

POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

POINT LOMA WASTEWATER TREATMENT PLANT

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

APRIL 2020

Environmental Monitoring and Technical Services
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May 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 April 2020 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

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

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

Sincerely,



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

RK:rg

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

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 ≥ 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, chromomorphpic 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)¹. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

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

30-day Geometric Mean: The following standards are based on the geometric mean of the five 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

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

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, 1987²) 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

- During April, seven of the eight shore stations were in compliance with California Ocean Plan (Ocean Plan) water contact standards.
 - o The single sample maximum (SSM) standard for *Enterococcus* was exceeded at station D11 on April 15.
 - o Per permit requirements, a resample was collected in response to this SSM exceedance (see Table 2.8 for details).
- Notable observations included a sewage-like odor at station D5 on April 8 and station D11 on April 15.
- 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 April 1, 10, 14, 21, and 28.
- During April, all stations were in compliance with the various Ocean Plan water contact standards.

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

- Water column temperatures ranged from 10.74 to 18.46°C. The difference between surface and bottom waters ranged from 0 to 6.67°C.
- Chlorophyll *a* concentrations ranged from 0.28 to 62.31 µg/L.
- Nothing of sewage origin was observed at any of the kelp stations.

Offshore Stations

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

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- Total Coliform Single Sample Maximum
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- Shore Station Water Quality Summary Data
- Visual Observations

Kelp Stations

- Total Coliform Compliance Summary, Geometric Mean Standard
- Fecal Coliform Compliance Summary, Geometric Mean Standard
- Enterococcus* Bacteria Compliance Summary, Geometric Mean Standard
- Total Coliform Single Sample Maximum
- Fecal Coliform Single Sample Maximum
- Enterococcus* Bacteria Single Sample Maximum
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- Kelp Station Water Quality Summary Data
- Visual Observations
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APPENDIX A

