	6*
12 Jul 2020	2*	3*	2*	4*	2*	10*	4*	6*
13 Jul 2020	2	3	2	4	2	7	3	5
14 Jul 2020	2	3	2	4	2	7	3	5
15 Jul 2020	2	3	2	4	2	7	3	5
16 Jul 2020	2*	3*	2*	5*	2*	7*	4*	3*
17 Jul 2020	2*	3*	2*	5*	2*	7*	4*	3*
18 Jul 2020	2*	3*	2*	5*	2*	7*	4*	3*
19 Jul 2020	2*	3*	2*	5*	2*	7*	4*	3*
20 Jul 2020	2*	3*	2*	5*	2*	7*	4*	3*
21 Jul 2020	2	3	2	6	3	8	6	5
22 Jul 2020	2	3	2	6	3	8	6	5
23 Jul 2020	2*	2*	2*	7*	3*	5*	9*	3*
24 Jul 2020	2*	2*	2*	7*	3*	5*	9*	3*
25 Jul 2020	2*	2*	2*	7*	3*	5*	9*	3*
26 Jul 2020	2*	2*	2*	7*	3*	5*	9*	3*
27 Jul 2020	2*	2*	2*	7*	3*	5*	9*	3*
28 Jul 2020	2	3	2	6	3	4	7	4
29 Jul 2020	2	3	2	6	3	4	7	4
30 Jul 2020	2*	3*	2*	4*	3*	4*	10*	5*
31 Jul 2020	2*	3*	2*	4*	3*	4*	10*	5*

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

\* Geometric mean calculated using n<5

**Table 3.3**

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

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

\* Geometric mean calculated using n<5

**Table 3.4**

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
06 Jul 2020	IC							
13 Jul 2020	IC							
21 Jul 2020	IC							
28 Jul 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
06 Jul 2020	IC							
13 Jul 2020	IC							
21 Jul 2020	IC							
28 Jul 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
06 Jul 2020	IC							
13 Jul 2020	IC							
21 Jul 2020	IC							
28 Jul 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
06 Jul 2020	IC							
13 Jul 2020	IC							
21 Jul 2020	IC							
28 Jul 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	06 Jul 2020	810	1	<2	<2	2e	1.00	16.8	75.85	8.3	33.66	8.2
A1	06 Jul 2020	810	12	<2	<2	<2	1.00	12.3	87.30	5.3	33.76	7.9
A1	06 Jul 2020	810	18	2e	<2	<2	1.00	11.3	89.42	4.7	33.73	7.9
A1	13 Jul 2020	758	1	<2	<2	<2	1.00	19.4	80.57	8.1	33.69	8.2
A1	13 Jul 2020	758	12	<2	<2	<2	1.00	13.5	79.65	6.5	33.69	8.0
A1	13 Jul 2020	758	18	<2	<2	<2	1.00	12.0	87.16	5.3	33.74	7.9
A1	21 Jul 2020	756	1	<2	<2	<2	1.00	14.8	79.92	7.7	33.62	8.1
A1	21 Jul 2020	756	12	<2	<2	<2	1.00	11.5	89.92	5.4	33.67	7.8
A1	21 Jul 2020	756	18	<2	<2	<2	1.00	11.3	90.23	4.8	33.68	7.8
A1	28 Jul 2020	750	1	<2	<2	<2	1.00	16.5	79.21	7.0	33.70	8.0
A1	28 Jul 2020	750	12	<2	<2	<2	1.00	12.4	77.39	7.2	33.79	7.9
A1	28 Jul 2020	750	18	<2	<2	<2	1.00	11.4	90.62	5.2	33.73	7.8
A6	06 Jul 2020	843	1	<2	<2	<2	1.00	18.9	74.86	7.9	33.67	8.2
A6	06 Jul 2020	843	12	<2	<2	<2	1.00	13.1	80.07	5.8	33.63	8.0
A6	06 Jul 2020	843	18	10e	2e	<2	0.20	12.1	87.00	5.2	33.69	7.9
A6	13 Jul 2020	829	1	<2	<2	<2	1.00	21.9	80.67	8.7	33.71	8.3
A6	13 Jul 2020	829	12	<2	<2	<2	1.00	14.1	78.90	6.5	33.72	8.1
A6	13 Jul 2020	829	18	2e	<2	<2	1.00	13.5	85.78	6.0	33.74	8.1
A6	21 Jul 2020	825	1	<2	<2	<2	1.00	15.0	75.03	7.4	33.66	8.1
A6	21 Jul 2020	825	12	<2	<2	<2	1.00	12.5	78.89	5.7	33.72	7.9
A6	21 Jul 2020	825	18	2e	<2	<2	1.00	12.0	85.28	4.9	33.72	7.9
A6	28 Jul 2020	824	1	<2	<2	<2	1.00	16.9	76.93	8.7	33.61	8.1
A6	28 Jul 2020	824	12	4e	<2	<2	0.50	12.1	85.75	6.0	33.62	7.9
A6	28 Jul 2020	824	18	8e	<2	<2	0.25	11.6	89.13	5.0	33.66	7.8
A7	06 Jul 2020	827	1	<2	<2	<2	1.00	18.8	77.50	8.4	33.67	8.2
A7	06 Jul 2020	827	12	2e	<2	<2	1.00	12.4	86.09	5.6	33.73	8.0
A7	06 Jul 2020	827	18	4e	<2	<2	0.50	11.9	88.88	5.2	33.70	7.9
A7	13 Jul 2020	814	1	<2	<2	<2	1.00	21.6	83.01	8.6	33.71	8.3
A7	13 Jul 2020	814	12	<2	<2	<2	1.00	15.0	75.30	7.1	33.72	8.1
A7	13 Jul 2020	814	18	<2	<2	<2	1.00	12.5	86.92	5.5	33.74	8.0
A7	21 Jul 2020	810	1	2e	<2	<2	1.00	14.9	79.35	7.4	33.64	8.1
A7	21 Jul 2020	810	12	<2	<2	<2	1.00	11.9	86.03	5.4	33.70	7.9
A7	21 Jul 2020	810	18	<2	<2	<2	1.00	11.8	87.45	5.0	33.68	7.9
A7	28 Jul 2020	813	1	<2	<2	<2	1.00	17.5	71.12	8.3	33.63	8.1
A7	28 Jul 2020	813	12	<2	<2	<2	1.00	11.6	89.60	5.2	33.68	7.8
A7	28 Jul 2020	813	18	<2	<2	<2	1.00	11.5	90.65	5.0	33.66	7.8

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C4	06 Jul 2020	1006	1	<2	<2	<2	1.00	18.7	73.99	8.0	33.67	8.2
C4	06 Jul 2020	1006	3	<2	<2	<2	1.00	17.7	76.96	7.7	33.81	8.2
C4	06 Jul 2020	1006	9	<2	<2	<2	1.00	13.9	83.23	5.0	33.78	7.9
C4	13 Jul 2020	956	1	<2	<2	<2	1.00	22.2	81.60	8.7	33.72	8.3
C4	13 Jul 2020	956	3	<20	<2	<2	0.10	21.9	81.56	8.7	33.74	8.3
C4	13 Jul 2020	956	9	<2	<2	<2	1.00	13.7	85.23	5.9	33.77	8.1
C4	21 Jul 2020	943	1	2e	<2	<2	1.00	16.0	70.35	7.6	33.62	8.1
C4	21 Jul 2020	943	3	<20	2e	2e	0.10	15.4	68.88	7.2	33.68	8.1
C4	21 Jul 2020	943	9	<2	<2	<2	1.00	12.3	79.24	3.6	33.70	7.8
C4	28 Jul 2020	946	1	2e	<2	<2	1.00	18.0	81.93	8.0	33.61	8.2
C4	28 Jul 2020	946	3	<2	<2	<2	1.00	17.4	79.29	8.0	33.80	8.1
C4	28 Jul 2020	946	9	<2	<2	<2	1.00	13.0	86.61	4.3	33.78	7.8
C5	06 Jul 2020	954	1	<2	<2	<2	1.00	18.6	78.39	8.1	33.67	8.2
C5	06 Jul 2020	954	3	<2	<2	<2	1.00	17.4	78.33	7.9	33.82	8.2
C5	06 Jul 2020	954	9	4e	<2	<2	0.50	13.1	86.46	5.7	33.74	8.0
C5	13 Jul 2020	941	1	<2	<2	<2	1.00	22.1	81.20	8.7	33.72	8.3
C5	13 Jul 2020	941	3	<2	<2	<2	1.00	22.0	81.22	8.7	33.73	8.3
C5	13 Jul 2020	941	9	<2	2e	<2	1.00	15.1	81.15	7.3	33.72	8.2
C5	21 Jul 2020	929	1	<2	<2	<2	1.00	16.0	79.89	7.8	33.66	8.1
C5	21 Jul 2020	929	3	<2	<2	<2	1.00	14.2	73.86	7.5	33.81	8.1
C5	21 Jul 2020	929	9	<20	<2	<2	0.10	12.5	79.74	5.1	33.71	7.9
C5	28 Jul 2020	933	1	<2	<2	<2	1.00	17.8	81.61	8.2	33.43	8.2
C5	28 Jul 2020	933	3	<2	<2	<2	1.00	17.0	80.78	8.3	33.94	8.1
C5	28 Jul 2020	933	9	<2	<2	<2	1.00	12.4	86.18	5.9	33.67	7.9
C6	06 Jul 2020	941	1	2e	<2	<2	1.00	19.3	75.73	8.0	33.68	8.2
C6	06 Jul 2020	941	3	<2	<2	<2	1.00	18.3	74.59	7.8	33.78	8.2
C6	06 Jul 2020	941	9	<2	<2	<2	1.00	13.6	82.28	5.5	33.72	8.0
C6	13 Jul 2020	928	1	<2	<2	<2	1.00	22.2	79.60	8.7	33.72	8.3
C6	13 Jul 2020	928	3	<2	<2	<2	1.00	22.1	78.80	8.7	33.73	8.3
C6	13 Jul 2020	928	9	<2	<2	<2	1.00	14.3	81.07	7.0	33.85	8.1
C6	21 Jul 2020	918	1	<20	<2	<2	0.10	15.5	68.94	7.1	33.67	8.1
C6	21 Jul 2020	918	3	<20	<2	2e	0.10	14.5	69.06	6.9	33.70	8.1
C6	21 Jul 2020	918	9	<20	<2	<2	0.10	12.4	76.99	5.0	33.74	7.9
C6	28 Jul 2020	919	1	<2	<2	<2	1.00	17.3	77.69	7.8	33.64	8.1
C6	28 Jul 2020	919	3	2e	<2	<2	1.00	15.7	78.06	7.8	33.90	8.1
C6	28 Jul 2020	919	9	<2	2e	<2	1.00	12.5	86.73	5.7	33.65	7.9
C7	06 Jul 2020	902	1	<2	<2	<2	1.00	19.9	77.47	8.2	33.60	8.2
C7	06 Jul 2020	902	12	18e	2e	<2	0.11	12.9	81.52	5.6	33.73	8.0
C7	06 Jul 2020	902	18	42	14e	<2	0.33	12.2	87.77	4.8	33.72	7.9
C7	13 Jul 2020	849	1	<2	<2	<2	1.00	22.3	81.91	8.6	33.70	8.3
C7	13 Jul 2020	849	12	<2	<2	<2	1.00	15.4	77.48	8.0	33.79	8.2

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
C7	13 Jul 2020	849	18	<2	<2	<2	1.00	12.8	88.03	5.4	33.72	8.0
C7	21 Jul 2020	845	1	<200	<2	<2	0.01	15.7	75.10	7.5	33.66	8.1
C7	21 Jul 2020	845	12	2e	<2	<2	1.00	12.3	80.91	5.0	33.71	7.9
C7	21 Jul 2020	845	18	<2	<2	<2	1.00	11.6	87.14	4.3	33.75	7.8
C7	28 Jul 2020	840	1	<2	<2	<2	1.00	16.8	78.26	8.3	33.64	8.1
C7	28 Jul 2020	840	12	<2	<2	<2	1.00	11.9	86.45	5.2	33.64	7.8
C7	28 Jul 2020	840	18	8e	2e	<2	0.25	11.6	89.60	4.8	33.68	7.8
C8	06 Jul 2020	914	1	<2	<2	<2	1.00	19.0	75.59	8.6	33.67	8.3
C8	06 Jul 2020	914	12	2e	<2	<2	1.00	13.6	79.90	6.0	33.72	8.0
C8	06 Jul 2020	914	18	2e	2e	<2	1.00	12.4	86.89	4.9	33.72	7.9
C8	13 Jul 2020	902	1	<2	<2	<2	1.00	22.0	80.00	8.6	33.70	8.3
C8	13 Jul 2020	902	12	<2	<2	<2	1.00	14.5	79.12	7.0	33.69	8.1
C8	13 Jul 2020	902	18	4e	<2	<2	0.50	12.4	85.97	4.8	33.71	7.9
C8	21 Jul 2020	856	1	<20	<2	<2	0.10	16.1	79.11	7.4	33.62	8.1
C8	21 Jul 2020	856	12	2e	<2	<2	1.00	11.9	81.31	4.9	33.72	7.9
C8	21 Jul 2020	856	18	16e	10e	<2	0.62	11.5	88.46	4.2	33.73	7.8
C8	28 Jul 2020	855	1	<2	<2	<2	1.00	16.1	72.92	8.3	33.66	8.1
C8	28 Jul 2020	855	12	4e	<2	<2	0.50	11.7	88.97	5.0	33.66	7.8
C8	28 Jul 2020	855	18	18e	6e	2e	0.33	11.7	89.55	4.9	33.66	7.8

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	06 Jul 2020	Depth (m)	17
A1	06 Jul 2020	Arrive Time	810
A1	06 Jul 2020	Depart Time	820
A1	06 Jul 2020	Air Temp (C)	17
A1	06 Jul 2020	Weather	Fog
A1	06 Jul 2020	Visibility (mi)	1
A1	06 Jul 2020	Wind Speed (kts)	2
A1	06 Jul 2020	Wind Dir	S
A1	06 Jul 2020	Water Color	Bluish-Green
A1	06 Jul 2020	Wave Ht Low (ft)	4
A1	06 Jul 2020	Wave Period (sec)	13
A1	06 Jul 2020	Sea State	Wind ripples
A1	06 Jul 2020	High Tide (ft)	3.91
A1	06 Jul 2020	High Tide Time	1132
A1	06 Jul 2020	Low Tide (ft)	-1.1
A1	06 Jul 2020	Low Tide Time	508
A1	06 Jul 2020	Comments	Kelp
A1	13 Jul 2020	Depth (m)	18
A1	13 Jul 2020	Arrive Time	758
A1	13 Jul 2020	Depart Time	804
A1	13 Jul 2020	Air Temp (C)	20
A1	13 Jul 2020	Weather	Partly Cloudy
A1	13 Jul 2020	Visibility (mi)	3
A1	13 Jul 2020	Wind Speed (kts)	5
A1	13 Jul 2020	Wind Dir	SE
A1	13 Jul 2020	Water Color	Green
A1	13 Jul 2020	Wave Ht Low (ft)	3
A1	13 Jul 2020	Wave Period (sec)	9
A1	13 Jul 2020	Sea State	Calm
A1	13 Jul 2020	High Tide (ft)	3.08
A1	13 Jul 2020	High Tide Time	358
A1	13 Jul 2020	Low Tide (ft)	1.66
A1	13 Jul 2020	Low Tide Time	959
A1	13 Jul 2020	Comments	Kelp; Boats
A1	21 Jul 2020	Depth (m)	18
A1	21 Jul 2020	Arrive Time	756
A1	21 Jul 2020	Depart Time	801
A1	21 Jul 2020	Air Temp (C)	18
A1	21 Jul 2020	Weather	Continuous layer of clouds
A1	21 Jul 2020	Visibility (mi)	5
A1	21 Jul 2020	Wind Speed (kts)	2
A1	21 Jul 2020	Wind Dir	SW
A1	21 Jul 2020	Water Color	Green
A1	21 Jul 2020	Wave Ht Low (ft)	3
A1	21 Jul 2020	Wave Period (sec)	11
A1	21 Jul 2020	Sea State	Calm
A1	21 Jul 2020	High Tide (ft)	4.02
A1	21 Jul 2020	High Tide Time	1104
A1	21 Jul 2020	Low Tide (ft)	-1.04

Station	Date	Parameter	Value
A1	21 Jul 2020	Low Tide Time	444
A1	21 Jul 2020	Comments	none
A1	28 Jul 2020	Depth (m)	18
A1	28 Jul 2020	Arrive Time	750
A1	28 Jul 2020	Depart Time	805
A1	28 Jul 2020	Air Temp (C)	18
A1	28 Jul 2020	Weather	Partly Cloudy
A1	28 Jul 2020	Visibility (mi)	5
A1	28 Jul 2020	Wind Speed (kts)	0
A1	28 Jul 2020	Wind Dir	
A1	28 Jul 2020	Water Color	Brownish-Green
A1	28 Jul 2020	Wave Ht Low (ft)	3
A1	28 Jul 2020	Wave Period (sec)	11
A1	28 Jul 2020	Sea State	Calm
A1	28 Jul 2020	High Tide (ft)	3.26
A1	28 Jul 2020	High Tide Time	441
A1	28 Jul 2020	Low Tide (ft)	1.71
A1	28 Jul 2020	Low Tide Time	1007
A1	28 Jul 2020	Comments	none
A6	06 Jul 2020	Depth (m)	19
A6	06 Jul 2020	Arrive Time	843
A6	06 Jul 2020	Depart Time	849
A6	06 Jul 2020	Air Temp (C)	17
A6	06 Jul 2020	Weather	Fog
A6	06 Jul 2020	Visibility (mi)	1
A6	06 Jul 2020	Wind Speed (kts)	2
A6	06 Jul 2020	Wind Dir	S
A6	06 Jul 2020	Water Color	Bluish-Green
A6	06 Jul 2020	Wave Ht Low (ft)	4
A6	06 Jul 2020	Wave Period (sec)	13
A6	06 Jul 2020	Sea State	Wind ripples
A6	06 Jul 2020	High Tide (ft)	3.91
A6	06 Jul 2020	High Tide Time	1132
A6	06 Jul 2020	Low Tide (ft)	-1.1
A6	06 Jul 2020	Low Tide Time	508
A6	06 Jul 2020	Comments	Kelp
A6	13 Jul 2020	Depth (m)	18
A6	13 Jul 2020	Arrive Time	829
A6	13 Jul 2020	Depart Time	834
A6	13 Jul 2020	Air Temp (C)	20
A6	13 Jul 2020	Weather	Partly Cloudy
A6	13 Jul 2020	Visibility (mi)	3
A6	13 Jul 2020	Wind Speed (kts)	8
A6	13 Jul 2020	Wind Dir	S
A6	13 Jul 2020	Water Color	Green
A6	13 Jul 2020	Wave Ht Low (ft)	3
A6	13 Jul 2020	Wave Period (sec)	9
A6	13 Jul 2020	Sea State	Calm
A6	13 Jul 2020	High Tide (ft)	3.08
A6	13 Jul 2020	High Tide Time	358
A6	13 Jul 2020	Low Tide (ft)	1.66
A6	13 Jul 2020	Low Tide Time	959

Station	Date	Parameter	Value
A6	13 Jul 2020	Comments	Kelp
A6	21 Jul 2020	Depth (m)	20
A6	21 Jul 2020	Arrive Time	825
A6	21 Jul 2020	Depart Time	829
A6	21 Jul 2020	Air Temp (C)	17
A6	21 Jul 2020	Weather	Continuous layer of clouds
A6	21 Jul 2020	Visibility (mi)	7
A6	21 Jul 2020	Wind Speed (kts)	0
A6	21 Jul 2020	Wind Dir	
A6	21 Jul 2020	Water Color	Green
A6	21 Jul 2020	Wave Ht Low (ft)	4
A6	21 Jul 2020	Wave Period (sec)	11
A6	21 Jul 2020	Sea State	Calm
A6	21 Jul 2020	High Tide (ft)	4.02
A6	21 Jul 2020	High Tide Time	1104
A6	21 Jul 2020	Low Tide (ft)	-1.04
A6	21 Jul 2020	Low Tide Time	444
A6	21 Jul 2020	Comments	none
A6	28 Jul 2020	Depth (m)	18
A6	28 Jul 2020	Arrive Time	824
A6	28 Jul 2020	Depart Time	830
A6	28 Jul 2020	Air Temp (C)	18
A6	28 Jul 2020	Weather	Partly Cloudy
A6	28 Jul 2020	Visibility (mi)	5
A6	28 Jul 2020	Wind Speed (kts)	0
A6	28 Jul 2020	Wind Dir	
A6	28 Jul 2020	Water Color	Brownish-Green
A6	28 Jul 2020	Wave Ht Low (ft)	3
A6	28 Jul 2020	Wave Period (sec)	11
A6	28 Jul 2020	Sea State	Calm
A6	28 Jul 2020	High Tide (ft)	3.26
A6	28 Jul 2020	High Tide Time	441
A6	28 Jul 2020	Low Tide (ft)	1.71
A6	28 Jul 2020	Low Tide Time	1007
A6	28 Jul 2020	Comments	Kelp
A7	06 Jul 2020	Depth (m)	19
A7	06 Jul 2020	Arrive Time	827
A7	06 Jul 2020	Depart Time	834
A7	06 Jul 2020	Air Temp (C)	17
A7	06 Jul 2020	Weather	Fog
A7	06 Jul 2020	Visibility (mi)	1
A7	06 Jul 2020	Wind Speed (kts)	1
A7	06 Jul 2020	Wind Dir	S
A7	06 Jul 2020	Water Color	Bluish-Green
A7	06 Jul 2020	Wave Ht Low (ft)	4
A7	06 Jul 2020	Wave Period (sec)	13
A7	06 Jul 2020	Sea State	Wind ripples
A7	06 Jul 2020	High Tide (ft)	3.91
A7	06 Jul 2020	High Tide Time	1132
A7	06 Jul 2020	Low Tide (ft)	-1.1
A7	06 Jul 2020	Low Tide Time	508
A7	06 Jul 2020	Comments	Kelp

Station	Date	Parameter	Value
A7	13 Jul 2020	Depth (m)	18
A7	13 Jul 2020	Arrive Time	814
A7	13 Jul 2020	Depart Time	819
A7	13 Jul 2020	Air Temp (C)	20
A7	13 Jul 2020	Weather	Partly Cloudy
A7	13 Jul 2020	Visibility (mi)	3
A7	13 Jul 2020	Wind Speed (kts)	7
A7	13 Jul 2020	Wind Dir	S
A7	13 Jul 2020	Water Color	Green
A7	13 Jul 2020	Wave Ht Low (ft)	3
A7	13 Jul 2020	Wave Period (sec)	9
A7	13 Jul 2020	Sea State	Calm
A7	13 Jul 2020	High Tide (ft)	3.08
A7	13 Jul 2020	High Tide Time	358
A7	13 Jul 2020	Low Tide (ft)	1.66
A7	13 Jul 2020	Low Tide Time	959
A7	13 Jul 2020	Comments	Kelp
A7	21 Jul 2020	Depth (m)	19
A7	21 Jul 2020	Arrive Time	810
A7	21 Jul 2020	Depart Time	813
A7	21 Jul 2020	Air Temp (C)	17
A7	21 Jul 2020	Weather	Continuous layer of clouds
A7	21 Jul 2020	Visibility (mi)	6
A7	21 Jul 2020	Wind Speed (kts)	1
A7	21 Jul 2020	Wind Dir	NW
A7	21 Jul 2020	Water Color	Green
A7	21 Jul 2020	Wave Ht Low (ft)	4
A7	21 Jul 2020	Wave Period (sec)	11
A7	21 Jul 2020	Sea State	Calm
A7	21 Jul 2020	High Tide (ft)	4.02
A7	21 Jul 2020	High Tide Time	1104
A7	21 Jul 2020	Low Tide (ft)	-1.04
A7	21 Jul 2020	Low Tide Time	444
A7	21 Jul 2020	Comments	Kelp
A7	28 Jul 2020	Depth (m)	18
A7	28 Jul 2020	Arrive Time	813
A7	28 Jul 2020	Depart Time	819
A7	28 Jul 2020	Air Temp (C)	18
A7	28 Jul 2020	Weather	Partly Cloudy
A7	28 Jul 2020	Visibility (mi)	5
A7	28 Jul 2020	Wind Speed (kts)	2
A7	28 Jul 2020	Wind Dir	SW
A7	28 Jul 2020	Water Color	Brownish-Green
A7	28 Jul 2020	Wave Ht Low (ft)	3
A7	28 Jul 2020	Wave Period (sec)	11
A7	28 Jul 2020	Sea State	Calm
A7	28 Jul 2020	High Tide (ft)	3.26
A7	28 Jul 2020	High Tide Time	441
A7	28 Jul 2020	Low Tide (ft)	1.71
A7	28 Jul 2020	Low Tide Time	1007
A7	28 Jul 2020	Comments	Kelp

Station	Date	Parameter	Value
C4	06 Jul 2020	Depth (m)	12
C4	06 Jul 2020	Arrive Time	1006
C4	06 Jul 2020	Depart Time	1016
C4	06 Jul 2020	Air Temp (C)	18
C4	06 Jul 2020	Weather	Fog
C4	06 Jul 2020	Visibility (mi)	2
C4	06 Jul 2020	Wind Speed (kts)	0
C4	06 Jul 2020	Wind Dir	
C4	06 Jul 2020	Water Color	Bluish-Green
C4	06 Jul 2020	Wave Ht Low (ft)	4
C4	06 Jul 2020	Wave Period (sec)	13
C4	06 Jul 2020	Sea State	Wind ripples
C4	06 Jul 2020	High Tide (ft)	3.91
C4	06 Jul 2020	High Tide Time	1132
C4	06 Jul 2020	Low Tide (ft)	-1.1
C4	06 Jul 2020	Low Tide Time	508
C4	06 Jul 2020	Comments	Kelp
C4	13 Jul 2020	Depth (m)	9
C4	13 Jul 2020	Arrive Time	956
C4	13 Jul 2020	Depart Time	1032
C4	13 Jul 2020	Air Temp (C)	20
C4	13 Jul 2020	Weather	Partly Cloudy
C4	13 Jul 2020	Visibility (mi)	3
C4	13 Jul 2020	Wind Speed (kts)	9
C4	13 Jul 2020	Wind Dir	S
C4	13 Jul 2020	Water Color	Green
C4	13 Jul 2020	Wave Ht Low (ft)	3
C4	13 Jul 2020	Wave Period (sec)	9
C4	13 Jul 2020	Sea State	Calm
C4	13 Jul 2020	High Tide (ft)	3.08
C4	13 Jul 2020	High Tide Time	358
C4	13 Jul 2020	Low Tide (ft)	1.66
C4	13 Jul 2020	Low Tide Time	959
C4	13 Jul 2020	Comments	none
C4	21 Jul 2020	Depth (m)	11
C4	21 Jul 2020	Arrive Time	943
C4	21 Jul 2020	Depart Time	947
C4	21 Jul 2020	Air Temp (C)	18
C4	21 Jul 2020	Weather	Continuous layer of clouds
C4	21 Jul 2020	Visibility (mi)	7
C4	21 Jul 2020	Wind Speed (kts)	2
C4	21 Jul 2020	Wind Dir	S
C4	21 Jul 2020	Water Color	Brownish-Green
C4	21 Jul 2020	Wave Ht Low (ft)	4
C4	21 Jul 2020	Wave Period (sec)	11
C4	21 Jul 2020	Sea State	Calm
C4	21 Jul 2020	High Tide (ft)	4.02
C4	21 Jul 2020	High Tide Time	1104
C4	21 Jul 2020	Low Tide (ft)	-1.04
C4	21 Jul 2020	Low Tide Time	444
C4	21 Jul 2020	Comments	Kelp
C4	28 Jul 2020	Depth (m)	9

Station	Date	Parameter	Value
C4	28 Jul 2020	Arrive Time	946
C4	28 Jul 2020	Depart Time	1005
C4	28 Jul 2020	Air Temp (C)	18
C4	28 Jul 2020	Weather	Partly Cloudy
C4	28 Jul 2020	Visibility (mi)	5
C4	28 Jul 2020	Wind Speed (kts)	3
C4	28 Jul 2020	Wind Dir	W
C4	28 Jul 2020	Water Color	Brownish-Green
C4	28 Jul 2020	Wave Ht Low (ft)	3
C4	28 Jul 2020	Wave Period (sec)	11
C4	28 Jul 2020	Sea State	Calm
C4	28 Jul 2020	High Tide (ft)	3.26
C4	28 Jul 2020	High Tide Time	441
C4	28 Jul 2020	Low Tide (ft)	1.71
C4	28 Jul 2020	Low Tide Time	1007
C4	28 Jul 2020	Comments	none
C5	06 Jul 2020	Depth (m)	10
C5	06 Jul 2020	Arrive Time	954
C5	06 Jul 2020	Depart Time	959
C5	06 Jul 2020	Air Temp (C)	18
C5	06 Jul 2020	Weather	Fog
C5	06 Jul 2020	Visibility (mi)	2
C5	06 Jul 2020	Wind Speed (kts)	3
C5	06 Jul 2020	Wind Dir	S
C5	06 Jul 2020	Water Color	Bluish-Green
C5	06 Jul 2020	Wave Ht Low (ft)	4
C5	06 Jul 2020	Wave Period (sec)	13
C5	06 Jul 2020	Sea State	Wind ripples
C5	06 Jul 2020	High Tide (ft)	3.91
C5	06 Jul 2020	High Tide Time	1132
C5	06 Jul 2020	Low Tide (ft)	-1.1
C5	06 Jul 2020	Low Tide Time	508
C5	06 Jul 2020	Comments	none
C5	13 Jul 2020	Depth (m)	9
C5	13 Jul 2020	Arrive Time	941
C5	13 Jul 2020	Depart Time	947
C5	13 Jul 2020	Air Temp (C)	20
C5	13 Jul 2020	Weather	Partly Cloudy
C5	13 Jul 2020	Visibility (mi)	3
C5	13 Jul 2020	Wind Speed (kts)	6
C5	13 Jul 2020	Wind Dir	S
C5	13 Jul 2020	Water Color	Green
C5	13 Jul 2020	Wave Ht Low (ft)	3
C5	13 Jul 2020	Wave Period (sec)	9
C5	13 Jul 2020	Sea State	Calm
C5	13 Jul 2020	High Tide (ft)	3.08
C5	13 Jul 2020	High Tide Time	358
C5	13 Jul 2020	Low Tide (ft)	1.66
C5	13 Jul 2020	Low Tide Time	959
C5	13 Jul 2020	Comments	Kelp
C5	21 Jul 2020	Depth (m)	10
C5	21 Jul 2020	Arrive Time	929

Station	Date	Parameter	Value
C5	21 Jul 2020	Depart Time	932
C5	21 Jul 2020	Air Temp (C)	18
C5	21 Jul 2020	Weather	Continuous layer of clouds
C5	21 Jul 2020	Visibility (mi)	7
C5	21 Jul 2020	Wind Speed (kts)	1
C5	21 Jul 2020	Wind Dir	S
C5	21 Jul 2020	Water Color	Greenish-Brown
C5	21 Jul 2020	Wave Ht Low (ft)	4
C5	21 Jul 2020	Wave Period (sec)	11
C5	21 Jul 2020	Sea State	Calm
C5	21 Jul 2020	High Tide (ft)	4.02
C5	21 Jul 2020	High Tide Time	1104
C5	21 Jul 2020	Low Tide (ft)	-1.04
C5	21 Jul 2020	Low Tide Time	444
C5	21 Jul 2020	Comments	Kelp debris
C5	28 Jul 2020	Depth (m)	9
C5	28 Jul 2020	Arrive Time	933
C5	28 Jul 2020	Depart Time	940
C5	28 Jul 2020	Air Temp (C)	18
C5	28 Jul 2020	Weather	Partly Cloudy
C5	28 Jul 2020	Visibility (mi)	5
C5	28 Jul 2020	Wind Speed (kts)	2
C5	28 Jul 2020	Wind Dir	SW
C5	28 Jul 2020	Water Color	Brownish-Green
C5	28 Jul 2020	Wave Ht Low (ft)	3
C5	28 Jul 2020	Wave Period (sec)	11
C5	28 Jul 2020	Sea State	Calm
C5	28 Jul 2020	High Tide (ft)	3.26
C5	28 Jul 2020	High Tide Time	441
C5	28 Jul 2020	Low Tide (ft)	1.71
C5	28 Jul 2020	Low Tide Time	1007
C5	28 Jul 2020	Comments	none
C6	06 Jul 2020	Depth (m)	9
C6	06 Jul 2020	Arrive Time	941
C6	06 Jul 2020	Depart Time	948
C6	06 Jul 2020	Air Temp (C)	17
C6	06 Jul 2020	Weather	Fog
C6	06 Jul 2020	Visibility (mi)	1
C6	06 Jul 2020	Wind Speed (kts)	3
C6	06 Jul 2020	Wind Dir	S
C6	06 Jul 2020	Water Color	Bluish-Green
C6	06 Jul 2020	Wave Ht Low (ft)	4
C6	06 Jul 2020	Wave Period (sec)	13
C6	06 Jul 2020	Sea State	Wind ripples
C6	06 Jul 2020	High Tide (ft)	3.91
C6	06 Jul 2020	High Tide Time	1132
C6	06 Jul 2020	Low Tide (ft)	-1.1
C6	06 Jul 2020	Low Tide Time	508
C6	06 Jul 2020	Comments	none
C6	13 Jul 2020	Depth (m)	10
C6	13 Jul 2020	Arrive Time	928
C6	13 Jul 2020	Depart Time	933

Station	Date	Parameter	Value
C6	13 Jul 2020	Air Temp (C)	20
C6	13 Jul 2020	Weather	Partly Cloudy
C6	13 Jul 2020	Visibility (mi)	3
C6	13 Jul 2020	Wind Speed (kts)	4
C6	13 Jul 2020	Wind Dir	S
C6	13 Jul 2020	Water Color	Green
C6	13 Jul 2020	Wave Ht Low (ft)	3
C6	13 Jul 2020	Wave Period (sec)	9
C6	13 Jul 2020	Sea State	Calm
C6	13 Jul 2020	High Tide (ft)	3.08
C6	13 Jul 2020	High Tide Time	358
C6	13 Jul 2020	Low Tide (ft)	1.66
C6	13 Jul 2020	Low Tide Time	959
C6	13 Jul 2020	Comments	Kelp
C6	21 Jul 2020	Depth (m)	9
C6	21 Jul 2020	Arrive Time	918
C6	21 Jul 2020	Depart Time	921
C6	21 Jul 2020	Air Temp (C)	18
C6	21 Jul 2020	Weather	Continuous layer of clouds
C6	21 Jul 2020	Visibility (mi)	7
C6	21 Jul 2020	Wind Speed (kts)	0
C6	21 Jul 2020	Wind Dir	
C6	21 Jul 2020	Water Color	Greenish-Brown
C6	21 Jul 2020	Wave Ht Low (ft)	4
C6	21 Jul 2020	Wave Period (sec)	11
C6	21 Jul 2020	Sea State	Calm
C6	21 Jul 2020	High Tide (ft)	4.02
C6	21 Jul 2020	High Tide Time	1104
C6	21 Jul 2020	Low Tide (ft)	-1.04
C6	21 Jul 2020	Low Tide Time	444
C6	21 Jul 2020	Comments	Seagrass; Kelp debris
C6	28 Jul 2020	Depth (m)	9
C6	28 Jul 2020	Arrive Time	919
C6	28 Jul 2020	Depart Time	923
C6	28 Jul 2020	Air Temp (C)	18
C6	28 Jul 2020	Weather	Partly Cloudy
C6	28 Jul 2020	Visibility (mi)	5
C6	28 Jul 2020	Wind Speed (kts)	0
C6	28 Jul 2020	Wind Dir	
C6	28 Jul 2020	Water Color	Brownish-Green
C6	28 Jul 2020	Wave Ht Low (ft)	3
C6	28 Jul 2020	Wave Period (sec)	11
C6	28 Jul 2020	Sea State	Calm
C6	28 Jul 2020	High Tide (ft)	3.26
C6	28 Jul 2020	High Tide Time	441
C6	28 Jul 2020	Low Tide (ft)	1.71
C6	28 Jul 2020	Low Tide Time	1007
C6	28 Jul 2020	Comments	none
C7	06 Jul 2020	Depth (m)	18
C7	06 Jul 2020	Arrive Time	902
C7	06 Jul 2020	Depart Time	908
C7	06 Jul 2020	Air Temp (C)	18

Station	Date	Parameter	Value
C7	06 Jul 2020	Weather	Fog
C7	06 Jul 2020	Visibility (mi)	1
C7	06 Jul 2020	Wind Speed (kts)	4
C7	06 Jul 2020	Wind Dir	SW
C7	06 Jul 2020	Water Color	Bluish-Green
C7	06 Jul 2020	Wave Ht Low (ft)	4
C7	06 Jul 2020	Wave Period (sec)	13
C7	06 Jul 2020	Sea State	Wind ripples
C7	06 Jul 2020	High Tide (ft)	3.91
C7	06 Jul 2020	High Tide Time	1132
C7	06 Jul 2020	Low Tide (ft)	-1.1
C7	06 Jul 2020	Low Tide Time	508
C7	06 Jul 2020	Comments	Kelp
C7	13 Jul 2020	Depth (m)	18
C7	13 Jul 2020	Arrive Time	849
C7	13 Jul 2020	Depart Time	853
C7	13 Jul 2020	Air Temp (C)	20
C7	13 Jul 2020	Weather	Partly Cloudy
C7	13 Jul 2020	Visibility (mi)	3
C7	13 Jul 2020	Wind Speed (kts)	8
C7	13 Jul 2020	Wind Dir	S
C7	13 Jul 2020	Water Color	Green
C7	13 Jul 2020	Wave Ht Low (ft)	3
C7	13 Jul 2020	Wave Period (sec)	9
C7	13 Jul 2020	Sea State	Calm
C7	13 Jul 2020	High Tide (ft)	3.08
C7	13 Jul 2020	High Tide Time	358
C7	13 Jul 2020	Low Tide (ft)	1.66
C7	13 Jul 2020	Low Tide Time	959
C7	13 Jul 2020	Comments	Kelp; Boats
C7	21 Jul 2020	Depth (m)	18
C7	21 Jul 2020	Arrive Time	845
C7	21 Jul 2020	Depart Time	846
C7	21 Jul 2020	Air Temp (C)	17
C7	21 Jul 2020	Weather	Continuous layer of clouds
C7	21 Jul 2020	Visibility (mi)	7
C7	21 Jul 2020	Wind Speed (kts)	4
C7	21 Jul 2020	Wind Dir	SE
C7	21 Jul 2020	Water Color	Green
C7	21 Jul 2020	Wave Ht Low (ft)	4
C7	21 Jul 2020	Wave Period (sec)	11
C7	21 Jul 2020	Sea State	Calm
C7	21 Jul 2020	High Tide (ft)	4.02
C7	21 Jul 2020	High Tide Time	1104
C7	21 Jul 2020	Low Tide (ft)	-1.04
C7	21 Jul 2020	Low Tide Time	444
C7	21 Jul 2020	Comments	none
C7	28 Jul 2020	Depth (m)	18
C7	28 Jul 2020	Arrive Time	840
C7	28 Jul 2020	Depart Time	845
C7	28 Jul 2020	Air Temp (C)	18
C7	28 Jul 2020	Weather	Partly Cloudy