Quality Assurance

- Water Quality Summary Data



TABLES AND FIGURES

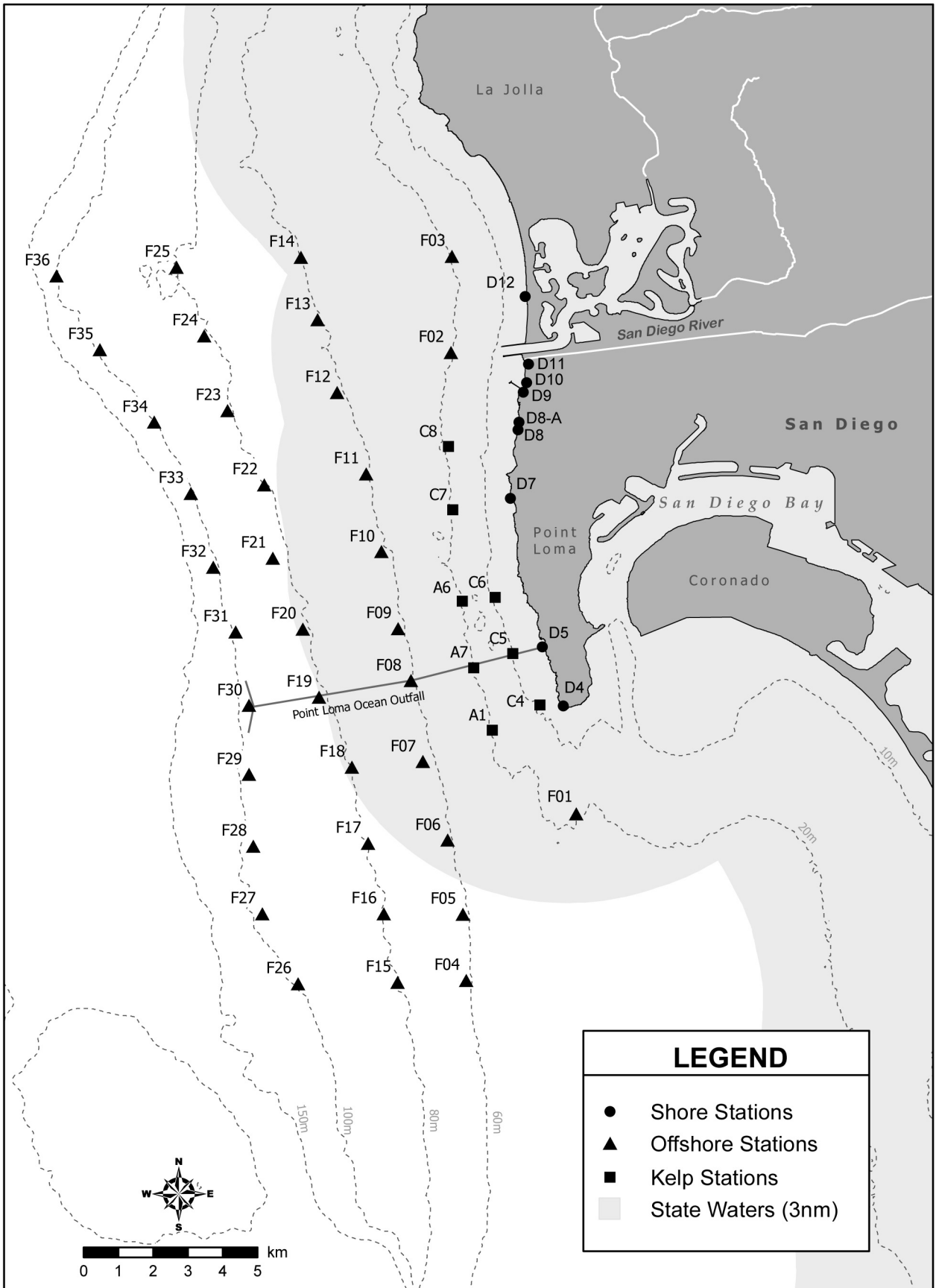


Figure 1.1 Station Map

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 Apr 2020	7	17	17	30	12	38	137	2
02 Apr 2020	7	17	17	30	12	38	137	2
03 Apr 2020	10*	28*	24*	34*	13*	44*	299*	3*
04 Apr 2020	10*	28*	24*	34*	13*	44*	299*	3*
05 Apr 2020	10*	28*	24*	34*	13*	44*	299*	3*
06 Apr 2020	10*	28*	24*	34*	13*	44*	299*	3*
07 Apr 2020	10*	28*	24*	34*	13*	44*	299*	3*
08 Apr 2020	11	26	37	38	14	60	276	4
09 Apr 2020	11	26	37	38	14	60	276	4
10 Apr 2020	15*	24*	43*	37*	17*	46*	242*	4*
11 Apr 2020	15*	24*	43*	37*	17*	46*	242*	4*
12 Apr 2020	15*	24*	43*	37*	17*	46*	242*	4*
13 Apr 2020	15*	24*	43*	37*	17*	46*	242*	4*
14 Apr 2020	15*	24*	43*	37*	17*	46*	242*	4*
15 Apr 2020	12	23	37	31	16	39	401	3
16 Apr 2020	12	23	37	31	16	39	401	3
17 Apr 2020	7*	20*	26*	19*	13*	26*	209*	4*
18 Apr 2020	7*	20*	26*	19*	13*	26*	209*	4*
19 Apr 2020	7*	20*	26*	19*	13*	26*	209*	4*
20 Apr 2020	7*	20*	26*	19*	13*	26*	209*	4*
21 Apr 2020	7*	20*	26*	19*	13*	26*	209*	4*
22 Apr 2020	9	20	25	22	16	34	131	5
23 Apr 2020	9	20	25	22	16	34	131	5
24 Apr 2020	8*	20*	36*	29*	16*	39*	221*	6*
25 Apr 2020	8*	20*	36*	29*	16*	39*	221*	6*
26 Apr 2020	8*	20*	36*	29*	16*	39*	221*	6*
27 Apr 2020	8*	20*	36*	29*	16*	39*	221*	6*
28 Apr 2020	8*	20*	36*	29*	16*	39*	221*	6*
29 Apr 2020	10	32	32	27	17	54	217	8
30 Apr 2020	10	32	32	27	17	54	217	8

* 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 Apr 2020	2	8	3	8	3	6	17	2
02 Apr 2020	2	8	3	8	3	6	17	2
03 Apr 2020	2*	11*	4*	12*	4*	8*	24*	3*
04 Apr 2020	2*	11*	4*	12*	4*	8*	24*	3*
05 Apr 2020	2*	11*	4*	12*	4*	8*	24*	3*
06 Apr 2020	2*	11*	4*	12*	4*	8*	24*	3*
07 Apr 2020	2*	11*	4*	12*	4*	8*	24*	3*
08 Apr 2020	3	10	5	10	4	9	23	3
09 Apr 2020	3	10	5	10	4	9	23	3
10 Apr 2020	4*	8*	6*	10*	5*	8*	25*	3*
11 Apr 2020	4*	8*	6*	10*	5*	8*	25*	3*
12 Apr 2020	4*	8*	6*	10*	5*	8*	25*	3*
13 Apr 2020	4*	8*	6*	10*	5*	8*	25*	3*
14 Apr 2020	4*	8*	6*	10*	5*	8*	25*	3*
15 Apr 2020	3	6	6	7	4	8	38	2
16 Apr 2020	3	6	6	7	4	8	38	2
17 Apr 2020	4*	6*	4*	4*	3*	7*	25*	3*
18 Apr 2020	4*	6*	4*	4*	3*	7*	25*	3*
19 Apr 2020	4*	6*	4*	4*	3*	7*	25*	3*
20 Apr 2020	4*	6*	4*	4*	3*	7*	25*	3*
21 Apr 2020	4*	6*	4*	4*	3*	7*	25*	3*
22 Apr 2020	4	5	4	3	4	6	18	4
23 Apr 2020	4	5	4	3	4	6	18	4
24 Apr 2020	4*	3*	4*	3*	5*	8*	23*	5*
25 Apr 2020	4*	3*	4*	3*	5*	8*	23*	5*
26 Apr 2020	4*	3*	4*	3*	5*	8*	23*	5*
27 Apr 2020	4*	3*	4*	3*	5*	8*	23*	5*
28 Apr 2020	4*	3*	4*	3*	5*	8*	23*	5*
29 Apr 2020	4	2	4	2	4	9	22	4
30 Apr 2020	4	2	4	2	4	9	22	4

* Geometric mean calculated using n<5

ns = not sampled

Table 2.3

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Apr 2020	3	3	4	7	5	4	12	2
02 Apr 2020	3	3	4	7	5	4	12	2
03 Apr 2020	3*	3*	5*	8	6*	5*	12	2*
04 Apr 2020	3*	3*	5*	8	6*	5*	12	2*
05 Apr 2020	3*	3*	5*	8	6*	5*	12	2*
06 Apr 2020	3*	3*	5*	8	6*	5*	12	2*
07 Apr 2020	3*	3*	5*	8	6*	5*	12	2*
08 Apr 2020	4	3	4	8	8	5	12	2
09 Apr 2020	4	3	4	8	8	5	12	2
10 Apr 2020	5*	4*	5*	7	7*	6*	10	2*
11 Apr 2020	5*	4*	5*	7	7*	6*	10	2*
12 Apr 2020	5*	4*	5*	7	7*	6*	10	2*
13 Apr 2020	5*	4*	5*	7	7*	6*	10	2*
14 Apr 2020	5*	4*	5*	7	7*	6*	10	2*
15 Apr 2020	4	3	5	5	6	5	16	2
16 Apr 2020	4	3	5	5	6	5	12	2
17 Apr 2020	4*	3*	3*	2	4*	3*	6	2*
18 Apr 2020	4*	3*	3*	2	4*	3*	6	2*
19 Apr 2020	4*	3*	3*	3*	4*	3*	7	2*
20 Apr 2020	4*	3*	3*	3*	4*	3*	7	2*
21 Apr 2020	4*	3*	3*	3*	4*	3*	7	2*
22 Apr 2020	3	4	3	3	4	2	6	2
23 Apr 2020	3	4	3	3	4	2	6	2
24 Apr 2020	4*	4*	3*	3*	5*	3*	7	2*
25 Apr 2020	4*	4*	3*	3*	5*	3*	7	2*
26 Apr 2020	4*	4*	3*	3*	5*	3*	7	2*
27 Apr 2020	4*	4*	3*	3*	5*	3*	7	2*
28 Apr 2020	4*	4*	3*	3*	5*	3*	7	2*
29 Apr 2020	4	4	3	3	4	3	8	2
30 Apr 2020	4	4	3	3	4	3	8	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 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Apr 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 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Apr 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 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Apr 2020	IC	IC	IC	IC	IC	IC	E	IC
16 Apr 2020	ns	ns	ns	ns	ns	ns	IC	ns
22 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Apr 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 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
08 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
15 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
22 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
29 Apr 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* (Entero) are reported as CFU/100 mL. The fecal:total coliform ratio (F:T) is unitless. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero	F:T
D4	01 Apr 2020	1037	<2	<2	<2	1.00
D4	08 Apr 2020	734	20e	14e	22e	0.70
D4	15 Apr 2020	751	6e	<2	<2	0.33
D4	22 Apr 2020	810	<20	6e	<2	0.30
D4	29 Apr 2020	814	<20	<2	6e	0.10
D5	01 Apr 2020	1024	<20	<2	<2	0.10
D5	08 Apr 2020	801	<20	6e	6e	0.30
D5	15 Apr 2020	730	<20	<2	<2	0.10
D5	22 Apr 2020	749	<20	2e	12e	0.10
D5	29 Apr 2020	759	<200	<2	2e	0.01
D7	01 Apr 2020	1102	<20	<2	<2	0.10
D7	08 Apr 2020	830	200e	18e	4e	0.09
D7	15 Apr 2020	814	20e	4e	6e	0.20
D7	22 Apr 2020	839	<20	<2	<2	0.10
D7	29 Apr 2020	905	20e	2e	<2	0.10
D8-B	01 Apr 2020	1121	<20	<2	<2	0.10
D8-B	08 Apr 2020	859	60e	6e	6e	0.10
D8-B	15 Apr 2020	831	14e	<2	<2	0.14
D8-B	22 Apr 2020	854	40e	<2	6e	0.05
D8-B	29 Apr 2020	919	20e	<2	<2	0.10
D9	01 Apr 2020	1134	6e	2e	<2	0.33
D9	08 Apr 2020	917	20e	6e	24e	0.30
D9	15 Apr 2020	844	14e	2e	<2	0.14
D9	22 Apr 2020	907	40e	<20	8e	0.50
D9	29 Apr 2020	932	20e	<2	<2	0.10
D10	01 Apr 2020	1147	6e	4e	<2	0.67
D10	08 Apr 2020	935	200e	<20	6e	0.10
D10	15 Apr 2020	857	<20	12e	2e	0.60
D10	22 Apr 2020	921	100e	4e	2e	0.04
D10	29 Apr 2020	947	200e	<20	6e	0.10
D11	01 Apr 2020	1201	<200	16e	<2	0.08
D11	08 Apr 2020	1008	200e	<20	12e	0.10
D11	15 Apr 2020	909	3000e	220e	180e	0.07
D11	16 Apr 2020	1227	ns	ns	<2	ns
D11	22 Apr 2020	933	20e	4e	2e	0.20
D11	29 Apr 2020	1018	<200	<20	20e	0.10

Station	Date	Time	Total	Fecal	Enteroc	F:T
D12	01 Apr 2020	1233	<2	<2	<2	1.00
D12	08 Apr 2020	1041	<20	6e	2e	0.30
D12	15 Apr 2020	957	<2	<2	<2	1.00
D12	22 Apr 2020	956	<20	<20	<2	1.00
D12	29 Apr 2020	1046	<20	<2	<2	0.10

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
D11	16 Apr 2020			Resample

Table 2.9

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

Station	Date	Parameter	Value
D4	01 Apr 2020	Arrive Time	1037
D4	01 Apr 2020	Weather	Cloudy
D4	01 Apr 2020	Wind Speed (kts)	7.1
D4	01 Apr 2020	Wind Dir	SW
D4	01 Apr 2020	Animal Life	None
D4	01 Apr 2020	Floatables	None
D4	01 Apr 2020	Water Color	Green
D4	01 Apr 2020	Current Direction	N
D4	01 Apr 2020	Water Temp (C)	18.3
D4	01 Apr 2020	Wave Height Low (ft)	1
D4	01 Apr 2020	High Tide (ft)	4.2
D4	01 Apr 2020	High Tide Time	248
D4	01 Apr 2020	Low Tide (ft)	0.4
D4	01 Apr 2020	Low Tide Time	1119
D4	01 Apr 2020	Comments	Kelp; Seagrass; Algae; 1 Boat; Water clear
D4	08 Apr 2020	Arrive Time	734
D4	08 Apr 2020	Weather	Partly Cloudy
D4	08 Apr 2020	Wind Speed (kts)	6.8
D4	08 Apr 2020	Wind Dir	S
D4	08 Apr 2020	Animal Life	1 Cormorant; 11 Seagulls
D4	08 Apr 2020	Floatables	None
D4	08 Apr 2020	Water Color	Green
D4	08 Apr 2020	Current Direction	N
D4	08 Apr 2020	Water Temp (C)	15.3
D4	08 Apr 2020	Wave Height Low (ft)	1
D4	08 Apr 2020	High Tide (ft)	5.2
D4	08 Apr 2020	High Tide Time	1003
D4	08 Apr 2020	Low Tide (ft)	-0.7
D4	08 Apr 2020	Low Tide Time	403
D4	08 Apr 2020	Comments	Algae; Water clear
D4	15 Apr 2020	Arrive Time	751
D4	15 Apr 2020	Weather	Sunny
D4	15 Apr 2020	Wind Speed (kts)	0
D4	15 Apr 2020	Wind Dir	
D4	15 Apr 2020	Animal Life	None
D4	15 Apr 2020	Floatables	None
D4	15 Apr 2020	Water Color	Green
D4	15 Apr 2020	Current Direction	N
D4	15 Apr 2020	Water Temp (C)	16.5
D4	15 Apr 2020	Wave Height Low (ft)	2
D4	15 Apr 2020	High Tide (ft)	4.1
D4	15 Apr 2020	High Tide Time	401
D4	15 Apr 2020	Low Tide (ft)	0.1
D4	15 Apr 2020	Low Tide Time	1148
D4	15 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D4	22 Apr 2020	Arrive Time	810
D4	22 Apr 2020	Weather	Sunny
D4	22 Apr 2020	Wind Speed (kts)	3.1