Station	Date	Parameter	Value
C7	28 Jul 2020	Visibility (mi)	5
C7	28 Jul 2020	Wind Speed (kts)	1
C7	28 Jul 2020	Wind Dir	S
C7	28 Jul 2020	Water Color	Brownish-Green
C7	28 Jul 2020	Wave Ht Low (ft)	3
C7	28 Jul 2020	Wave Period (sec)	11
C7	28 Jul 2020	Sea State	Calm
C7	28 Jul 2020	High Tide (ft)	3.26
C7	28 Jul 2020	High Tide Time	441
C7	28 Jul 2020	Low Tide (ft)	1.71
C7	28 Jul 2020	Low Tide Time	1007
C7	28 Jul 2020	Comments	none
C8	06 Jul 2020	Depth (m)	19
C8	06 Jul 2020	Arrive Time	914
C8	06 Jul 2020	Depart Time	923
C8	06 Jul 2020	Air Temp (C)	18
C8	06 Jul 2020	Weather	Fog
C8	06 Jul 2020	Visibility (mi)	1
C8	06 Jul 2020	Wind Speed (kts)	5
C8	06 Jul 2020	Wind Dir	S
C8	06 Jul 2020	Water Color	Bluish-Green
C8	06 Jul 2020	Wave Ht Low (ft)	4
C8	06 Jul 2020	Wave Period (sec)	13
C8	06 Jul 2020	Sea State	Wind ripples
C8	06 Jul 2020	High Tide (ft)	3.91
C8	06 Jul 2020	High Tide Time	1132
C8	06 Jul 2020	Low Tide (ft)	-1.1
C8	06 Jul 2020	Low Tide Time	508
C8	06 Jul 2020	Comments	none
C8	13 Jul 2020	Depth (m)	19
C8	13 Jul 2020	Arrive Time	902
C8	13 Jul 2020	Depart Time	909
C8	13 Jul 2020	Air Temp (C)	20
C8	13 Jul 2020	Weather	Partly Cloudy
C8	13 Jul 2020	Visibility (mi)	3
C8	13 Jul 2020	Wind Speed (kts)	9
C8	13 Jul 2020	Wind Dir	SE
C8	13 Jul 2020	Water Color	Green
C8	13 Jul 2020	Wave Ht Low (ft)	3
C8	13 Jul 2020	Wave Period (sec)	9
C8	13 Jul 2020	Sea State	Calm
C8	13 Jul 2020	High Tide (ft)	3.08
C8	13 Jul 2020	High Tide Time	358
C8	13 Jul 2020	Low Tide (ft)	1.66
C8	13 Jul 2020	Low Tide Time	959
C8	13 Jul 2020	Comments	Boats
C8	21 Jul 2020	Depth (m)	18
C8	21 Jul 2020	Arrive Time	855
C8	21 Jul 2020	Depart Time	859
C8	21 Jul 2020	Air Temp (C)	17
C8	21 Jul 2020	Weather	Continuous layer of clouds
C8	21 Jul 2020	Visibility (mi)	7

Station	Date	Parameter	Value
C8	21 Jul 2020	Wind Speed (kts)	4
C8	21 Jul 2020	Wind Dir	S
C8	21 Jul 2020	Water Color	Green
C8	21 Jul 2020	Wave Ht Low (ft)	4
C8	21 Jul 2020	Wave Period (sec)	11
C8	21 Jul 2020	Sea State	Calm
C8	21 Jul 2020	High Tide (ft)	4.02
C8	21 Jul 2020	High Tide Time	1104
C8	21 Jul 2020	Low Tide (ft)	-1.04
C8	21 Jul 2020	Low Tide Time	444
C8	21 Jul 2020	Comments	none
C8	28 Jul 2020	Depth (m)	18
C8	28 Jul 2020	Arrive Time	855
C8	28 Jul 2020	Depart Time	901
C8	28 Jul 2020	Air Temp (C)	18
C8	28 Jul 2020	Weather	Partly Cloudy
C8	28 Jul 2020	Visibility (mi)	5
C8	28 Jul 2020	Wind Speed (kts)	0
C8	28 Jul 2020	Wind Dir	
C8	28 Jul 2020	Water Color	Brownish-Green
C8	28 Jul 2020	Wave Ht Low (ft)	3
C8	28 Jul 2020	Wave Period (sec)	11
C8	28 Jul 2020	Sea State	Calm
C8	28 Jul 2020	High Tide (ft)	3.26
C8	28 Jul 2020	High Tide Time	441
C8	28 Jul 2020	Low Tide (ft)	1.71
C8	28 Jul 2020	Low Tide Time	1007
C8	28 Jul 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 (σ-t)	Chlor (µg/L)
A1	06 Jul 2020	1	16.84	75.85	8.3	33.66	8.2	24.5	3.81
A1	06 Jul 2020	2	16.63	75.79	8.4	33.67	8.2	24.6	3.92
A1	06 Jul 2020	3	16.44	75.65	8.4	33.68	8.2	24.6	4.37
A1	06 Jul 2020	4	16.14	75.22	8.3	33.68	8.2	24.7	4.88
A1	06 Jul 2020	5	15.53	74.34	8.2	33.72	8.2	24.9	5.35
A1	06 Jul 2020	6	15.37	74.52	7.8	33.70	8.1	24.9	5.90
A1	06 Jul 2020	7	13.79	76.56	6.9	33.86	8.1	25.3	6.34
A1	06 Jul 2020	8	13.38	81.07	6.3	33.73	8.0	25.3	5.82
A1	06 Jul 2020	9	12.97	83.97	5.9	33.74	8.0	25.4	4.59
A1	06 Jul 2020	10	12.80	85.55	5.7	33.71	8.0	25.4	3.40
A1	06 Jul 2020	11	12.73	87.03	5.5	33.72	7.9	25.5	2.48
A1	06 Jul 2020	12	12.29	87.30	5.3	33.76	7.9	25.6	2.14
A1	06 Jul 2020	13	12.27	87.68	5.2	33.69	7.9	25.5	1.70
A1	06 Jul 2020	14	11.85	88.33	5.1	33.78	7.9	25.7	1.46
A1	06 Jul 2020	15	11.66	88.66	5.0	33.73	7.9	25.7	1.36
A1	06 Jul 2020	16	11.56	89.03	4.9	33.73	7.9	25.7	1.27
A1	06 Jul 2020	17	11.37	89.26	4.8	33.74	7.9	25.7	1.17
A1	06 Jul 2020	18	11.35	89.42	4.7	33.73	7.9	25.7	1.15
A1	13 Jul 2020	1	19.43	80.57	8.1	33.69	8.2	23.9	1.54
A1	13 Jul 2020	2	18.05	79.99	8.1	33.86	8.2	24.4	1.59
A1	13 Jul 2020	3	16.81	77.87	8.3	33.77	8.2	24.6	1.77
A1	13 Jul 2020	4	16.06	76.20	8.2	33.78	8.2	24.8	2.38
A1	13 Jul 2020	5	15.44	76.58	8.0	33.69	8.1	24.9	3.24
A1	13 Jul 2020	6	14.59	76.73	7.6	33.79	8.1	25.1	4.18
A1	13 Jul 2020	7	14.22	76.05	7.4	33.72	8.1	25.2	4.70
A1	13 Jul 2020	8	14.06	76.73	7.2	33.69	8.1	25.2	5.41
A1	13 Jul 2020	9	13.94	77.38	7.0	33.69	8.1	25.2	5.91
A1	13 Jul 2020	10	13.71	77.97	6.8	33.71	8.0	25.2	5.84
A1	13 Jul 2020	11	13.51	78.95	6.6	33.69	8.0	25.3	5.90
A1	13 Jul 2020	12	13.52	79.65	6.5	33.69	8.0	25.3	5.45
A1	13 Jul 2020	13	13.45	79.98	6.5	33.69	8.0	25.3	5.15
A1	13 Jul 2020	14	13.40	79.66	6.3	33.69	8.0	25.3	5.07
A1	13 Jul 2020	15	13.33	79.75	6.3	33.70	8.0	25.3	4.85
A1	13 Jul 2020	16	13.07	80.95	6.0	33.74	8.0	25.4	4.63
A1	13 Jul 2020	17	12.30	82.98	5.6	33.75	8.0	25.6	4.21
A1	13 Jul 2020	18	12.03	87.16	5.3	33.74	7.9	25.6	3.20
A1	13 Jul 2020	19	11.99	88.56	5.2	33.71	7.9	25.6	2.31
A1	21 Jul 2020	1	14.81	79.92	7.7	33.62	8.1	24.9	3.47
A1	21 Jul 2020	2	14.73	78.67	7.5	33.66	8.1	25.0	3.60
A1	21 Jul 2020	3	13.68	77.15	7.4	33.81	8.0	25.3	3.69
A1	21 Jul 2020	4	12.78	78.40	6.9	33.77	8.0	25.5	4.04
A1	21 Jul 2020	5	12.37	80.61	6.4	33.69	7.9	25.5	5.02
A1	21 Jul 2020	6	12.05	82.52	6.0	33.68	7.9	25.6	5.64
A1	21 Jul 2020	7	11.98	84.21	5.9	33.65	7.9	25.5	5.76
A1	21 Jul 2020	8	11.75	86.91	5.7	33.65	7.9	25.6	5.40
A1	21 Jul 2020	9	11.63	88.21	5.6	33.64	7.9	25.6	5.04
A1	21 Jul 2020	10	11.66	89.13	5.6	33.63	7.9	25.6	3.70
A1	21 Jul 2020	11	11.61	89.46	5.5	33.65	7.9	25.6	2.68

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A1	21 Jul 2020	12	11.50	89.92	5.4	33.67	7.8	25.6	2.35
	21 Jul 2020	13	11.43	90.33	5.2	33.68	7.8	25.7	2.00
	21 Jul 2020	14	11.30	90.90	5.1	33.69	7.8	25.7	1.65
	21 Jul 2020	15	11.28	91.39	5.0	33.69	7.8	25.7	1.23
	21 Jul 2020	16	11.28	91.22	4.9	33.69	7.8	25.7	0.98
	21 Jul 2020	17	11.29	90.70	4.9	33.68	7.8	25.7	0.72
	21 Jul 2020	18	11.31	90.23	4.8	33.68	7.8	25.7	0.62
A1	28 Jul 2020	1	16.51	79.21	7.0	33.70	8.0	24.6	3.97
	28 Jul 2020	2	16.35	78.60	7.0	33.79	8.0	24.7	3.58
	28 Jul 2020	3	16.03	76.94	6.8	34.04	8.0	25.0	3.94
	28 Jul 2020	4	15.62	75.69	7.1	34.04	8.0	25.1	3.68
	28 Jul 2020	5	15.18	74.57	7.2	34.05	8.0	25.2	3.52
	28 Jul 2020	6	15.11	74.68	7.6	33.85	8.0	25.1	3.54
	28 Jul 2020	7	14.98	74.78	7.8	33.80	8.0	25.0	3.64
	28 Jul 2020	8	14.91	74.99	7.8	33.75	8.0	25.0	3.68
	28 Jul 2020	9	14.42	74.76	7.8	33.88	8.0	25.2	3.68
	28 Jul 2020	10	13.74	72.81	7.8	33.85	8.0	25.4	5.07
	28 Jul 2020	11	12.89	73.54	7.5	33.97	8.0	25.6	5.69
	28 Jul 2020	12	12.41	77.39	7.2	33.79	7.9	25.6	6.04
	28 Jul 2020	13	12.26	81.58	6.7	33.73	7.9	25.6	7.56
	28 Jul 2020	14	12.06	85.49	6.2	33.73	7.9	25.6	7.40
	28 Jul 2020	15	11.91	86.13	5.8	33.71	7.8	25.6	6.33
	28 Jul 2020	16	11.82	87.68	5.5	33.70	7.8	25.6	4.47
	28 Jul 2020	17	11.64	89.52	5.3	33.75	7.8	25.7	3.99
	28 Jul 2020	18	11.43	90.62	5.2	33.73	7.8	25.7	3.52
A6	06 Jul 2020	1	18.92	74.86	7.9	33.67	8.2	24.0	2.53
	06 Jul 2020	2	18.65	75.40	8.0	33.69	8.2	24.1	2.63
	06 Jul 2020	3	18.30	75.82	7.8	33.73	8.2	24.2	2.85
	06 Jul 2020	4	17.11	75.36	7.5	33.77	8.2	24.5	3.02
	06 Jul 2020	5	16.13	71.85	7.3	33.74	8.1	24.8	3.53
	06 Jul 2020	6	15.50	73.13	7.0	33.66	8.1	24.8	4.19
	06 Jul 2020	7	15.20	75.03	6.7	33.70	8.0	24.9	4.35
	06 Jul 2020	8	13.84	77.26	6.3	33.83	8.0	25.3	4.23
	06 Jul 2020	9	12.67	76.26	5.9	33.78	8.0	25.5	4.45
	06 Jul 2020	10	12.99	76.46	5.7	33.63	8.0	25.3	4.66
	06 Jul 2020	11	13.21	78.42	5.8	33.73	8.0	25.4	4.79
	06 Jul 2020	12	13.13	80.07	5.8	33.63	8.0	25.3	4.98
	06 Jul 2020	13	13.51	81.06	5.8	33.70	8.0	25.3	4.73
	06 Jul 2020	14	12.94	81.56	5.7	33.78	7.9	25.5	4.62
	06 Jul 2020	15	12.53	82.84	5.6	33.74	7.9	25.5	4.41
	06 Jul 2020	16	12.82	86.24	5.4	33.69	7.9	25.4	3.80
	06 Jul 2020	17	12.22	86.28	5.3	33.81	7.9	25.6	3.30
	06 Jul 2020	18	12.07	87.00	5.2	33.69	7.9	25.6	2.82
A6	13 Jul 2020	1	21.89	80.67	8.7	33.71	8.3	23.3	1.60
	13 Jul 2020	2	21.88	80.81	8.7	33.71	8.3	23.3	1.60
	13 Jul 2020	3	21.86	80.95	8.7	33.71	8.3	23.3	1.65
	13 Jul 2020	4	21.85	81.07	8.7	33.71	8.3	23.3	1.75
	13 Jul 2020	5	21.84	81.16	8.8	33.71	8.3	23.3	1.81
	13 Jul 2020	6	21.80	81.20	8.7	33.72	8.3	23.3	1.78
	13 Jul 2020	7	19.50	80.38	8.5	34.05	8.3	24.2	1.86
	13 Jul 2020	8	16.36	78.70	8.4	33.94	8.3	24.9	2.24
	13 Jul 2020	9	15.20	76.32	7.6	33.84	8.2	25.0	4.31

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A6	13 Jul 2020	10	14.54	77.28	7.0	33.78	8.1	25.1	6.45
A6	13 Jul 2020	11	14.26	78.12	6.7	33.74	8.1	25.2	7.18
A6	13 Jul 2020	12	14.09	78.90	6.5	33.72	8.1	25.2	7.65
A6	13 Jul 2020	13	14.03	79.77	6.4	33.72	8.1	25.2	7.65
A6	13 Jul 2020	14	13.96	80.97	6.3	33.72	8.1	25.2	6.95
A6	13 Jul 2020	15	13.84	83.99	6.2	33.71	8.1	25.2	6.00
A6	13 Jul 2020	16	13.84	85.36	6.2	33.71	8.1	25.2	4.43
A6	13 Jul 2020	17	13.71	85.36	6.1	33.71	8.1	25.2	3.69
A6	13 Jul 2020	18	13.47	85.78	6.0	33.74	8.1	25.3	3.23
A6	13 Jul 2020	19	13.21	87.16	5.8	33.74	8.0	25.4	2.63
A6	13 Jul 2020	20	12.74	88.12	5.6	33.79	8.0	25.5	2.26
A6	21 Jul 2020	1	15.00	75.03	7.4	33.66	8.1	24.9	5.13
A6	21 Jul 2020	2	14.96	75.12	7.4	33.64	8.1	24.9	5.42
A6	21 Jul 2020	3	14.93	75.14	7.3	33.68	8.1	25.0	5.55
A6	21 Jul 2020	4	14.12	74.48	7.2	33.78	8.1	25.2	5.77
A6	21 Jul 2020	5	13.74	73.65	6.9	33.74	8.0	25.3	6.37
A6	21 Jul 2020	6	13.31	73.70	6.6	33.74	8.0	25.4	7.29
A6	21 Jul 2020	7	13.08	74.58	6.3	33.71	8.0	25.4	8.42
A6	21 Jul 2020	8	12.96	76.66	6.3	33.69	8.0	25.4	9.37
A6	21 Jul 2020	9	12.74	77.60	6.2	33.72	8.0	25.4	9.01
A6	21 Jul 2020	10	12.61	78.17	6.0	33.70	8.0	25.5	8.80
A6	21 Jul 2020	11	12.62	78.76	5.8	33.68	7.9	25.4	8.21
A6	21 Jul 2020	12	12.50	78.89	5.7	33.72	7.9	25.5	7.70
A6	21 Jul 2020	13	12.30	80.88	5.6	33.72	7.9	25.5	7.30
A6	21 Jul 2020	14	12.19	82.37	5.4	33.71	7.9	25.6	7.13
A6	21 Jul 2020	15	12.24	82.67	5.2	33.70	7.9	25.5	6.12
A6	21 Jul 2020	16	12.14	83.86	5.2	33.72	7.9	25.6	5.03
A6	21 Jul 2020	17	12.09	84.86	5.1	33.71	7.9	25.6	4.72
A6	21 Jul 2020	18	12.03	85.28	4.9	33.72	7.9	25.6	4.31
A6	21 Jul 2020	19	12.01	85.62	4.8	33.71	7.9	25.6	3.59
A6	21 Jul 2020	20	11.84	86.06	4.7	33.75	7.8	25.6	2.85
A6	21 Jul 2020	21	11.67	86.55	4.6	33.74	7.8	25.7	2.56
A6	28 Jul 2020	1	16.94	76.93	8.7	33.61	8.1	24.5	3.88
A6	28 Jul 2020	2	17.05	77.74	8.7	33.63	8.1	24.5	4.09
A6	28 Jul 2020	3	14.51	74.15	8.1	33.81	8.1	25.2	4.19
A6	28 Jul 2020	4	13.78	71.90	7.4	33.78	8.0	25.3	6.04
A6	28 Jul 2020	5	12.61	75.33	7.0	33.69	8.0	25.5	7.52
A6	28 Jul 2020	6	12.61	78.78	6.6	33.61	7.9	25.4	7.94
A6	28 Jul 2020	7	12.53	80.01	6.6	33.60	7.9	25.4	7.39
A6	28 Jul 2020	8	12.40	80.18	6.5	33.60	7.9	25.4	7.15
A6	28 Jul 2020	9	12.30	81.47	6.4	33.59	7.9	25.4	6.95
A6	28 Jul 2020	10	12.34	83.10	6.2	33.58	7.9	25.4	6.28
A6	28 Jul 2020	11	12.23	83.35	6.2	33.62	7.9	25.5	5.48
A6	28 Jul 2020	12	12.05	85.75	6.0	33.62	7.9	25.5	5.49
A6	28 Jul 2020	13	12.09	85.77	5.8	33.60	7.9	25.5	4.66
A6	28 Jul 2020	14	11.96	86.45	5.6	33.64	7.8	25.5	3.97
A6	28 Jul 2020	15	11.96	87.00	5.4	33.62	7.8	25.5	3.55
A6	28 Jul 2020	16	11.82	87.12	5.4	33.66	7.8	25.6	3.06
A6	28 Jul 2020	17	11.68	88.38	5.2	33.67	7.8	25.6	3.01
A6	28 Jul 2020	18	11.64	89.13	5.0	33.66	7.8	25.6	2.48
A6	28 Jul 2020	19	11.58	89.50	5.0	33.67	7.8	25.6	2.03
A7	06 Jul 2020	1	18.77	77.50	8.4	33.67	8.2	24.1	2.47