Station	Date	Parameter	Value
D4	22 Apr 2020	Wind Dir	NW
D4	22 Apr 2020	Animal Life	3 Cormorants
D4	22 Apr 2020	Floatables	Foam
D4	22 Apr 2020	Water Color	Green
D4	22 Apr 2020	Current Direction	S
D4	22 Apr 2020	Water Temp (C)	16.2
D4	22 Apr 2020	Wave Height Low (ft)	2
D4	22 Apr 2020	High Tide (ft)	4.3
D4	22 Apr 2020	High Tide Time	938
D4	22 Apr 2020	Low Tide (ft)	0.1
D4	22 Apr 2020	Low Tide Time	340
D4	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Debris; Water clear
D4	29 Apr 2020	Arrive Time	814
D4	29 Apr 2020	Weather	Cloudy
D4	29 Apr 2020	Wind Speed (kts)	0
D4	29 Apr 2020	Wind Dir	
D4	29 Apr 2020	Animal Life	1 Cormorant; 2 Pelicans; 3 Seagulls; 1 Seal
D4	29 Apr 2020	Floatables	None
D4	29 Apr 2020	Water Color	Green
D4	29 Apr 2020	Current Direction	S
D4	29 Apr 2020	Water Temp (C)	19.1
D4	29 Apr 2020	Wave Height Low (ft)	2
D4	29 Apr 2020	High Tide (ft)	4.6
D4	29 Apr 2020	High Tide Time	46
D4	29 Apr 2020	Low Tide (ft)	0.2
D4	29 Apr 2020	Low Tide Time	912
D4	29 Apr 2020	Comments	None
D5	01 Apr 2020	Arrive Time	1024
D5	01 Apr 2020	Weather	Cloudy
D5	01 Apr 2020	Wind Speed (kts)	5.6
D5	01 Apr 2020	Wind Dir	S
D5	01 Apr 2020	Animal Life	5 Cormorants; 13 Seagulls
D5	01 Apr 2020	Floatables	None
D5	01 Apr 2020	Water Color	Green
D5	01 Apr 2020	Current Direction	N
D5	01 Apr 2020	Water Temp (C)	17.9
D5	01 Apr 2020	Wave Height Low (ft)	2
D5	01 Apr 2020	High Tide (ft)	4.2
D5	01 Apr 2020	High Tide Time	248
D5	01 Apr 2020	Low Tide (ft)	0.4
D5	01 Apr 2020	Low Tide Time	1119
D5	01 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D5	08 Apr 2020	Arrive Time	801
D5	08 Apr 2020	Weather	Partly Cloudy
D5	08 Apr 2020	Wind Speed (kts)	2.9
D5	08 Apr 2020	Wind Dir	S
D5	08 Apr 2020	Animal Life	1 Cormorant; 3 Seagulls
D5	08 Apr 2020	Floatables	None
D5	08 Apr 2020	Water Color	Green
D5	08 Apr 2020	Current Direction	N
D5	08 Apr 2020	Water Temp (C)	16
D5	08 Apr 2020	Wave Height Low (ft)	3

Station	Date	Parameter	Value
D5	08 Apr 2020	High Tide (ft)	5.2
D5	08 Apr 2020	High Tide Time	1003
D5	08 Apr 2020	Low Tide (ft)	-0.7
D5	08 Apr 2020	Low Tide Time	403
D5	08 Apr 2020	Comments	Sewage-like odor; Water turbid
D5	15 Apr 2020	Arrive Time	730
D5	15 Apr 2020	Weather	Sunny
D5	15 Apr 2020	Wind Speed (kts)	0
D5	15 Apr 2020	Wind Dir	
D5	15 Apr 2020	Animal Life	3 Seagulls
D5	15 Apr 2020	Floatables	None
D5	15 Apr 2020	Water Color	Green
D5	15 Apr 2020	Current Direction	N
D5	15 Apr 2020	Water Temp (C)	16.5
D5	15 Apr 2020	Wave Height Low (ft)	2
D5	15 Apr 2020	High Tide (ft)	4.1
D5	15 Apr 2020	High Tide Time	401
D5	15 Apr 2020	Low Tide (ft)	0.1
D5	15 Apr 2020	Low Tide Time	1148
D5	15 Apr 2020	Comments	Kelp; Algae; Water clear
D5	22 Apr 2020	Arrive Time	749
D5	22 Apr 2020	Weather	Sunny
D5	22 Apr 2020	Wind Speed (kts)	3.6
D5	22 Apr 2020	Wind Dir	NW
D5	22 Apr 2020	Animal Life	None
D5	22 Apr 2020	Floatables	Foam; Film
D5	22 Apr 2020	Water Color	Brown
D5	22 Apr 2020	Current Direction	S
D5	22 Apr 2020	Water Temp (C)	16.2
D5	22 Apr 2020	Wave Height Low (ft)	4
D5	22 Apr 2020	High Tide (ft)	4.3
D5	22 Apr 2020	High Tide Time	938
D5	22 Apr 2020	Low Tide (ft)	0.1
D5	22 Apr 2020	Low Tide Time	340
D5	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water turbid
D5	29 Apr 2020	Arrive Time	759
D5	29 Apr 2020	Weather	Foggy
D5	29 Apr 2020	Wind Speed (kts)	0
D5	29 Apr 2020	Wind Dir	
D5	29 Apr 2020	Animal Life	2 Cormorants; 1 Seagull; 1 Seal
D5	29 Apr 2020	Floatables	None
D5	29 Apr 2020	Water Color	Brown
D5	29 Apr 2020	Current Direction	S
D5	29 Apr 2020	Water Temp (C)	20.1
D5	29 Apr 2020	Wave Height Low (ft)	1
D5	29 Apr 2020	High Tide (ft)	4.6
D5	29 Apr 2020	High Tide Time	46
D5	29 Apr 2020	Low Tide (ft)	0.2
D5	29 Apr 2020	Low Tide Time	912
D5	29 Apr 2020	Comments	None
D7	01 Apr 2020	Arrive Time	1102