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A7	06 Jul 2020	2	18.58	77.31	8.3	33.70	8.2	24.1	2.44
A7	06 Jul 2020	3	18.11	77.15	8.3	33.71	8.2	24.3	2.64
A7	06 Jul 2020	4	17.90	77.11	8.1	33.68	8.2	24.3	3.17
A7	06 Jul 2020	5	15.38	76.94	7.8	33.78	8.2	25.0	3.50
A7	06 Jul 2020	6	15.66	76.39	7.5	33.66	8.1	24.8	4.76
A7	06 Jul 2020	7	13.81	78.72	6.9	33.76	8.1	25.3	5.67
A7	06 Jul 2020	8	13.66	81.24	6.5	33.73	8.1	25.3	5.23
A7	06 Jul 2020	9	13.07	82.75	6.2	33.71	8.0	25.4	4.81
A7	06 Jul 2020	10	12.96	83.93	6.1	33.72	8.0	25.4	4.16
A7	06 Jul 2020	11	12.67	84.94	5.8	33.71	8.0	25.5	3.56
A7	06 Jul 2020	12	12.39	86.09	5.6	33.73	8.0	25.5	2.97
A7	06 Jul 2020	13	12.27	87.13	5.5	33.70	8.0	25.5	2.41
A7	06 Jul 2020	14	12.13	87.50	5.5	33.71	8.0	25.6	2.15
A7	06 Jul 2020	15	12.12	87.56	5.4	33.69	8.0	25.6	2.11
A7	06 Jul 2020	16	11.96	87.76	5.3	33.71	7.9	25.6	2.10
A7	06 Jul 2020	17	11.82	88.55	5.2	33.69	7.9	25.6	1.92
A7	06 Jul 2020	18	11.86	88.88	5.2	33.70	7.9	25.6	1.56
A7	06 Jul 2020	19	11.63	89.76	5.1	33.69	7.9	25.6	1.61
A7	13 Jul 2020	1	21.58	83.01	8.6	33.71	8.3	23.4	1.27
A7	13 Jul 2020	2	21.45	83.02	8.5	33.73	8.3	23.4	1.26
A7	13 Jul 2020	3	21.06	82.84	8.4	33.74	8.3	23.5	1.35
A7	13 Jul 2020	4	20.29	82.34	8.3	33.81	8.3	23.8	1.58
A7	13 Jul 2020	5	18.95	81.46	8.5	33.81	8.3	24.1	1.87
A7	13 Jul 2020	6	18.59	80.46	8.5	33.74	8.3	24.2	2.36
A7	13 Jul 2020	7	18.34	79.79	8.4	33.73	8.2	24.2	2.83
A7	13 Jul 2020	8	17.45	79.13	8.3	33.81	8.2	24.5	3.25
A7	13 Jul 2020	9	16.69	77.77	8.2	33.76	8.2	24.6	4.06
A7	13 Jul 2020	10	15.75	76.46	7.8	33.81	8.2	24.9	4.89
A7	13 Jul 2020	11	14.78	74.67	7.4	33.74	8.1	25.1	6.08
A7	13 Jul 2020	12	14.97	75.30	7.1	33.72	8.1	25.0	7.59
A7	13 Jul 2020	13	14.04	76.42	6.7	33.73	8.1	25.2	7.94
A7	13 Jul 2020	14	13.92	78.84	6.5	33.69	8.1	25.2	7.66
A7	13 Jul 2020	15	13.75	80.76	6.4	33.76	8.1	25.3	6.93
A7	13 Jul 2020	16	13.54	83.18	6.1	33.71	8.0	25.3	6.00
A7	13 Jul 2020	17	13.09	84.78	5.8	33.78	8.0	25.4	4.71
A7	13 Jul 2020	18	12.51	86.92	5.5	33.74	8.0	25.5	4.04
A7	13 Jul 2020	19	12.42	88.55	5.3	33.73	8.0	25.5	3.21
A7	21 Jul 2020	1	14.86	79.35	7.4	33.64	8.1	25.0	3.26
A7	21 Jul 2020	2	14.72	79.88	7.4	33.66	8.1	25.0	3.31
A7	21 Jul 2020	3	14.42	79.90	7.3	33.73	8.1	25.1	3.35
A7	21 Jul 2020	4	13.56	78.22	7.2	33.77	8.1	25.3	3.69
A7	21 Jul 2020	5	12.90	76.79	7.0	33.78	8.0	25.5	4.22
A7	21 Jul 2020	6	12.71	77.92	6.8	33.71	8.0	25.5	5.11
A7	21 Jul 2020	7	12.61	79.59	6.4	33.70	8.0	25.5	6.12
A7	21 Jul 2020	8	12.48	80.93	6.1	33.71	8.0	25.5	6.41
A7	21 Jul 2020	9	12.27	82.34	5.9	33.72	7.9	25.5	6.48
A7	21 Jul 2020	10	12.12	83.85	5.7	33.70	7.9	25.6	6.18
A7	21 Jul 2020	11	11.99	85.04	5.5	33.71	7.9	25.6	5.56
A7	21 Jul 2020	12	11.92	86.03	5.4	33.70	7.9	25.6	4.81
A7	21 Jul 2020	13	11.91	86.71	5.3	33.68	7.9	25.6	4.11
A7	21 Jul 2020	14	11.92	86.58	5.3	33.68	7.9	25.6	3.24
A7	21 Jul 2020	15	11.89	86.45	5.2	33.69	7.9	25.6	2.71
A7	21 Jul 2020	16	11.74	87.09	5.2	33.70	7.9	25.6	2.72

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A7	21 Jul 2020	17	11.69	87.74	5.0	33.70	7.9	25.6	2.55
A7	21 Jul 2020	18	11.77	87.45	5.0	33.68	7.9	25.6	2.31
A7	21 Jul 2020	19	11.64	87.80	5.0	33.70	7.8	25.6	1.91
A7	21 Jul 2020	20	11.63	87.33	5.0	33.70	7.8	25.6	1.99
A7	28 Jul 2020	1	17.46	71.12	8.3	33.63	8.1	24.4	2.97
A7	28 Jul 2020	2	17.03	74.43	8.1	33.78	8.1	24.6	3.03
A7	28 Jul 2020	3	13.41	76.63	7.6	34.04	8.1	25.6	3.16
A7	28 Jul 2020	4	12.76	76.59	6.9	33.73	8.0	25.5	4.04
A7	28 Jul 2020	5	12.58	78.41	6.6	33.68	8.0	25.5	5.72
A7	28 Jul 2020	6	12.44	79.58	6.5	33.65	7.9	25.5	6.50
A7	28 Jul 2020	7	12.34	80.23	6.3	33.62	7.9	25.5	6.87
A7	28 Jul 2020	8	12.38	80.96	6.2	33.60	7.9	25.4	6.61
A7	28 Jul 2020	9	12.23	82.21	6.1	33.65	7.9	25.5	6.34
A7	28 Jul 2020	10	11.84	85.22	5.8	33.69	7.9	25.6	5.94
A7	28 Jul 2020	11	11.67	88.76	5.4	33.69	7.8	25.6	5.04
A7	28 Jul 2020	12	11.63	89.60	5.2	33.68	7.8	25.6	3.54
A7	28 Jul 2020	13	11.60	89.87	5.1	33.67	7.8	25.6	2.48
A7	28 Jul 2020	14	11.59	90.16	5.0	33.67	7.8	25.6	2.07
A7	28 Jul 2020	15	11.58	90.23	5.0	33.67	7.8	25.6	1.61
A7	28 Jul 2020	16	11.54	90.29	5.0	33.67	7.8	25.6	1.48
A7	28 Jul 2020	17	11.52	90.55	5.0	33.67	7.8	25.6	1.34
A7	28 Jul 2020	18	11.52	90.65	5.0	33.66	7.8	25.6	1.14
A7	28 Jul 2020	19	11.52	90.56	5.0	33.66	7.8	25.6	1.24
C4	06 Jul 2020	1	18.74	73.99	8.0	33.67	8.2	24.1	1.51
C4	06 Jul 2020	2	18.61	74.88	7.9	33.60	8.2	24.1	1.62
C4	06 Jul 2020	3	17.70	76.96	7.7	33.81	8.2	24.4	1.75
C4	06 Jul 2020	4	16.61	77.08	7.3	33.74	8.2	24.6	2.11
C4	06 Jul 2020	5	15.45	78.20	6.7	33.80	8.1	25.0	2.76
C4	06 Jul 2020	6	15.26	81.04	6.2	33.69	8.0	24.9	2.49
C4	06 Jul 2020	7	14.12	82.92	5.6	33.81	8.0	25.2	2.04
C4	06 Jul 2020	8	14.02	84.42	5.1	33.66	7.9	25.1	1.36
C4	06 Jul 2020	9	13.95	83.23	5.0	33.78	7.9	25.3	0.91
C4	06 Jul 2020	10	13.39	80.09	4.5	33.72	7.9	25.3	0.92
C4	06 Jul 2020	11	13.55	78.58	4.5	33.70	7.9	25.3	0.68
C4	06 Jul 2020	12	13.38	78.02	4.4	33.70	7.9	25.3	0.57
C4	13 Jul 2020	1	22.23	81.60	8.7	33.72	8.3	23.2	1.02
C4	13 Jul 2020	2	22.16	81.51	8.7	33.72	8.3	23.2	1.03
C4	13 Jul 2020	3	21.92	81.56	8.7	33.74	8.3	23.3	1.11
C4	13 Jul 2020	4	20.97	81.95	8.4	33.79	8.3	23.6	1.27
C4	13 Jul 2020	5	19.72	78.77	8.4	33.80	8.3	23.9	1.98
C4	13 Jul 2020	6	17.91	79.46	7.9	33.90	8.3	24.4	2.47
C4	13 Jul 2020	7	15.20	79.27	7.2	33.91	8.2	25.1	3.01
C4	13 Jul 2020	8	14.46	81.44	7.3	33.79	8.1	25.2	2.93
C4	13 Jul 2020	9	13.73	85.23	5.9	33.77	8.1	25.3	2.15
C4	13 Jul 2020	10	13.04	85.82	4.2	33.83	8.0	25.5	1.65
C4	21 Jul 2020	1	16.01	70.35	7.6	33.62	8.1	24.7	2.79
C4	21 Jul 2020	2	15.87	73.52	7.5	33.68	8.1	24.8	2.74
C4	21 Jul 2020	3	15.43	68.88	7.2	33.68	8.1	24.9	2.77
C4	21 Jul 2020	4	14.28	68.26	6.6	33.87	8.1	25.3	2.96
C4	21 Jul 2020	5	13.20	73.09	5.7	33.81	8.0	25.4	3.10
C4	21 Jul 2020	6	12.71	76.82	4.9	33.77	7.9	25.5	3.57

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C4	21 Jul 2020	7	12.43	81.41	4.3	33.74	7.9	25.5	4.30
C4	21 Jul 2020	8	12.30	84.82	4.0	33.72	7.8	25.5	4.12
C4	21 Jul 2020	9	12.27	79.24	3.6	33.70	7.8	25.5	2.92
C4	21 Jul 2020	10	12.28	70.62	3.4	33.69	7.8	25.5	2.06
C4	28 Jul 2020	1	18.04	81.93	8.0	33.61	8.2	24.2	1.66
C4	28 Jul 2020	2	17.89	81.59	8.1	33.69	8.1	24.3	1.42
C4	28 Jul 2020	3	17.42	79.29	8.0	33.80	8.1	24.5	1.32
C4	28 Jul 2020	4	15.79	79.25	7.8	34.13	8.1	25.1	1.27
C4	28 Jul 2020	5	13.97	76.57	7.2	34.10	8.0	25.5	1.32
C4	28 Jul 2020	6	13.50	76.31	6.5	33.95	7.9	25.5	1.49
C4	28 Jul 2020	7	13.28	79.60	5.7	33.86	7.9	25.5	2.17
C4	28 Jul 2020	8	13.06	85.31	4.9	33.81	7.8	25.5	3.32
C4	28 Jul 2020	9	12.98	86.61	4.3	33.78	7.8	25.5	2.01
C5	06 Jul 2020	1	18.63	78.39	8.1	33.67	8.2	24.1	1.77
C5	06 Jul 2020	2	18.49	78.48	8.0	33.68	8.2	24.1	1.75
C5	06 Jul 2020	3	17.44	78.33	7.9	33.82	8.2	24.5	1.90
C5	06 Jul 2020	4	16.68	77.94	7.7	33.74	8.2	24.6	2.35
C5	06 Jul 2020	5	15.76	77.80	7.2	33.81	8.1	24.9	3.28
C5	06 Jul 2020	6	14.90	80.23	6.5	33.80	8.1	25.1	3.31
C5	06 Jul 2020	7	14.22	84.65	6.1	33.78	8.0	25.2	2.28
C5	06 Jul 2020	8	13.44	85.90	5.9	33.78	8.0	25.4	1.73
C5	06 Jul 2020	9	13.11	86.46	5.7	33.74	8.0	25.4	1.33
C5	06 Jul 2020	10	13.17	86.59	5.6	33.70	8.0	25.4	1.18
C5	13 Jul 2020	1	22.13	81.20	8.7	33.72	8.3	23.2	1.02
C5	13 Jul 2020	2	22.10	81.24	8.7	33.72	8.3	23.2	1.03
C5	13 Jul 2020	3	21.98	81.22	8.7	33.73	8.3	23.3	1.07
C5	13 Jul 2020	4	21.50	81.26	8.6	33.78	8.3	23.4	1.21
C5	13 Jul 2020	5	19.85	81.37	8.7	33.90	8.3	24.0	1.35
C5	13 Jul 2020	6	18.18	81.81	8.8	33.89	8.3	24.4	1.61
C5	13 Jul 2020	7	17.03	80.19	8.4	33.83	8.3	24.6	2.19
C5	13 Jul 2020	8	16.00	78.54	7.7	33.87	8.2	24.9	3.13
C5	13 Jul 2020	9	15.13	81.15	7.3	33.72	8.2	25.0	3.29
C5	21 Jul 2020	1	16.03	79.89	7.8	33.66	8.1	24.7	2.22
C5	21 Jul 2020	2	15.41	77.09	7.7	33.78	8.1	24.9	2.48
C5	21 Jul 2020	3	14.20	73.86	7.5	33.81	8.1	25.2	2.47
C5	21 Jul 2020	4	13.52	73.46	7.2	33.77	8.1	25.3	3.08
C5	21 Jul 2020	5	13.25	72.88	6.8	33.73	8.1	25.4	5.06
C5	21 Jul 2020	6	12.93	77.15	6.2	33.72	8.0	25.4	7.02
C5	21 Jul 2020	7	12.79	81.34	5.8	33.70	8.0	25.4	7.27
C5	21 Jul 2020	8	12.60	81.90	5.4	33.72	7.9	25.5	6.57
C5	21 Jul 2020	9	12.52	79.74	5.1	33.71	7.9	25.5	5.18
C5	21 Jul 2020	10	12.50	72.96	4.9	33.70	7.9	25.5	3.75
C5	28 Jul 2020	1	17.77	81.61	8.2	33.43	8.2	24.1	1.26
C5	28 Jul 2020	2	17.69	81.49	8.4	33.61	8.2	24.3	1.17
C5	28 Jul 2020	3	16.99	80.78	8.3	33.94	8.1	24.7	1.19
C5	28 Jul 2020	4	14.63	80.27	8.1	34.29	8.1	25.5	1.29
C5	28 Jul 2020	5	13.46	77.90	7.1	33.73	8.0	25.3	1.70
C5	28 Jul 2020	6	13.23	84.07	6.4	33.94	7.9	25.5	3.01
C5	28 Jul 2020	7	12.73	86.59	6.0	33.77	7.9	25.5	3.94
C5	28 Jul 2020	8	12.51	86.18	5.9	33.73	7.9	25.5	3.37

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C5	28 Jul 2020	9	12.42	86.18	5.9	33.67	7.9	25.5	2.89
C5	28 Jul 2020	10	12.44	86.63	5.8	33.66	7.9	25.5	2.77
C6	06 Jul 2020	1	19.34	75.73	8.0	33.68	8.2	23.9	1.54
C6	06 Jul 2020	2	19.17	75.54	8.0	33.71	8.2	24.0	1.58
C6	06 Jul 2020	3	18.32	74.59	7.8	33.78	8.2	24.3	1.88
C6	06 Jul 2020	4	17.24	76.00	7.4	33.78	8.2	24.5	2.15
C6	06 Jul 2020	5	16.31	77.42	7.1	33.80	8.1	24.8	2.16
C6	06 Jul 2020	6	15.39	78.78	6.8	33.81	8.1	25.0	2.19
C6	06 Jul 2020	7	14.57	80.57	6.2	33.78	8.1	25.1	2.19
C6	06 Jul 2020	8	14.14	83.13	5.8	33.75	8.0	25.2	1.81
C6	06 Jul 2020	9	13.64	82.28	5.5	33.72	8.0	25.3	1.22
C6	13 Jul 2020	1	22.25	79.60	8.7	33.72	8.3	23.2	1.09
C6	13 Jul 2020	2	22.20	79.62	8.7	33.73	8.3	23.2	1.12
C6	13 Jul 2020	3	22.07	78.80	8.7	33.73	8.3	23.2	1.21
C6	13 Jul 2020	4	21.62	79.44	8.9	33.76	8.3	23.4	1.36
C6	13 Jul 2020	5	21.20	79.84	9.0	33.76	8.3	23.5	1.65
C6	13 Jul 2020	6	19.24	79.34	8.9	33.90	8.3	24.1	1.90
C6	13 Jul 2020	7	17.45	76.52	8.8	33.82	8.3	24.5	2.98
C6	13 Jul 2020	8	15.76	76.70	7.7	33.96	8.2	25.0	4.37
C6	13 Jul 2020	9	14.28	81.07	7.0	33.85	8.1	25.2	4.67
C6	21 Jul 2020	1	15.46	68.94	7.1	33.67	8.1	24.8	4.20
C6	21 Jul 2020	2	14.75	68.86	7.0	33.74	8.1	25.1	4.25
C6	21 Jul 2020	3	14.47	69.06	6.9	33.70	8.1	25.1	4.76
C6	21 Jul 2020	4	14.26	69.16	6.8	33.70	8.1	25.1	5.95
C6	21 Jul 2020	5	13.74	69.63	6.7	33.73	8.1	25.3	7.11
C6	21 Jul 2020	6	13.42	72.10	6.3	33.71	8.0	25.3	7.93
C6	21 Jul 2020	7	13.26	75.66	6.0	33.72	8.0	25.3	8.36
C6	21 Jul 2020	8	12.90	79.55	5.6	33.71	8.0	25.4	7.83
C6	21 Jul 2020	9	12.37	76.99	5.0	33.74	7.9	25.5	5.72
C6	21 Jul 2020	10	12.50	74.02	4.5	33.68	7.9	25.5	3.43
C6	28 Jul 2020	1	17.33	77.69	7.8	33.64	8.1	24.4	1.61
C6	28 Jul 2020	2	17.09	78.21	7.8	33.68	8.1	24.5	1.67
C6	28 Jul 2020	3	15.73	78.06	7.8	33.90	8.1	25.0	1.70
C6	28 Jul 2020	4	13.78	76.94	7.4	33.88	8.1	25.4	2.10
C6	28 Jul 2020	5	13.02	76.27	6.7	33.78	8.0	25.4	3.22
C6	28 Jul 2020	6	12.68	81.73	6.3	33.70	7.9	25.4	4.26
C6	28 Jul 2020	7	12.54	85.54	6.1	33.65	7.9	25.4	4.26
C6	28 Jul 2020	8	12.52	86.37	5.9	33.65	7.9	25.4	3.66
C6	28 Jul 2020	9	12.53	86.73	5.7	33.65	7.9	25.4	3.08
C7	06 Jul 2020	1	19.89	77.47	8.2	33.60	8.2	23.7	1.24
C7	06 Jul 2020	2	19.26	78.22	8.2	33.71	8.2	24.0	1.42
C7	06 Jul 2020	3	18.21	76.63	8.5	33.85	8.2	24.3	1.75
C7	06 Jul 2020	4	17.64	75.07	8.5	33.70	8.2	24.4	2.45
C7	06 Jul 2020	5	15.73	74.73	7.6	33.88	8.2	24.9	3.51
C7	06 Jul 2020	6	15.40	75.80	7.2	33.72	8.1	24.9	4.61
C7	06 Jul 2020	7	14.32	75.01	6.8	33.78	8.1	25.2	5.50
C7	06 Jul 2020	8	14.17	75.66	6.7	33.71	8.1	25.2	6.33
C7	06 Jul 2020	9	14.05	76.41	6.5	33.71	8.1	25.2	6.90
C7	06 Jul 2020	10	13.72	77.08	6.2	33.73	8.0	25.3	6.95
C7	06 Jul 2020	11	13.24	79.49	5.9	33.77	8.0	25.4	6.34