Station	Date	Parameter	Value
D7	01 Apr 2020	Weather	Partly Cloudy
D7	01 Apr 2020	Wind Speed (kts)	5.6
D7	01 Apr 2020	Wind Dir	S
D7	01 Apr 2020	Animal Life	2 Pigeons; 1 Crow
D7	01 Apr 2020	Floatables	None
D7	01 Apr 2020	Water Color	Green
D7	01 Apr 2020	Current Direction	N
D7	01 Apr 2020	Water Temp (C)	18.4
D7	01 Apr 2020	Wave Height Low (ft)	3
D7	01 Apr 2020	High Tide (ft)	3.1
D7	01 Apr 2020	High Tide Time	1906
D7	01 Apr 2020	Low Tide (ft)	0.4
D7	01 Apr 2020	Low Tide Time	1119
D7	01 Apr 2020	Comments	Kelp; Seagrass; Algae; 5 Persons; Water clear
D7	08 Apr 2020	Arrive Time	830
D7	08 Apr 2020	Weather	Partly Cloudy
D7	08 Apr 2020	Wind Speed (kts)	5.2
D7	08 Apr 2020	Wind Dir	S
D7	08 Apr 2020	Animal Life	1 Shorebird; 3 Seagulls
D7	08 Apr 2020	Floatables	None
D7	08 Apr 2020	Water Color	Green
D7	08 Apr 2020	Current Direction	N
D7	08 Apr 2020	Water Temp (C)	16.5
D7	08 Apr 2020	Wave Height Low (ft)	3
D7	08 Apr 2020	High Tide (ft)	5.2
D7	08 Apr 2020	High Tide Time	1003
D7	08 Apr 2020	Low Tide (ft)	-0.7
D7	08 Apr 2020	Low Tide Time	403
D7	08 Apr 2020	Comments	Kelp; Water turbid
D7	15 Apr 2020	Arrive Time	814
D7	15 Apr 2020	Weather	Sunny
D7	15 Apr 2020	Wind Speed (kts)	1.3
D7	15 Apr 2020	Wind Dir	NW
D7	15 Apr 2020	Animal Life	2 Seagulls
D7	15 Apr 2020	Floatables	None
D7	15 Apr 2020	Water Color	Green
D7	15 Apr 2020	Current Direction	N
D7	15 Apr 2020	Water Temp (C)	16.5
D7	15 Apr 2020	Wave Height Low (ft)	2
D7	15 Apr 2020	High Tide (ft)	4.1
D7	15 Apr 2020	High Tide Time	401
D7	15 Apr 2020	Low Tide (ft)	0.1
D7	15 Apr 2020	Low Tide Time	1148
D7	15 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D7	22 Apr 2020	Arrive Time	839
D7	22 Apr 2020	Weather	Sunny
D7	22 Apr 2020	Wind Speed (kts)	2.7
D7	22 Apr 2020	Wind Dir	N
D7	22 Apr 2020	Animal Life	2 Seagulls
D7	22 Apr 2020	Floatables	Foam
D7	22 Apr 2020	Water Color	Brown
D7	22 Apr 2020	Current Direction	S

Station	Date	Parameter	Value
D7	22 Apr 2020	Water Temp (C)	16.2
D7	22 Apr 2020	Wave Height Low (ft)	3
D7	22 Apr 2020	High Tide (ft)	4.3
D7	22 Apr 2020	High Tide Time	938
D7	22 Apr 2020	Low Tide (ft)	0.1
D7	22 Apr 2020	Low Tide Time	340
D7	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water turbid
D7	29 Apr 2020	Arrive Time	905
D7	29 Apr 2020	Weather	Cloudy
D7	29 Apr 2020	Wind Speed (kts)	1.7
D7	29 Apr 2020	Wind Dir	N
D7	29 Apr 2020	Animal Life	2 Seagulls
D7	29 Apr 2020	Floatables	None
D7	29 Apr 2020	Water Color	Red
D7	29 Apr 2020	Current Direction	S
D7	29 Apr 2020	Water Temp (C)	19.9
D7	29 Apr 2020	Wave Height Low (ft)	2
D7	29 Apr 2020	High Tide (ft)	4.6
D7	29 Apr 2020	High Tide Time	46
D7	29 Apr 2020	Low Tide (ft)	0.2
D7	29 Apr 2020	Low Tide Time	912
D7	29 Apr 2020	Comments	Kelp; Algae; 20 Surfers; Water turbid
D8-B	01 Apr 2020	Arrive Time	1121
D8-B	01 Apr 2020	Weather	Partly Cloudy
D8-B	01 Apr 2020	Wind Speed (kts)	6.9
D8-B	01 Apr 2020	Wind Dir	SW
D8-B	01 Apr 2020	Animal Life	1 Dog; 2 Seagulls
D8-B	01 Apr 2020	Floatables	None
D8-B	01 Apr 2020	Water Color	Green
D8-B	01 Apr 2020	Current Direction	N
D8-B	01 Apr 2020	Water Temp (C)	17.9
D8-B	01 Apr 2020	Wave Height Low (ft)	2
D8-B	01 Apr 2020	High Tide (ft)	3.1
D8-B	01 Apr 2020	High Tide Time	1906
D8-B	01 Apr 2020	Low Tide (ft)	0.4
D8-B	01 Apr 2020	Low Tide Time	1119
D8-B	01 Apr 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; 4 Surfers; Water clear
D8-B	08 Apr 2020	Arrive Time	859
D8-B	08 Apr 2020	Weather	Partly Cloudy
D8-B	08 Apr 2020	Wind Speed (kts)	7.1
D8-B	08 Apr 2020	Wind Dir	W
D8-B	08 Apr 2020	Animal Life	1 Seagull
D8-B	08 Apr 2020	Floatables	None
D8-B	08 Apr 2020	Water Color	Green
D8-B	08 Apr 2020	Current Direction	N
D8-B	08 Apr 2020	Water Temp (C)	17.6
D8-B	08 Apr 2020	Wave Height Low (ft)	3
D8-B	08 Apr 2020	High Tide (ft)	5.2
D8-B	08 Apr 2020	High Tide Time	1003
D8-B	08 Apr 2020	Low Tide (ft)	-0.7
D8-B	08 Apr 2020	Low Tide Time	403
D8-B	08 Apr 2020	Comments	Water clear