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C7	06 Jul 2020	12	12.90	81.52	5.6	33.73	8.0	25.4	6.03
C7	06 Jul 2020	13	12.88	82.97	5.5	33.71	8.0	25.4	5.11
C7	06 Jul 2020	14	12.83	83.21	5.4	33.72	8.0	25.4	4.64
C7	06 Jul 2020	15	12.38	82.95	5.2	33.76	7.9	25.6	4.65
C7	06 Jul 2020	16	12.23	83.92	5.0	33.73	7.9	25.6	4.68
C7	06 Jul 2020	17	12.20	86.69	4.9	33.73	7.9	25.6	4.04
C7	06 Jul 2020	18	12.25	87.77	4.8	33.72	7.9	25.5	2.71
C7	13 Jul 2020	1	22.32	81.91	8.6	33.70	8.3	23.1	1.20
C7	13 Jul 2020	2	22.29	81.90	8.6	33.71	8.3	23.2	1.22
C7	13 Jul 2020	3	22.04	81.85	8.8	33.73	8.3	23.2	1.31
C7	13 Jul 2020	4	21.74	81.56	8.9	33.72	8.3	23.3	1.44
C7	13 Jul 2020	5	21.40	80.49	9.0	33.73	8.3	23.4	1.59
C7	13 Jul 2020	6	20.77	79.56	9.3	33.74	8.3	23.6	1.91
C7	13 Jul 2020	7	20.64	77.78	9.4	33.70	8.3	23.6	2.71
C7	13 Jul 2020	8	20.38	77.23	9.4	33.73	8.3	23.7	3.45
C7	13 Jul 2020	9	19.94	77.18	9.2	33.74	8.3	23.8	3.89
C7	13 Jul 2020	10	17.51	74.56	9.0	33.86	8.3	24.5	4.18
C7	13 Jul 2020	11	16.31	75.85	8.7	33.79	8.3	24.7	4.79
C7	13 Jul 2020	12	15.39	77.48	8.0	33.79	8.2	24.9	4.78
C7	13 Jul 2020	13	14.51	79.40	7.2	33.78	8.2	25.1	4.52
C7	13 Jul 2020	14	14.07	79.89	6.8	33.73	8.1	25.2	4.68
C7	13 Jul 2020	15	13.68	79.99	6.4	33.72	8.1	25.3	5.15
C7	13 Jul 2020	16	13.35	80.66	5.9	33.74	8.1	25.3	5.39
C7	13 Jul 2020	17	12.79	85.19	5.3	33.73	8.0	25.4	4.91
C7	13 Jul 2020	18	12.75	88.03	5.4	33.72	8.0	25.4	3.77
C7	21 Jul 2020	1	15.71	75.10	7.5	33.66	8.1	24.8	3.76
C7	21 Jul 2020	2	15.08	75.32	7.6	33.74	8.1	25.0	3.88
C7	21 Jul 2020	3	14.46	74.87	7.4	33.75	8.1	25.1	3.93
C7	21 Jul 2020	4	13.89	73.04	7.3	33.74	8.1	25.2	4.36
C7	21 Jul 2020	5	13.71	71.58	7.1	33.71	8.1	25.3	5.16
C7	21 Jul 2020	6	13.63	71.03	6.8	33.70	8.0	25.3	7.18
C7	21 Jul 2020	7	13.42	71.85	6.5	33.72	8.0	25.3	9.08
C7	21 Jul 2020	8	13.07	73.15	6.1	33.73	8.0	25.4	9.89
C7	21 Jul 2020	9	12.68	74.50	5.8	33.73	8.0	25.5	10.05
C7	21 Jul 2020	10	12.43	76.74	5.6	33.74	7.9	25.5	9.86
C7	21 Jul 2020	11	12.35	79.50	5.3	33.72	7.9	25.5	8.97
C7	21 Jul 2020	12	12.29	80.91	5.0	33.71	7.9	25.5	7.88
C7	21 Jul 2020	13	12.24	82.43	4.9	33.71	7.9	25.5	6.70
C7	21 Jul 2020	14	12.21	82.97	4.8	33.70	7.9	25.5	5.91
C7	21 Jul 2020	15	12.17	83.91	4.7	33.71	7.9	25.6	5.77
C7	21 Jul 2020	16	11.79	85.59	4.6	33.78	7.9	25.7	5.31
C7	21 Jul 2020	17	11.62	87.19	4.4	33.74	7.8	25.7	4.45
C7	21 Jul 2020	18	11.55	87.14	4.3	33.75	7.8	25.7	3.42
C7	28 Jul 2020	1	16.76	78.26	8.3	33.64	8.1	24.5	2.21
C7	28 Jul 2020	2	14.30	78.22	7.9	34.19	8.1	25.5	2.15
C7	28 Jul 2020	3	12.85	77.29	7.0	33.85	8.0	25.5	2.38
C7	28 Jul 2020	4	12.38	74.97	6.6	33.73	7.9	25.5	3.45
C7	28 Jul 2020	5	12.39	76.07	6.4	33.66	7.9	25.5	5.24
C7	28 Jul 2020	6	12.43	79.18	6.1	33.63	7.9	25.4	6.29
C7	28 Jul 2020	7	12.44	80.92	5.9	33.63	7.9	25.4	6.45
C7	28 Jul 2020	8	12.37	81.91	5.8	33.66	7.9	25.5	6.39
C7	28 Jul 2020	9	12.18	84.03	5.6	33.66	7.8	25.5	5.84

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C7	28 Jul 2020	10	12.00	85.46	5.5	33.67	7.8	25.6	5.13
C7	28 Jul 2020	11	11.92	86.22	5.4	33.65	7.8	25.6	4.59
C7	28 Jul 2020	12	11.94	86.45	5.2	33.64	7.8	25.5	3.97
C7	28 Jul 2020	13	11.85	86.98	5.2	33.65	7.8	25.6	3.51
C7	28 Jul 2020	14	11.84	88.02	5.1	33.65	7.8	25.6	3.09
C7	28 Jul 2020	15	11.81	88.41	5.1	33.66	7.8	25.6	2.72
C7	28 Jul 2020	16	11.74	88.60	5.0	33.66	7.8	25.6	2.59
C7	28 Jul 2020	17	11.61	89.10	4.9	33.68	7.8	25.6	2.38
C7	28 Jul 2020	18	11.60	89.60	4.8	33.68	7.8	25.6	2.17
C8	06 Jul 2020	1	19.01	75.59	8.6	33.67	8.3	24.0	1.76
C8	06 Jul 2020	2	18.80	75.53	8.6	33.72	8.3	24.1	1.79
C8	06 Jul 2020	3	18.28	75.06	8.8	33.72	8.3	24.2	1.97
C8	06 Jul 2020	4	17.35	72.54	8.6	33.80	8.2	24.5	3.15
C8	06 Jul 2020	5	16.09	73.13	8.1	33.81	8.2	24.8	4.56
C8	06 Jul 2020	6	15.47	73.76	7.4	33.77	8.1	24.9	5.56
C8	06 Jul 2020	7	14.87	75.12	7.1	33.76	8.1	25.0	6.25
C8	06 Jul 2020	8	14.42	75.99	6.8	33.75	8.1	25.1	6.54
C8	06 Jul 2020	9	14.36	76.90	6.7	33.70	8.1	25.1	6.57
C8	06 Jul 2020	10	13.96	78.01	6.4	33.73	8.1	25.2	6.42
C8	06 Jul 2020	11	13.81	79.35	6.2	33.72	8.0	25.2	6.12
C8	06 Jul 2020	12	13.55	79.90	6.0	33.72	8.0	25.3	5.52
C8	06 Jul 2020	13	13.54	80.40	5.9	33.69	8.0	25.3	5.38
C8	06 Jul 2020	14	13.31	81.15	5.7	33.73	8.0	25.3	5.46
C8	06 Jul 2020	15	12.97	82.03	5.5	33.75	8.0	25.4	5.11
C8	06 Jul 2020	16	12.86	82.83	5.3	33.73	8.0	25.4	4.54
C8	06 Jul 2020	17	12.48	86.12	5.1	33.75	7.9	25.5	3.76
C8	06 Jul 2020	18	12.37	86.89	4.9	33.72	7.9	25.5	2.86
C8	06 Jul 2020	19	12.37	86.47	4.8	33.72	7.9	25.5	2.00
C8	13 Jul 2020	1	22.01	80.00	8.6	33.70	8.3	23.2	1.49
C8	13 Jul 2020	2	21.98	80.07	8.6	33.72	8.3	23.2	1.52
C8	13 Jul 2020	3	21.85	79.87	8.6	33.71	8.3	23.3	1.57
C8	13 Jul 2020	4	21.14	79.67	8.9	33.79	8.3	23.5	1.74
C8	13 Jul 2020	5	20.18	78.73	9.2	33.80	8.3	23.8	2.12
C8	13 Jul 2020	6	18.27	75.68	9.4	33.85	8.3	24.3	3.15
C8	13 Jul 2020	7	17.88	74.56	9.4	33.71	8.3	24.3	4.88
C8	13 Jul 2020	8	17.68	75.48	9.2	33.71	8.3	24.4	5.89
C8	13 Jul 2020	9	16.71	76.40	8.7	33.80	8.3	24.7	5.96
C8	13 Jul 2020	10	15.59	76.89	8.2	33.78	8.2	24.9	5.76
C8	13 Jul 2020	11	14.76	77.88	7.5	33.78	8.2	25.1	5.26
C8	13 Jul 2020	12	14.52	79.12	7.0	33.69	8.1	25.1	4.94
C8	13 Jul 2020	13	13.59	79.52	6.4	33.83	8.1	25.4	4.78
C8	13 Jul 2020	14	13.04	79.98	5.8	33.75	8.0	25.4	5.07
C8	13 Jul 2020	15	12.75	80.14	5.3	33.74	8.0	25.5	5.58
C8	13 Jul 2020	16	12.48	83.21	5.1	33.74	8.0	25.5	5.43
C8	13 Jul 2020	17	12.39	85.77	4.9	33.71	7.9	25.5	4.59
C8	13 Jul 2020	18	12.36	85.97	4.8	33.71	7.9	25.5	3.61
C8	13 Jul 2020	19	12.37	85.95	4.8	33.70	7.9	25.5	3.27
C8	21 Jul 2020	1	16.15	79.11	7.4	33.62	8.1	24.7	2.51
C8	21 Jul 2020	2	16.00	79.33	7.3	33.69	8.1	24.7	2.52
C8	21 Jul 2020	3	14.84	78.51	7.2	33.81	8.1	25.1	2.57
C8	21 Jul 2020	4	13.98	77.35	7.2	33.77	8.1	25.2	2.75
C8	21 Jul 2020	5	13.27	74.15	7.0	33.76	8.1	25.4	3.83

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma\text{-t}$ )	Chlor ( $\mu\text{g/L}$ )
C8	21 Jul 2020	6	13.01	71.03	6.6	33.73	8.0	25.4	5.39
C8	21 Jul 2020	7	12.85	72.46	6.2	33.71	8.0	25.4	7.39
C8	21 Jul 2020	8	12.75	75.15	5.8	33.71	8.0	25.4	9.11
C8	21 Jul 2020	9	12.62	77.29	5.6	33.71	8.0	25.5	9.30
C8	21 Jul 2020	10	12.37	78.91	5.4	33.73	7.9	25.5	8.62
C8	21 Jul 2020	11	12.02	80.99	5.1	33.75	7.9	25.6	8.38
C8	21 Jul 2020	12	11.95	81.31	4.9	33.72	7.9	25.6	7.22
C8	21 Jul 2020	13	11.83	80.83	4.8	33.73	7.9	25.6	6.73
C8	21 Jul 2020	14	11.70	82.39	4.6	33.74	7.9	25.7	6.78
C8	21 Jul 2020	15	11.68	86.56	4.5	33.73	7.8	25.7	6.70
C8	21 Jul 2020	16	11.58	87.53	4.4	33.74	7.8	25.7	5.64
C8	21 Jul 2020	17	11.51	88.07	4.3	33.73	7.8	25.7	4.47
C8	21 Jul 2020	18	11.49	88.46	4.2	33.73	7.8	25.7	3.68
C8	21 Jul 2020	19	11.50	88.44	4.2	33.73	7.8	25.7	2.85
C8	28 Jul 2020	1	16.14	72.92	8.3	33.66	8.1	24.7	3.65
C8	28 Jul 2020	2	14.54	72.67	7.7	33.79	8.1	25.1	4.22
C8	28 Jul 2020	3	12.92	73.64	7.1	33.81	8.0	25.5	4.92
C8	28 Jul 2020	4	12.43	76.89	6.5	33.70	8.0	25.5	5.66
C8	28 Jul 2020	5	12.22	81.26	6.1	33.67	7.9	25.5	5.79
C8	28 Jul 2020	6	12.13	83.94	5.8	33.66	7.9	25.5	5.59
C8	28 Jul 2020	7	12.03	86.58	5.6	33.66	7.9	25.5	4.84
C8	28 Jul 2020	8	11.93	87.68	5.4	33.66	7.9	25.6	4.03
C8	28 Jul 2020	9	11.89	87.93	5.3	33.66	7.8	25.6	3.12
C8	28 Jul 2020	10	11.76	88.22	5.2	33.67	7.8	25.6	2.68
C8	28 Jul 2020	11	11.72	88.48	5.1	33.66	7.8	25.6	2.55
C8	28 Jul 2020	12	11.72	88.97	5.0	33.66	7.8	25.6	2.33
C8	28 Jul 2020	13	11.73	89.08	5.0	33.66	7.8	25.6	2.09
C8	28 Jul 2020	14	11.71	89.18	5.0	33.66	7.8	25.6	2.04
C8	28 Jul 2020	15	11.71	89.30	5.0	33.66	7.8	25.6	1.95
C8	28 Jul 2020	16	11.71	89.29	4.9	33.66	7.8	25.6	1.85
C8	28 Jul 2020	17	11.69	89.50	4.9	33.66	7.8	25.6	1.85
C8	28 Jul 2020	18	11.69	89.55	4.9	33.66	7.8	25.6	1.80
C8	28 Jul 2020	19	11.70	89.64	4.9	33.66	7.8	25.6	1.67

NA = not available

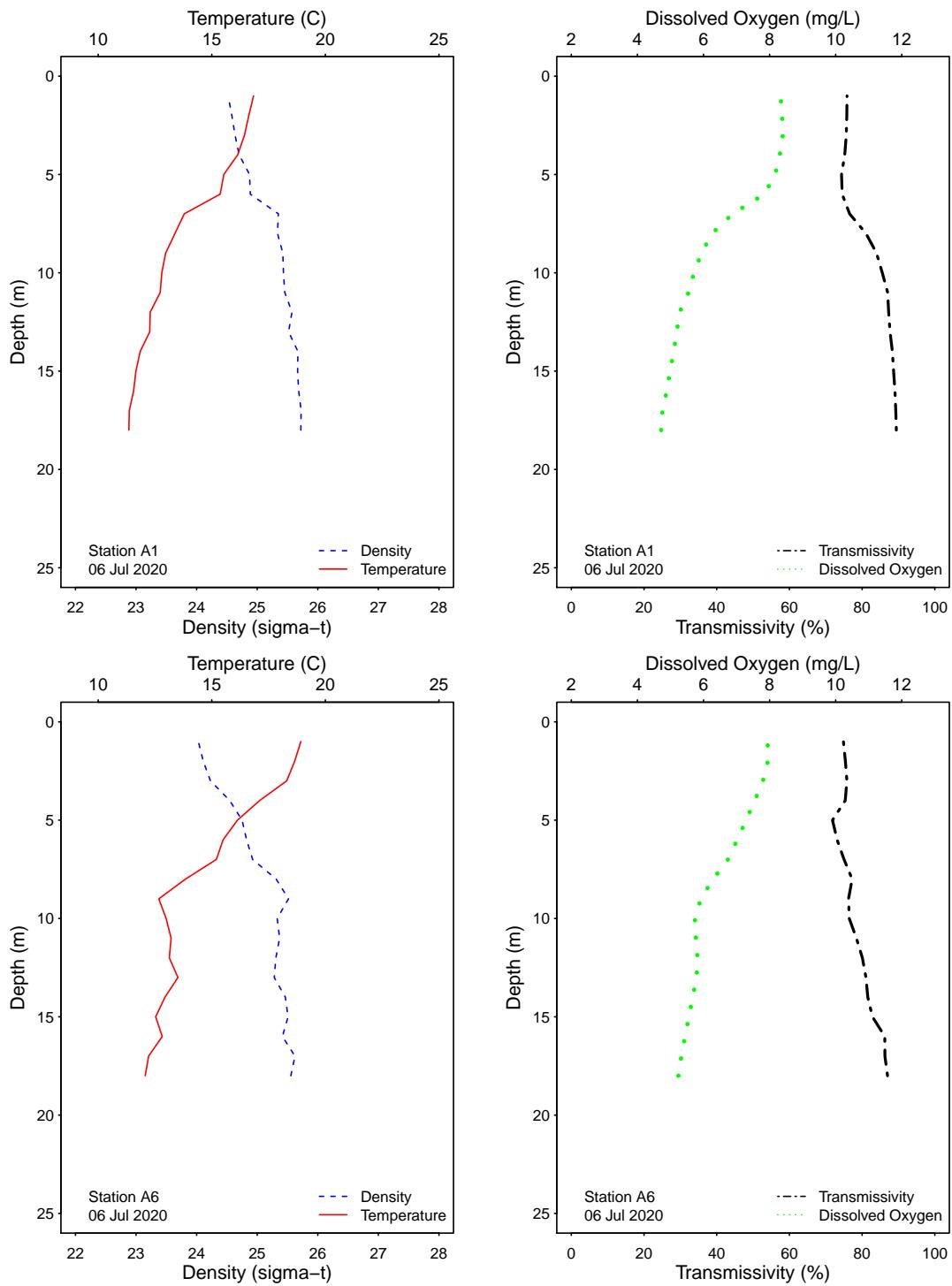


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

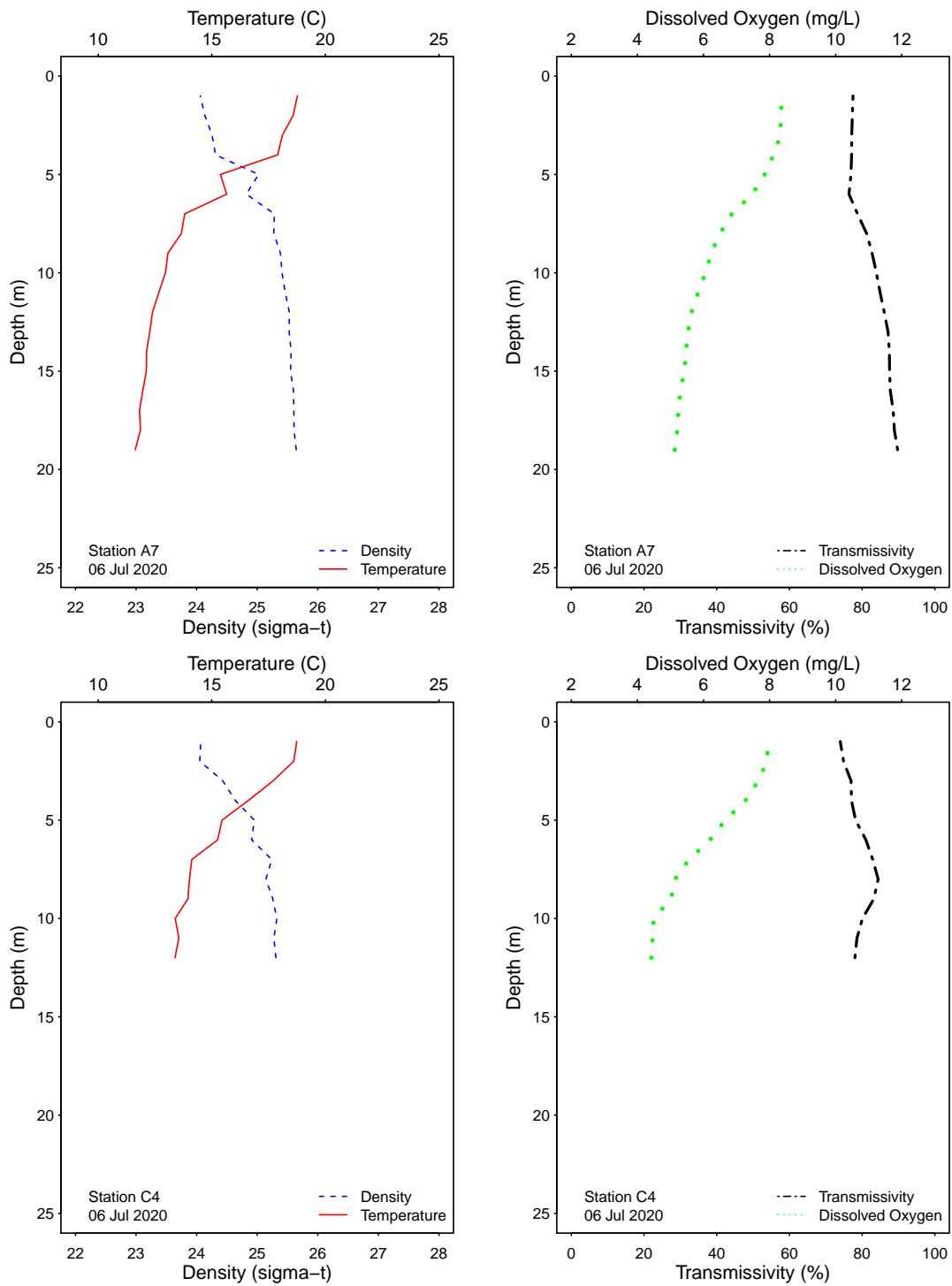


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

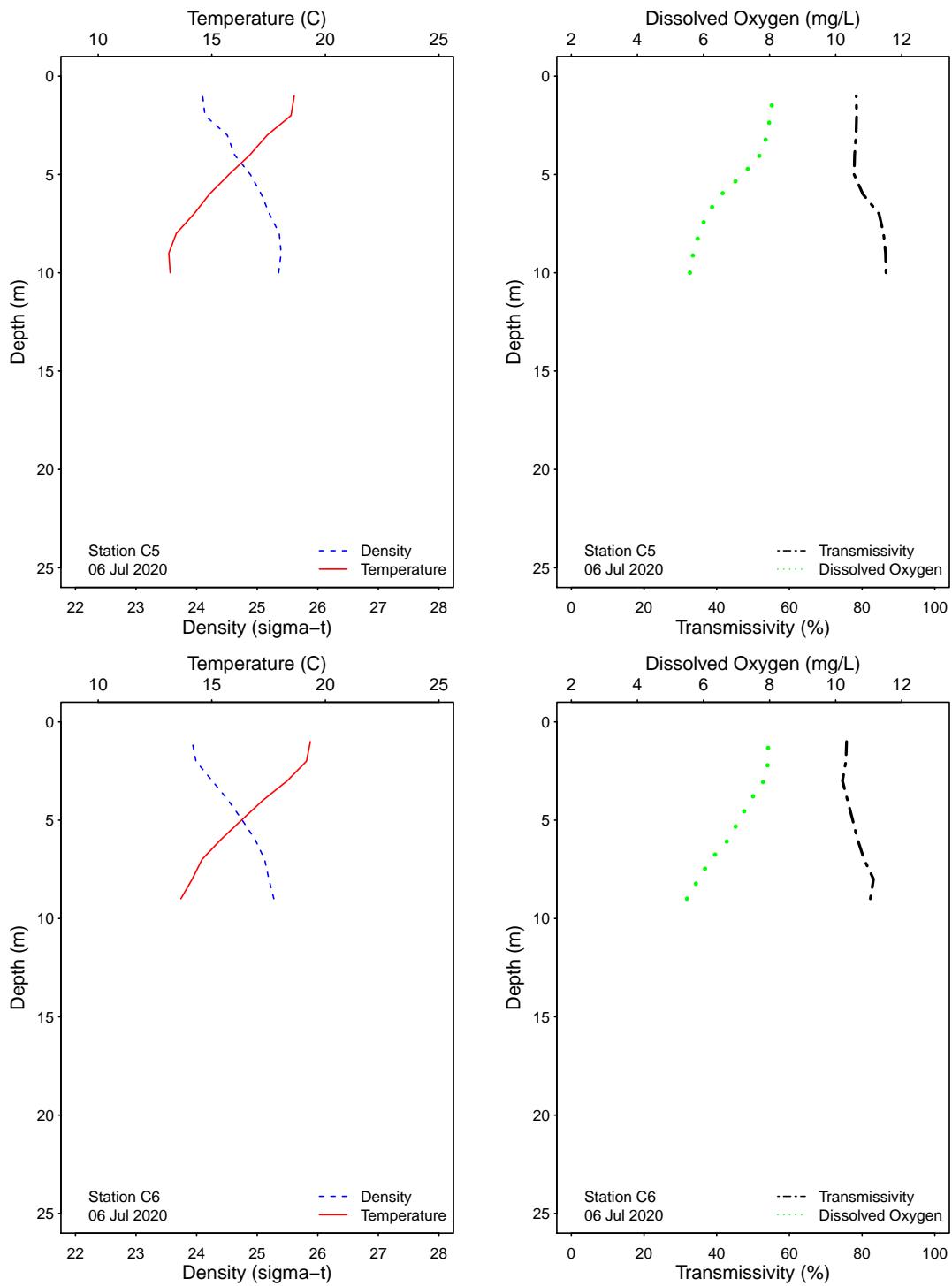


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

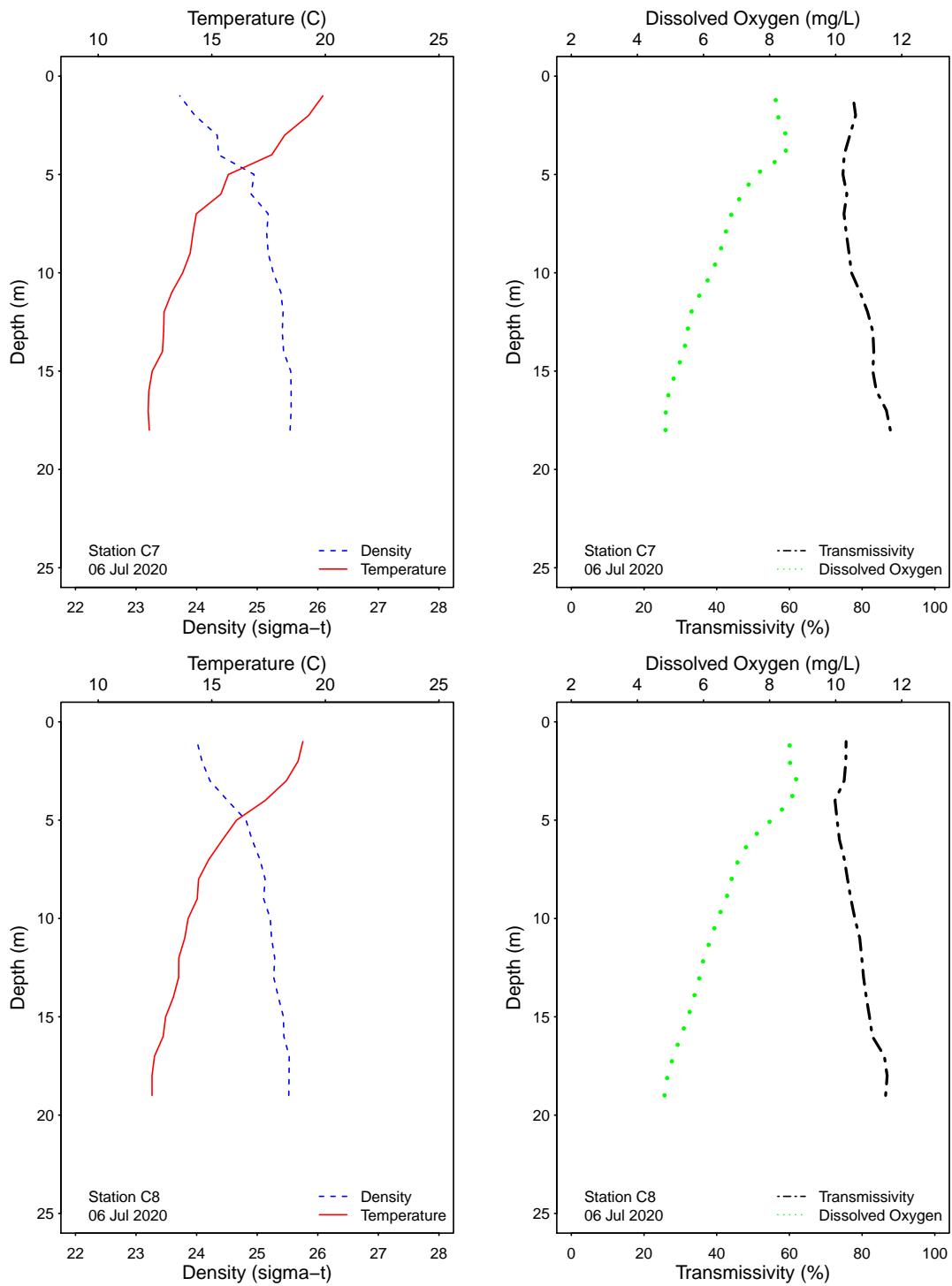


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

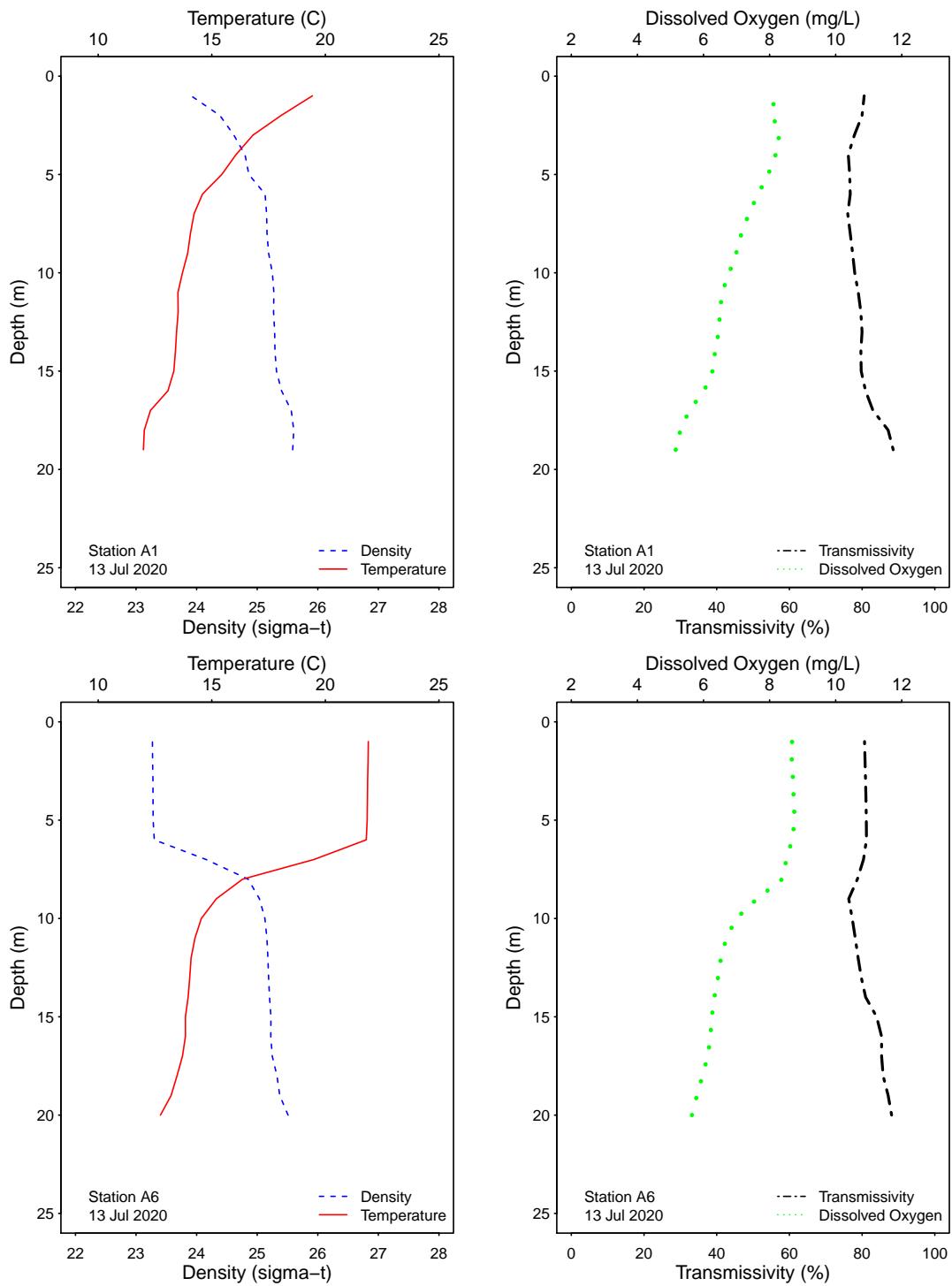


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

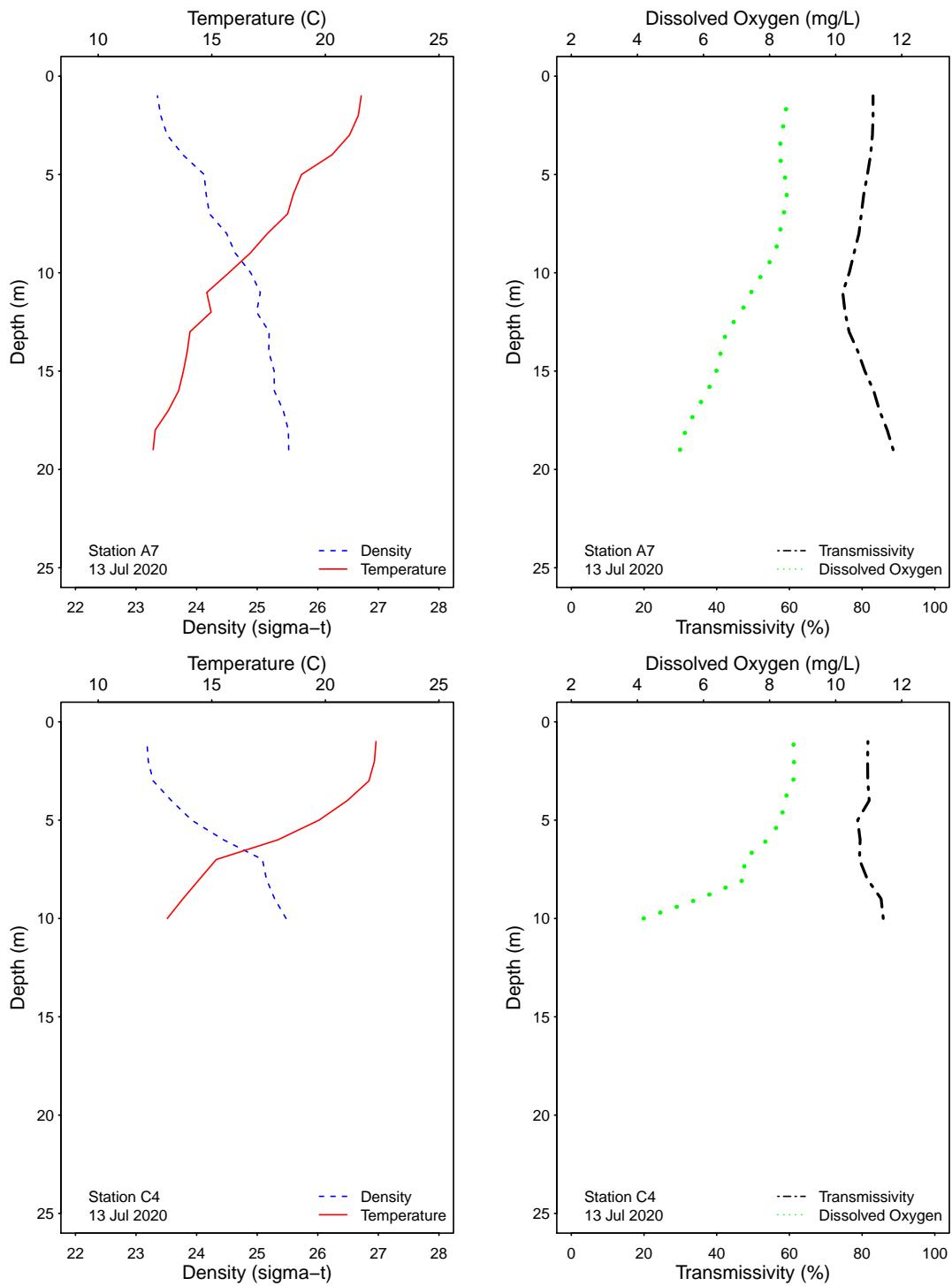


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

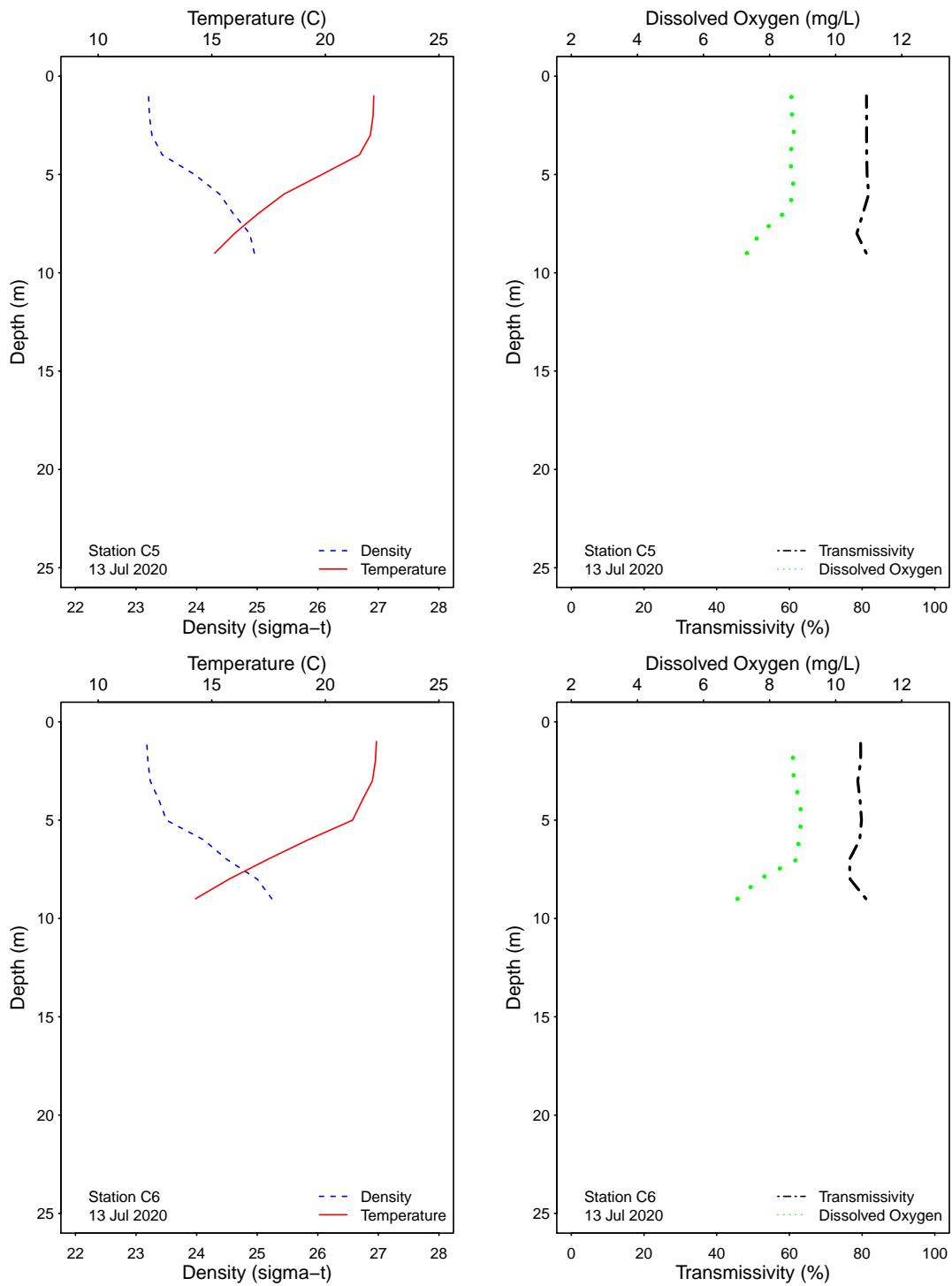


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

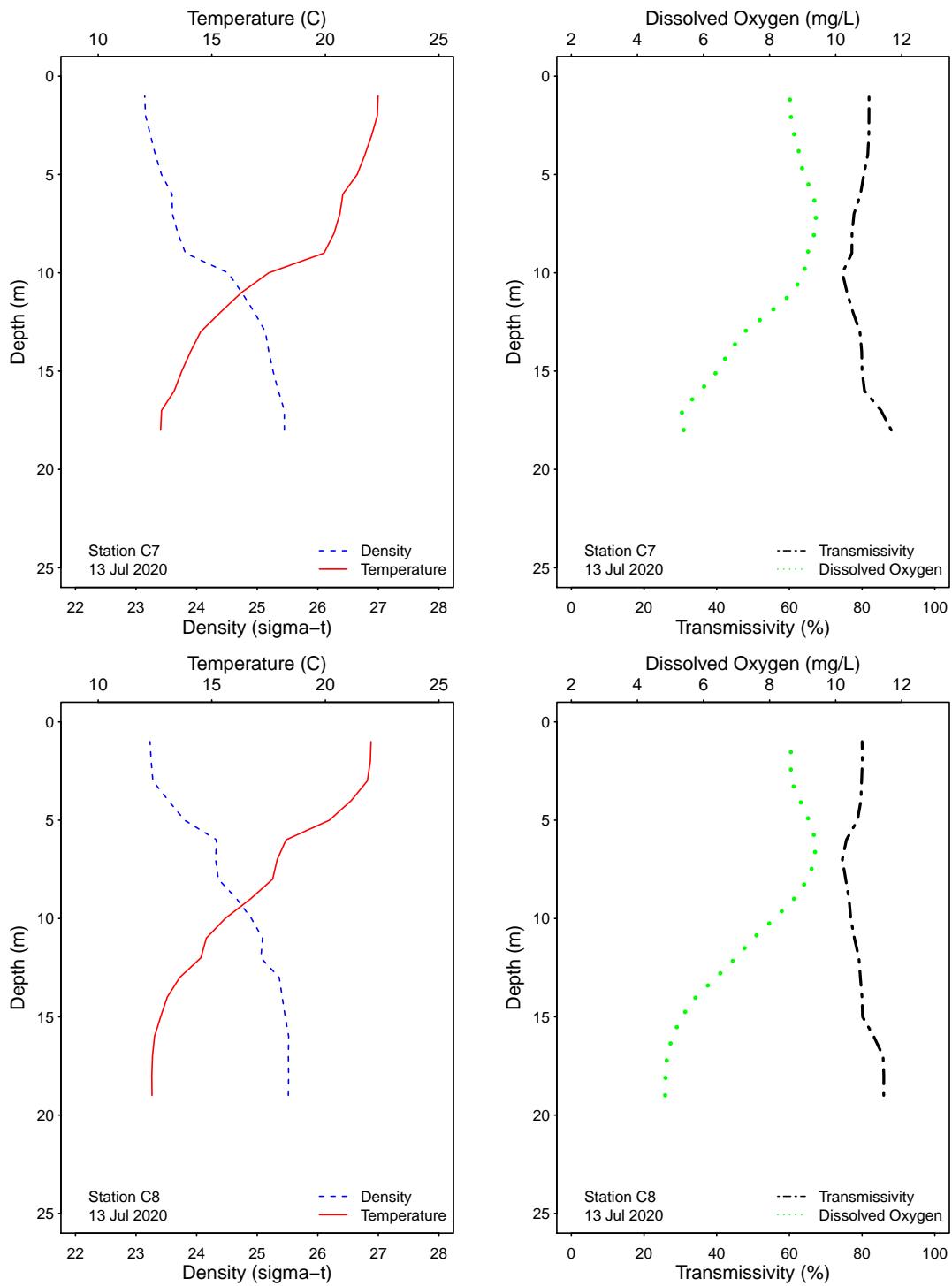


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

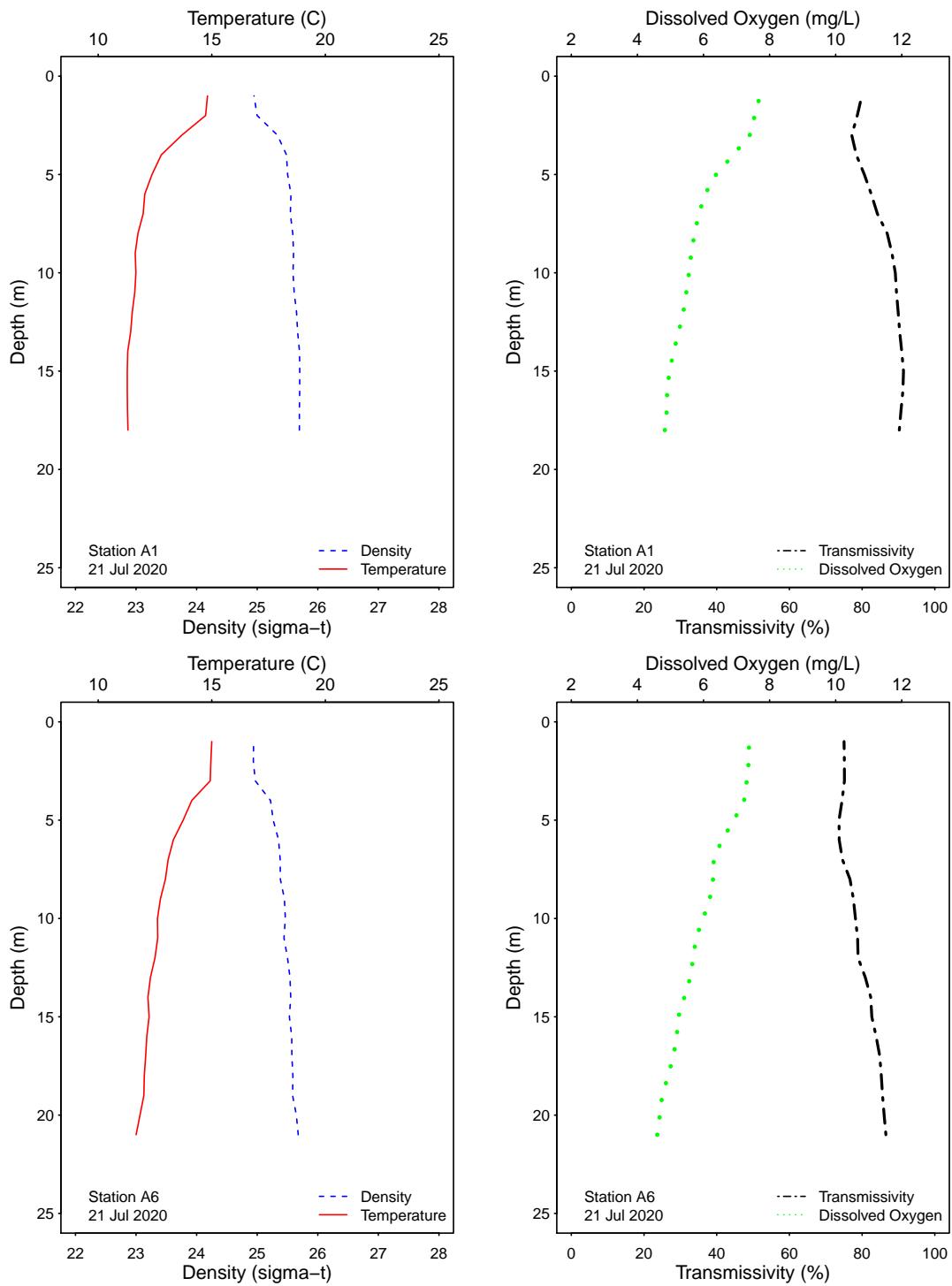