Station	Date	Parameter	Value
D8-B	15 Apr 2020	Arrive Time	831
D8-B	15 Apr 2020	Weather	Sunny
D8-B	15 Apr 2020	Wind Speed (kts)	0
D8-B	15 Apr 2020	Wind Dir	
D8-B	15 Apr 2020	Animal Life	None
D8-B	15 Apr 2020	Floatables	None
D8-B	15 Apr 2020	Water Color	Green
D8-B	15 Apr 2020	Current Direction	N
D8-B	15 Apr 2020	Water Temp (C)	16.7
D8-B	15 Apr 2020	Wave Height Low (ft)	1
D8-B	15 Apr 2020	High Tide (ft)	4.1
D8-B	15 Apr 2020	High Tide Time	401
D8-B	15 Apr 2020	Low Tide (ft)	0.1
D8-B	15 Apr 2020	Low Tide Time	1148
D8-B	15 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D8-B	22 Apr 2020	Arrive Time	854
D8-B	22 Apr 2020	Weather	Sunny
D8-B	22 Apr 2020	Wind Speed (kts)	1.9
D8-B	22 Apr 2020	Wind Dir	W
D8-B	22 Apr 2020	Animal Life	None
D8-B	22 Apr 2020	Floatables	Foam
D8-B	22 Apr 2020	Water Color	Brown
D8-B	22 Apr 2020	Current Direction	S
D8-B	22 Apr 2020	Water Temp (C)	16.3
D8-B	22 Apr 2020	Wave Height Low (ft)	3
D8-B	22 Apr 2020	High Tide (ft)	4.3
D8-B	22 Apr 2020	High Tide Time	938
D8-B	22 Apr 2020	Low Tide (ft)	0.1
D8-B	22 Apr 2020	Low Tide Time	340
D8-B	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D8-B	29 Apr 2020	Arrive Time	919
D8-B	29 Apr 2020	Weather	Cloudy
D8-B	29 Apr 2020	Wind Speed (kts)	3.3
D8-B	29 Apr 2020	Wind Dir	W
D8-B	29 Apr 2020	Animal Life	5 Seagulls
D8-B	29 Apr 2020	Floatables	None
D8-B	29 Apr 2020	Water Color	Red
D8-B	29 Apr 2020	Current Direction	S
D8-B	29 Apr 2020	Water Temp (C)	19
D8-B	29 Apr 2020	Wave Height Low (ft)	2
D8-B	29 Apr 2020	High Tide (ft)	3
D8-B	29 Apr 2020	High Tide Time	1715
D8-B	29 Apr 2020	Low Tide (ft)	0.2
D8-B	29 Apr 2020	Low Tide Time	912
D8-B	29 Apr 2020	Comments	Algae; 6 Surfers; Water turbid
D9	01 Apr 2020	Arrive Time	1134
D9	01 Apr 2020	Weather	Sunny
D9	01 Apr 2020	Wind Speed (kts)	11
D9	01 Apr 2020	Wind Dir	S
D9	01 Apr 2020	Animal Life	4 Seagulls; 2 Crow
D9	01 Apr 2020	Floatables	Foam

Station	Date	Parameter	Value
D9	01 Apr 2020	Water Color	Green
D9	01 Apr 2020	Current Direction	N
D9	01 Apr 2020	Water Temp (C)	18.1
D9	01 Apr 2020	Wave Height Low (ft)	3
D9	01 Apr 2020	High Tide (ft)	3.1
D9	01 Apr 2020	High Tide Time	1906
D9	01 Apr 2020	Low Tide (ft)	0.4
D9	01 Apr 2020	Low Tide Time	1119
D9	01 Apr 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; Water clear
D9	08 Apr 2020	Arrive Time	917
D9	08 Apr 2020	Weather	Partly Cloudy
D9	08 Apr 2020	Wind Speed (kts)	3.3
D9	08 Apr 2020	Wind Dir	S
D9	08 Apr 2020	Animal Life	13 Seagulls
D9	08 Apr 2020	Floatables	None
D9	08 Apr 2020	Water Color	Green
D9	08 Apr 2020	Current Direction	N
D9	08 Apr 2020	Water Temp (C)	17
D9	08 Apr 2020	Wave Height Low (ft)	3
D9	08 Apr 2020	High Tide (ft)	5.2
D9	08 Apr 2020	High Tide Time	1003
D9	08 Apr 2020	Low Tide (ft)	-0.7
D9	08 Apr 2020	Low Tide Time	403
D9	08 Apr 2020	Comments	Algae; Water clear
D9	15 Apr 2020	Arrive Time	844
D9	15 Apr 2020	Weather	Sunny
D9	15 Apr 2020	Wind Speed (kts)	1.1
D9	15 Apr 2020	Wind Dir	W
D9	15 Apr 2020	Animal Life	None
D9	15 Apr 2020	Floatables	None
D9	15 Apr 2020	Water Color	Green
D9	15 Apr 2020	Current Direction	N
D9	15 Apr 2020	Water Temp (C)	16.5
D9	15 Apr 2020	Wave Height Low (ft)	2
D9	15 Apr 2020	High Tide (ft)	4.1
D9	15 Apr 2020	High Tide Time	401
D9	15 Apr 2020	Low Tide (ft)	0.1
D9	15 Apr 2020	Low Tide Time	1148
D9	15 Apr 2020	Comments	Kelp; Seagrass; Algae; 2 Persons; Water clear
D9	22 Apr 2020	Arrive Time	907
D9	22 Apr 2020	Weather	Sunny
D9	22 Apr 2020	Wind Speed (kts)	5
D9	22 Apr 2020	Wind Dir	W
D9	22 Apr 2020	Animal Life	None
D9	22 Apr 2020	Floatables	Foam
D9	22 Apr 2020	Water Color	Brown
D9	22 Apr 2020	Current Direction	S
D9	22 Apr 2020	Water Temp (C)	16.1
D9	22 Apr 2020	Wave Height Low (ft)	4
D9	22 Apr 2020	High Tide (ft)	4.3
D9	22 Apr 2020	High Tide Time	938
D9	22 Apr 2020	Low Tide (ft)	0.1