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

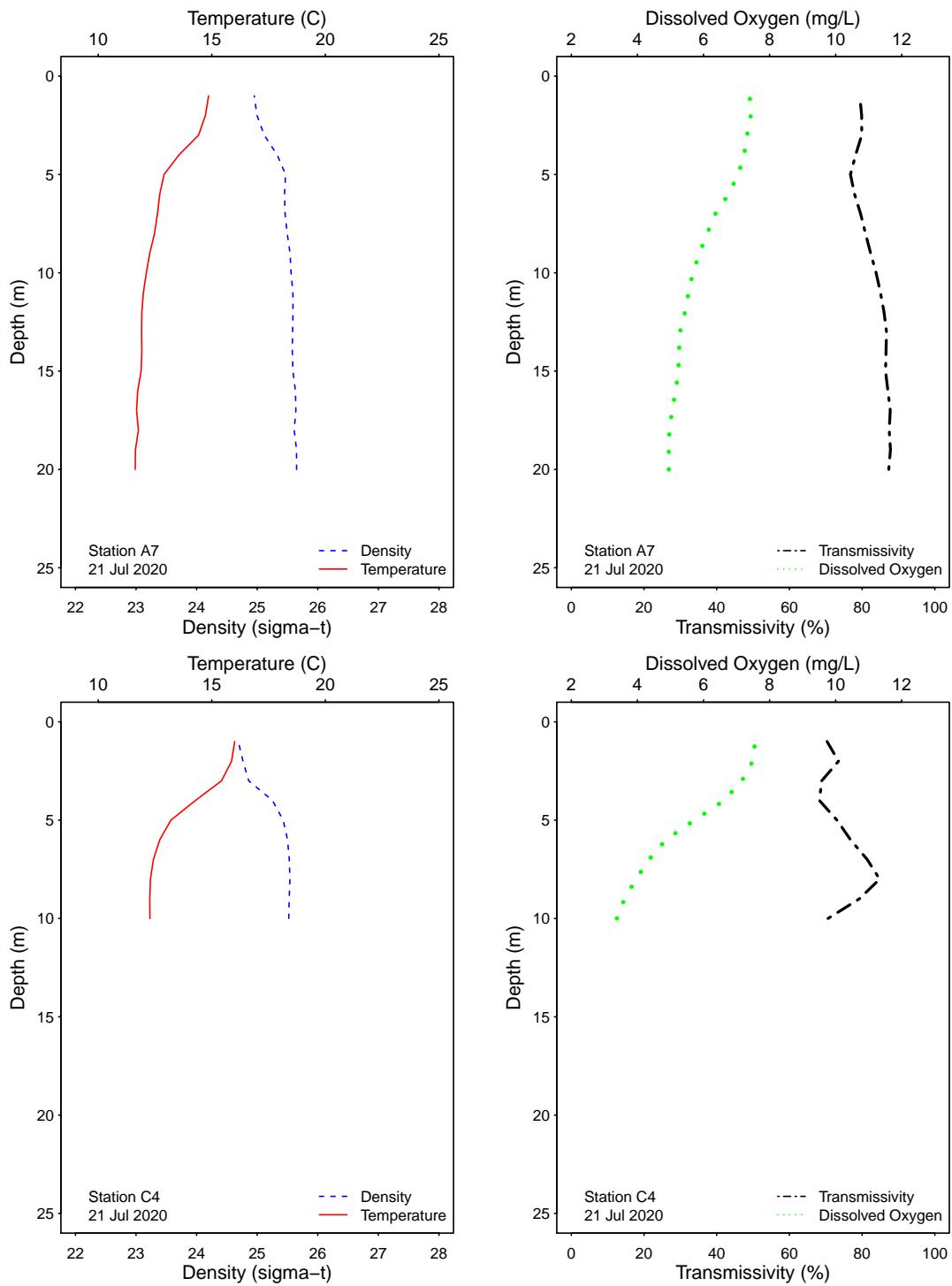


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

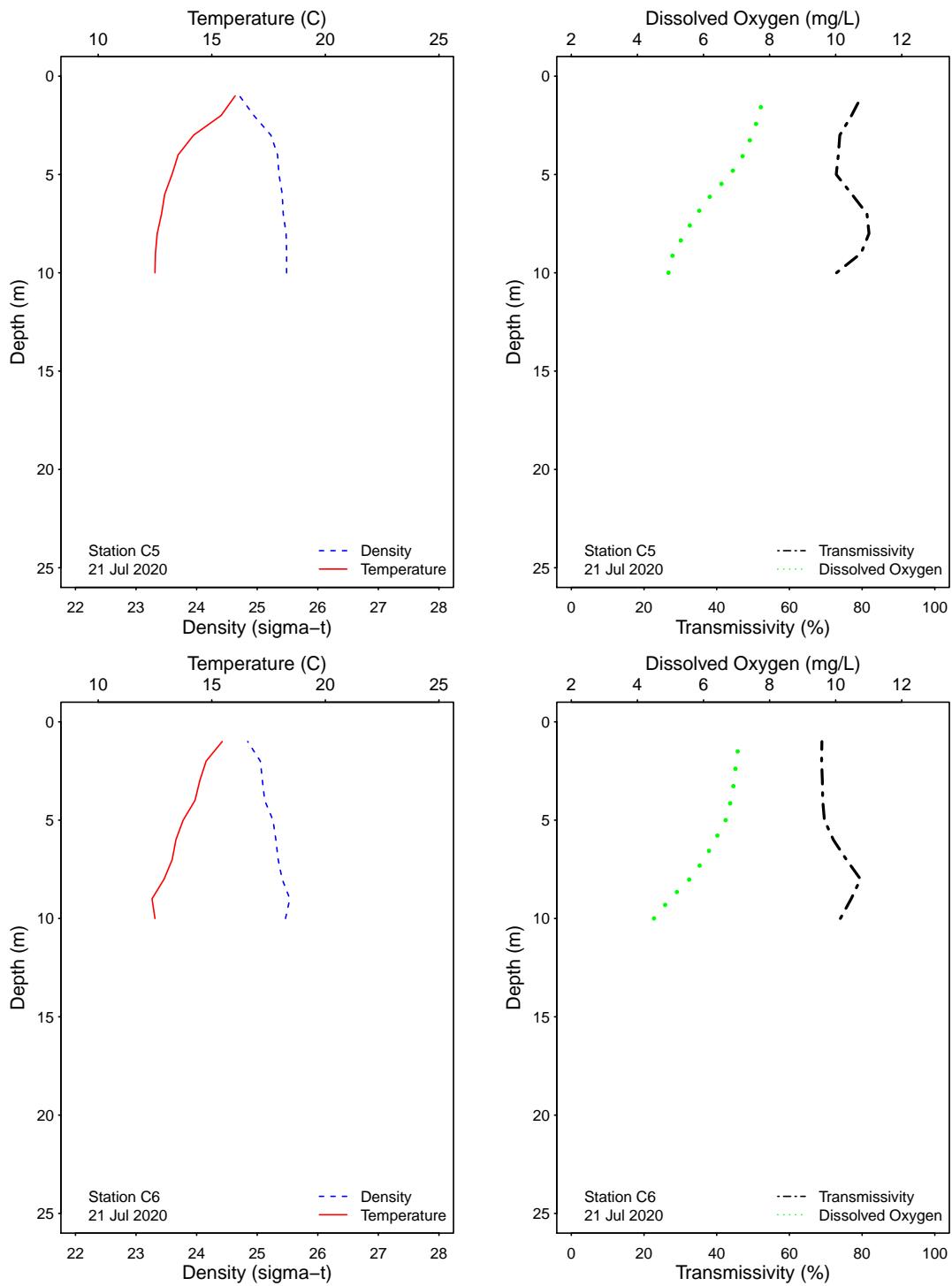


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

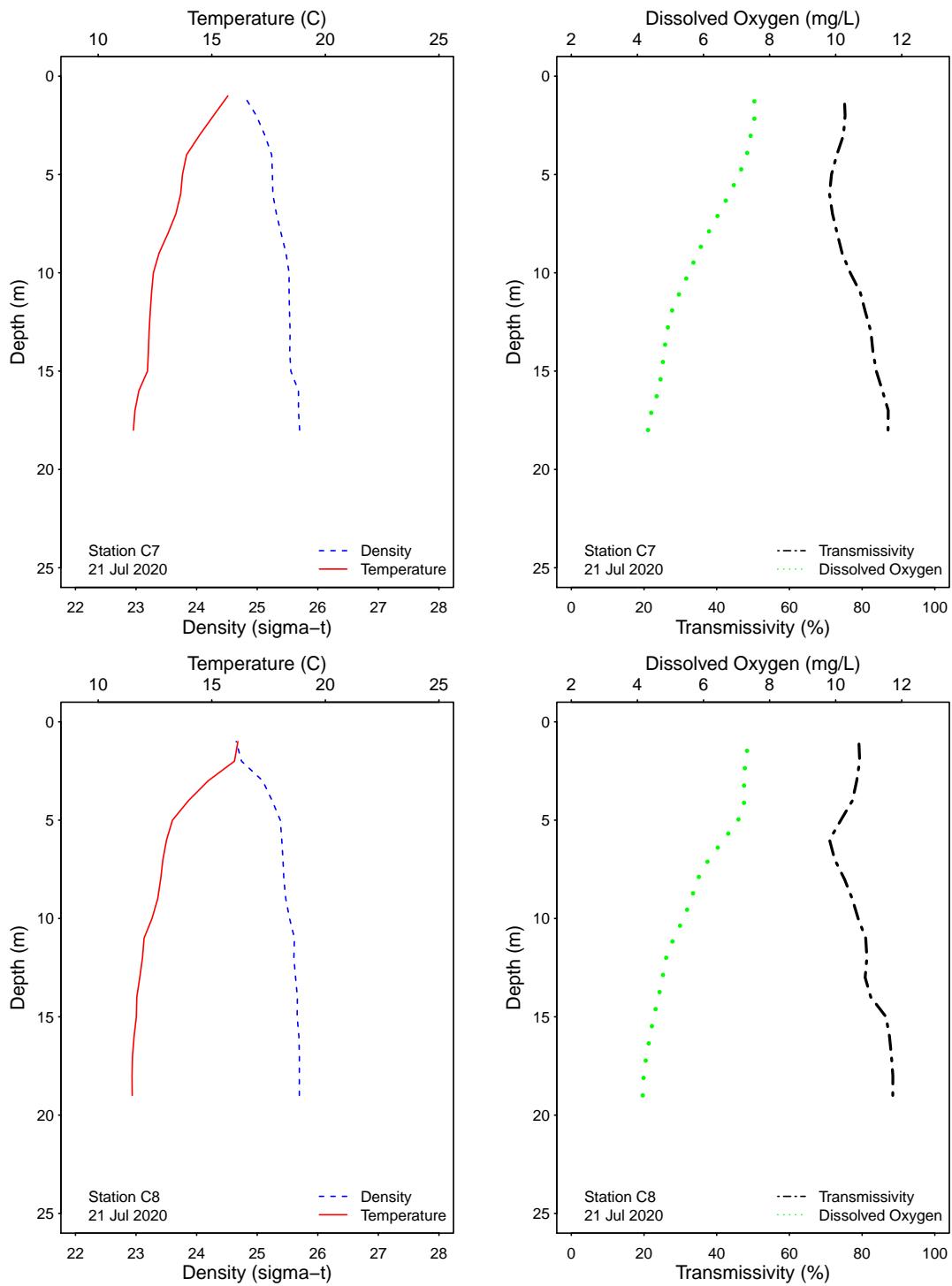


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

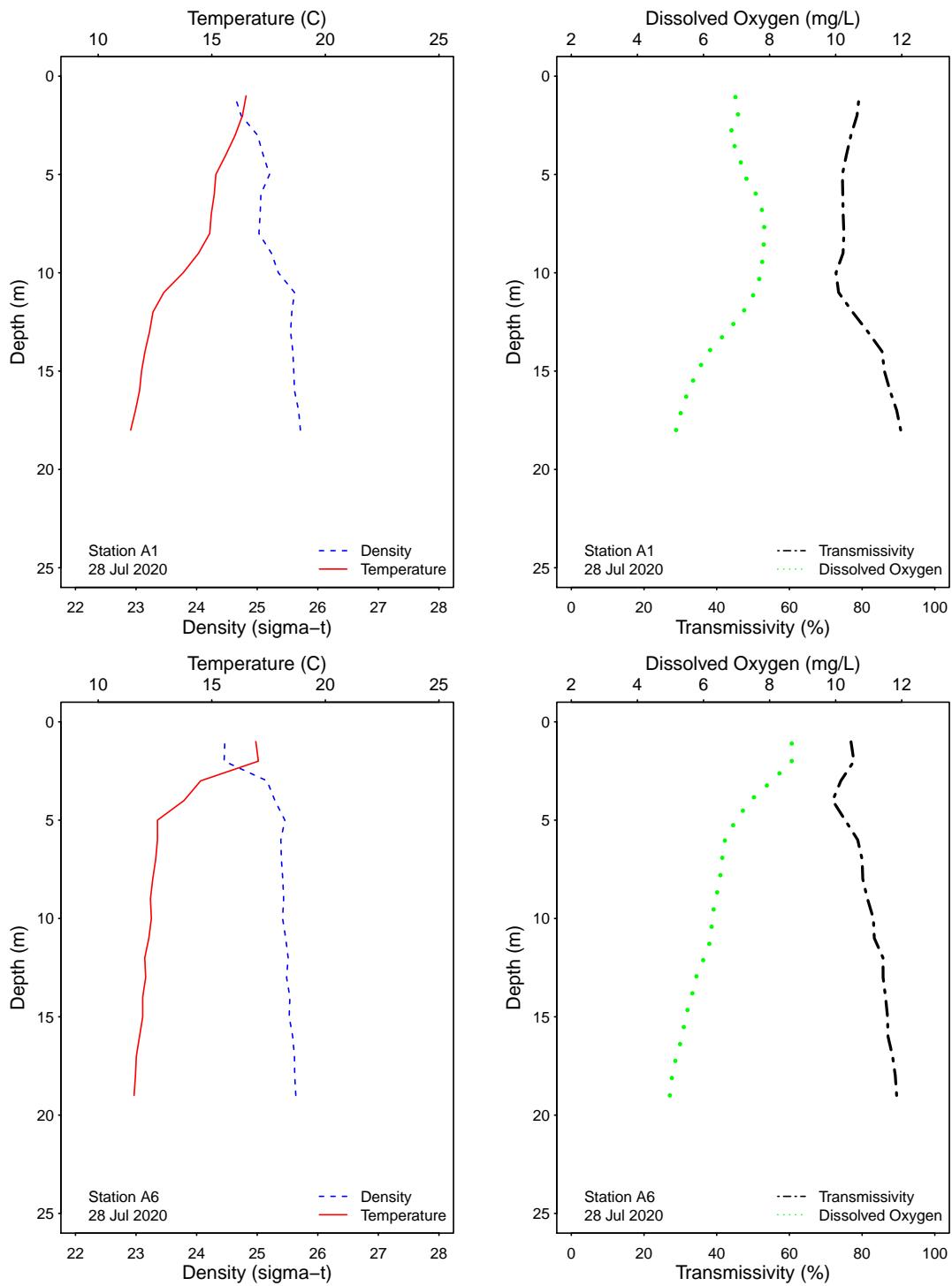


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

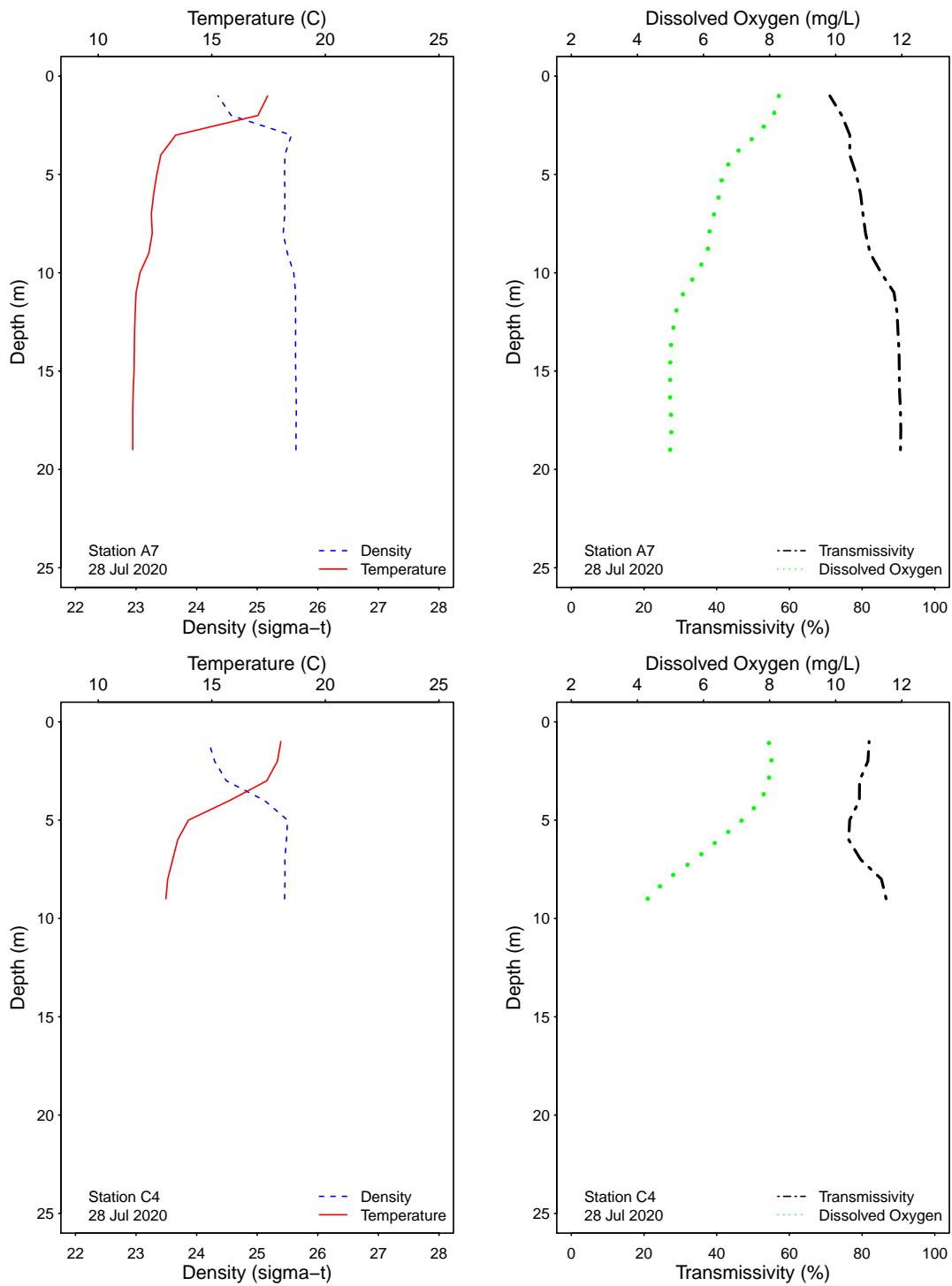


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

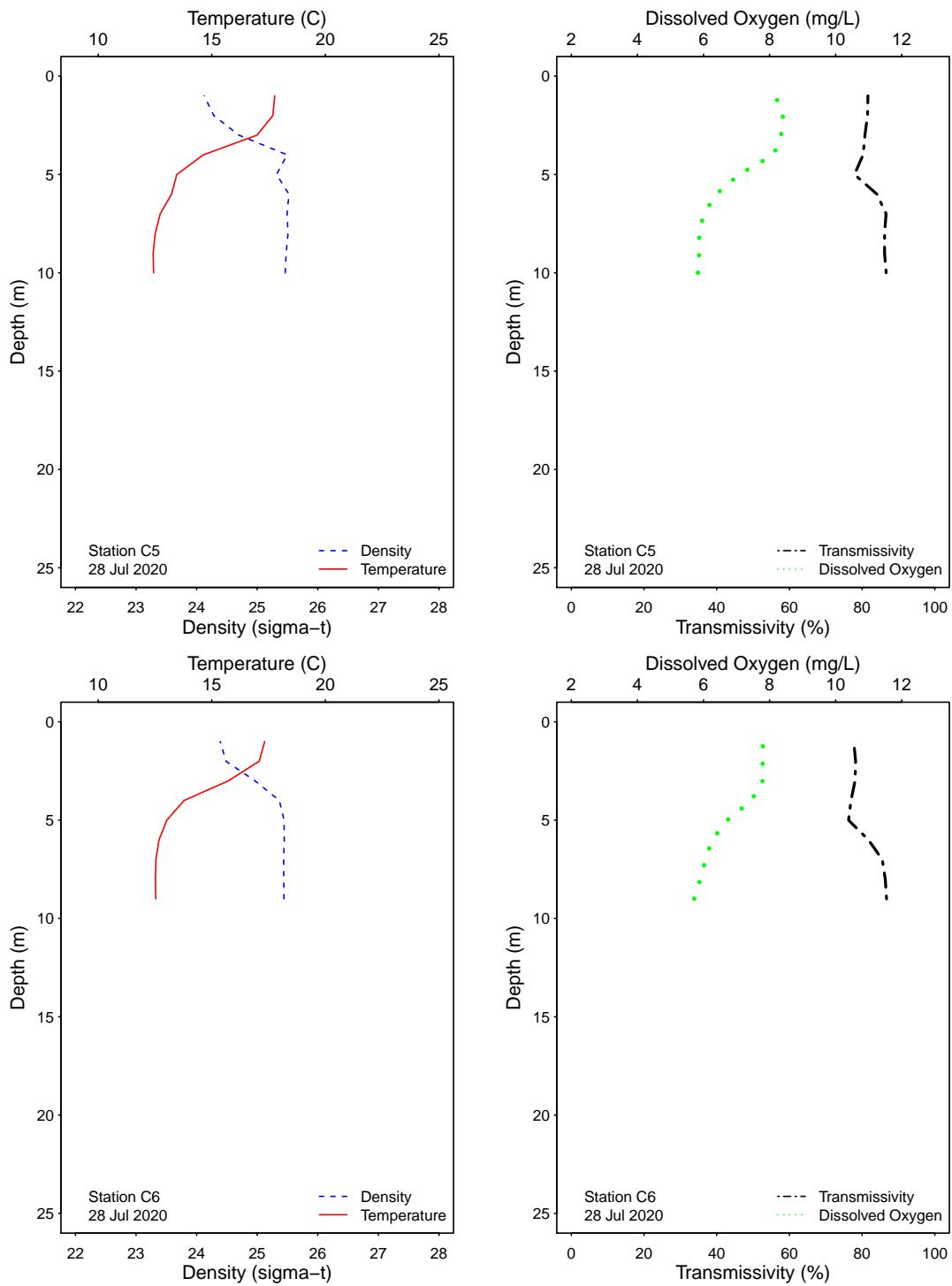


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

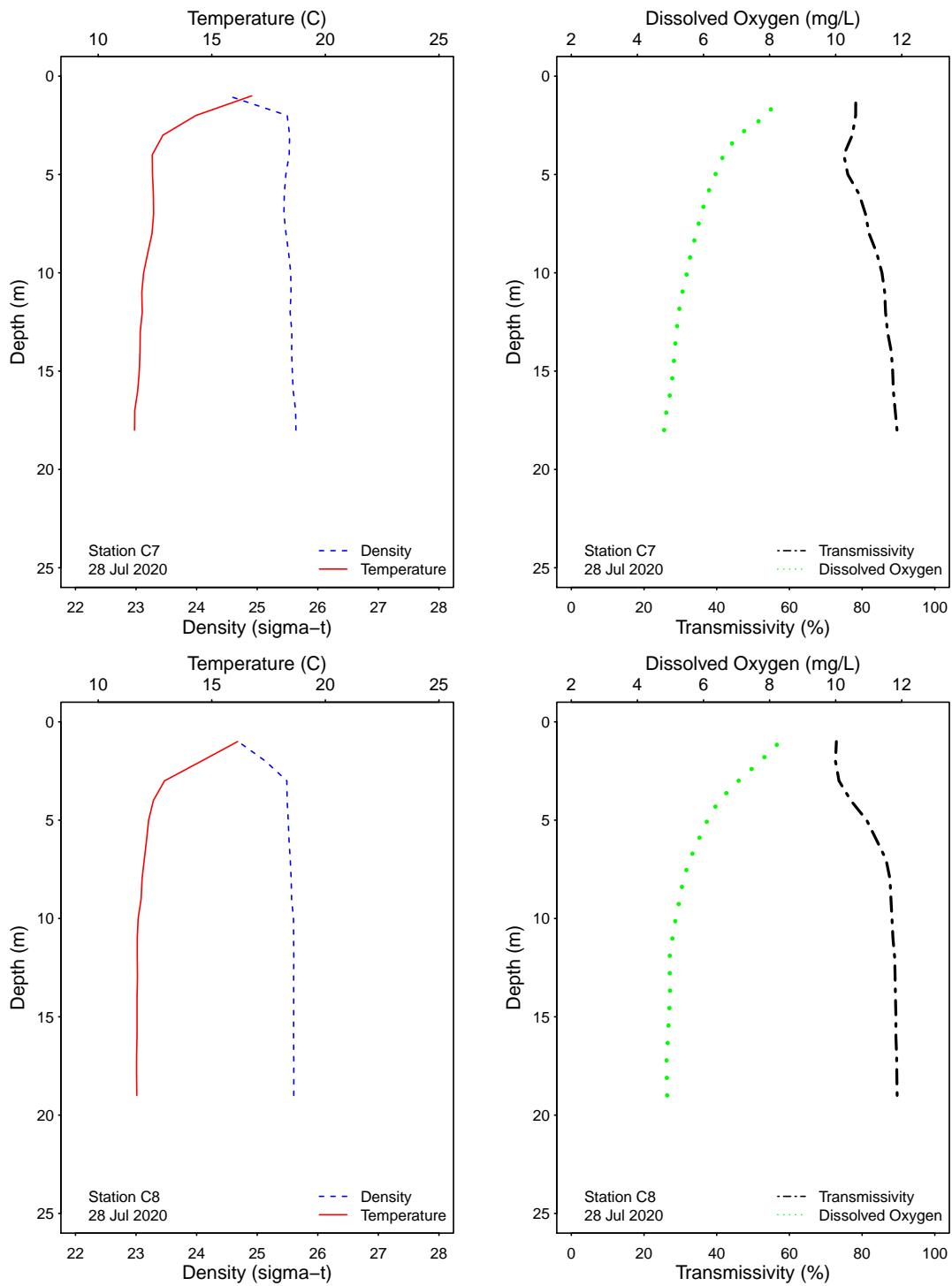


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
A7	06 Jul 2020	18	BS	LAB DUPLICATE	6e	<2	<2
A7	13 Jul 2020	18	AE	LAB DUPLICATE	<2	<2	<2
A7	21 Jul 2020	18	BS	LAB DUPLICATE	<2	<2	<2