Station	Date	Parameter	Value
D9	22 Apr 2020	Low Tide Time	340
D9	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water turbid
D9	29 Apr 2020	Arrive Time	932
D9	29 Apr 2020	Weather	Drizzle
D9	29 Apr 2020	Wind Speed (kts)	1.7
D9	29 Apr 2020	Wind Dir	S
D9	29 Apr 2020	Animal Life	5 Seagulls
D9	29 Apr 2020	Floatables	None
D9	29 Apr 2020	Water Color	Green
D9	29 Apr 2020	Current Direction	S
D9	29 Apr 2020	Water Temp (C)	19.3
D9	29 Apr 2020	Wave Height Low (ft)	2
D9	29 Apr 2020	High Tide (ft)	3
D9	29 Apr 2020	High Tide Time	1715
D9	29 Apr 2020	Low Tide (ft)	0.2
D9	29 Apr 2020	Low Tide Time	912
D9	29 Apr 2020	Comments	Algae; 5 Persons; 1 Surfer; Water turbid
D10	01 Apr 2020	Arrive Time	1147
D10	01 Apr 2020	Weather	Sunny
D10	01 Apr 2020	Wind Speed (kts)	5
D10	01 Apr 2020	Wind Dir	S
D10	01 Apr 2020	Animal Life	3 Seagulls
D10	01 Apr 2020	Floatables	None
D10	01 Apr 2020	Water Color	Green
D10	01 Apr 2020	Current Direction	N
D10	01 Apr 2020	Water Temp (C)	18.2
D10	01 Apr 2020	Wave Height Low (ft)	2
D10	01 Apr 2020	High Tide (ft)	3.1
D10	01 Apr 2020	High Tide Time	1906
D10	01 Apr 2020	Low Tide (ft)	0.4
D10	01 Apr 2020	Low Tide Time	1119
D10	01 Apr 2020	Comments	Kelp; Seagrass; Water clear
D10	08 Apr 2020	Arrive Time	935
D10	08 Apr 2020	Weather	Partly Cloudy
D10	08 Apr 2020	Wind Speed (kts)	3.2
D10	08 Apr 2020	Wind Dir	S
D10	08 Apr 2020	Animal Life	2 Seagulls
D10	08 Apr 2020	Floatables	None
D10	08 Apr 2020	Water Color	Green
D10	08 Apr 2020	Current Direction	N
D10	08 Apr 2020	Water Temp (C)	17.2
D10	08 Apr 2020	Wave Height Low (ft)	3
D10	08 Apr 2020	High Tide (ft)	5.2
D10	08 Apr 2020	High Tide Time	1003
D10	08 Apr 2020	Low Tide (ft)	-0.7
D10	08 Apr 2020	Low Tide Time	403
D10	08 Apr 2020	Comments	Kelp; Water clear
D10	15 Apr 2020	Arrive Time	857
D10	15 Apr 2020	Weather	Sunny
D10	15 Apr 2020	Wind Speed (kts)	1.9
D10	15 Apr 2020	Wind Dir	W

Station	Date	Parameter	Value
D10	15 Apr 2020	Animal Life	2 Seagulls
D10	15 Apr 2020	Floatables	None
D10	15 Apr 2020	Water Color	Green
D10	15 Apr 2020	Current Direction	N
D10	15 Apr 2020	Water Temp (C)	17.2
D10	15 Apr 2020	Wave Height Low (ft)	1
D10	15 Apr 2020	High Tide (ft)	4.1
D10	15 Apr 2020	High Tide Time	401
D10	15 Apr 2020	Low Tide (ft)	0.1
D10	15 Apr 2020	Low Tide Time	1148
D10	15 Apr 2020	Comments	Kelp; Seagrass; Debris; Water clear
D10	22 Apr 2020	Arrive Time	921
D10	22 Apr 2020	Weather	Sunny
D10	22 Apr 2020	Wind Speed (kts)	4.4
D10	22 Apr 2020	Wind Dir	W
D10	22 Apr 2020	Animal Life	1 Seagull
D10	22 Apr 2020	Floatables	Foam; Film
D10	22 Apr 2020	Water Color	Brown
D10	22 Apr 2020	Current Direction	S
D10	22 Apr 2020	Water Temp (C)	16
D10	22 Apr 2020	Wave Height Low (ft)	4
D10	22 Apr 2020	High Tide (ft)	4.3
D10	22 Apr 2020	High Tide Time	938
D10	22 Apr 2020	Low Tide (ft)	0.1
D10	22 Apr 2020	Low Tide Time	340
D10	22 Apr 2020	Comments	Kelp; Seagrass; Debris; Water turbid
D10	29 Apr 2020	Arrive Time	947
D10	29 Apr 2020	Weather	Drizzle
D10	29 Apr 2020	Wind Speed (kts)	2.9
D10	29 Apr 2020	Wind Dir	W
D10	29 Apr 2020	Animal Life	1 Shorebird
D10	29 Apr 2020	Floatables	None
D10	29 Apr 2020	Water Color	Brown
D10	29 Apr 2020	Current Direction	S
D10	29 Apr 2020	Water Temp (C)	18.1
D10	29 Apr 2020	Wave Height Low (ft)	3
D10	29 Apr 2020	High Tide (ft)	3
D10	29 Apr 2020	High Tide Time	1715
D10	29 Apr 2020	Low Tide (ft)	0.2
D10	29 Apr 2020	Low Tide Time	912
D10	29 Apr 2020	Comments	Kelp; Algae; 10 Persons; 25 Surfers; Water turbid
D11	01 Apr 2020	Arrive Time	1201
D11	01 Apr 2020	Weather	Sunny
D11	01 Apr 2020	Wind Speed (kts)	7.7
D11	01 Apr 2020	Wind Dir	SW
D11	01 Apr 2020	Animal Life	120 Terns
D11	01 Apr 2020	Floatables	None
D11	01 Apr 2020	Water Color	Green
D11	01 Apr 2020	Current Direction	N
D11	01 Apr 2020	Water Temp (C)	18
D11	01 Apr 2020	Wave Height Low (ft)	2
D11	01 Apr 2020	High Tide (ft)	3.1