A7	28 Jul 2020	18	BS	LAB DUPLICATE	<2	<2	<2
C7	06 Jul 2020	18	AE	LAB DUPLICATE	34e	2e	<2
C7	13 Jul 2020	18	AE	LAB DUPLICATE	<2	<2	<2
C7	21 Jul 2020	18	JF	LAB DUPLICATE	<2	<2	<2
C7	28 Jul 2020	18	BS	LAB DUPLICATE	12e	8e	2e
C8	06 Jul 2020	12	AE	LAB DUPLICATE	<2	<2	<2
C8	13 Jul 2020	12	BS	LAB DUPLICATE	<2	<2	<2
C8	21 Jul 2020	12	JF	LAB DUPLICATE	8e	2e	<2
C8	28 Jul 2020	12	JF	LAB DUPLICATE	6e	2e	<2
D12	01 Jul 2020		AE	FIELD DUPLICATE	<20	<2	<2
D12	01 Jul 2020		AE	LAB DUPLICATE	4e	<2	2e
D12	08 Jul 2020		JF	FIELD DUPLICATE	20e	<2	<2
D12	08 Jul 2020		JF	LAB DUPLICATE	<20	<2	<2
D12	15 Jul 2020		AE	FIELD DUPLICATE	<2	<2	<2
D12	15 Jul 2020		AE	LAB DUPLICATE	4e	<2	<2
D12	22 Jul 2020		JF	FIELD DUPLICATE	<20	6e	<2
D12	22 Jul 2020		JF	LAB DUPLICATE	<20	2e	2e
D12	29 Jul 2020		JF	FIELD DUPLICATE	<2	6e	<2
D12	29 Jul 2020		JF	LAB DUPLICATE	4e	<2	<2

ns = not sampled

ND = no data