Station	Date	Parameter	Value
D11	01 Apr 2020	High Tide Time	1906
D11	01 Apr 2020	Low Tide (ft)	0.4
D11	01 Apr 2020	Low Tide Time	1119
D11	01 Apr 2020	Comments	Kelp; Seagrass; 2 Persons; Water turbid
D11	08 Apr 2020	Arrive Time	1008
D11	08 Apr 2020	Weather	Cloudy
D11	08 Apr 2020	Wind Speed (kts)	9.1
D11	08 Apr 2020	Wind Dir	S
D11	08 Apr 2020	Animal Life	None
D11	08 Apr 2020	Floatables	None
D11	08 Apr 2020	Water Color	Blue
D11	08 Apr 2020	Current Direction	N
D11	08 Apr 2020	Water Temp (C)	15.3
D11	08 Apr 2020	Wave Height Low (ft)	3
D11	08 Apr 2020	High Tide (ft)	5.2
D11	08 Apr 2020	High Tide Time	1003
D11	08 Apr 2020	Low Tide (ft)	-0.7
D11	08 Apr 2020	Low Tide Time	403
D11	08 Apr 2020	Comments	1 Tractor; Water clear
D11	15 Apr 2020	Arrive Time	909
D11	15 Apr 2020	Weather	Sunny
D11	15 Apr 2020	Wind Speed (kts)	1.1
D11	15 Apr 2020	Wind Dir	N
D11	15 Apr 2020	Animal Life	1 Godwit; 1 Seagull; 100 Terns
D11	15 Apr 2020	Floatables	Foam; Film
D11	15 Apr 2020	Water Color	Brown
D11	15 Apr 2020	Current Direction	N
D11	15 Apr 2020	Water Temp (C)	18.6
D11	15 Apr 2020	Wave Height Low (ft)	2
D11	15 Apr 2020	High Tide (ft)	4.1
D11	15 Apr 2020	High Tide Time	401
D11	15 Apr 2020	Low Tide (ft)	0.1
D11	15 Apr 2020	Low Tide Time	1148
D11	15 Apr 2020	Comments	Kelp; Seagrass; Algae; Sewage-like odor; Water turbid
D11	16 Apr 2020	Arrive Time	1227
D11	16 Apr 2020	Weather	Sunny
D11	16 Apr 2020	Wind Speed (kts)	5
D11	16 Apr 2020	Wind Dir	SW
D11	16 Apr 2020	Animal Life	2 Seagulls; 250 Terns
D11	16 Apr 2020	Floatables	Foam; Film
D11	16 Apr 2020	Water Color	Brown
D11	16 Apr 2020	Current Direction	N
D11	16 Apr 2020	Water Temp (C)	19.5
D11	16 Apr 2020	Wave Height Low (ft)	3
D11	16 Apr 2020	High Tide (ft)	4.2
D11	16 Apr 2020	High Tide Time	528
D11	16 Apr 2020	Low Tide (ft)	0
D11	16 Apr 2020	Low Tide Time	1242
D11	16 Apr 2020	Comments	Resample; Kelp; Seagrass; Algae; Water turbid
D11	22 Apr 2020	Arrive Time	933
D11	22 Apr 2020	Weather	Sunny

Station	Date	Parameter	Value
D11	22 Apr 2020	Wind Speed (kts)	4.4
D11	22 Apr 2020	Wind Dir	NW
D11	22 Apr 2020	Animal Life	None
D11	22 Apr 2020	Floatables	Foam; Film
D11	22 Apr 2020	Water Color	Green
D11	22 Apr 2020	Current Direction	S
D11	22 Apr 2020	Water Temp (C)	16.7
D11	22 Apr 2020	Wave Height Low (ft)	3
D11	22 Apr 2020	High Tide (ft)	4.3
D11	22 Apr 2020	High Tide Time	938
D11	22 Apr 2020	Low Tide (ft)	0.1
D11	22 Apr 2020	Low Tide Time	340
D11	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water clear
D11	29 Apr 2020	Arrive Time	1018
D11	29 Apr 2020	Weather	Cloudy
D11	29 Apr 2020	Wind Speed (kts)	0.7
D11	29 Apr 2020	Wind Dir	W
D11	29 Apr 2020	Animal Life	8 Dogs; 3 Seagulls; 10 Terns
D11	29 Apr 2020	Floatables	None
D11	29 Apr 2020	Water Color	Brown
D11	29 Apr 2020	Current Direction	S
D11	29 Apr 2020	Water Temp (C)	20.5
D11	29 Apr 2020	Wave Height Low (ft)	4
D11	29 Apr 2020	High Tide (ft)	3
D11	29 Apr 2020	High Tide Time	1715
D11	29 Apr 2020	Low Tide (ft)	0.2
D11	29 Apr 2020	Low Tide Time	912
D11	29 Apr 2020	Comments	Kelp; 14 Persons; 18 Surfers; Water turbid
D12	01 Apr 2020	Arrive Time	1233
D12	01 Apr 2020	Weather	Sunny
D12	01 Apr 2020	Wind Speed (kts)	6
D12	01 Apr 2020	Wind Dir	SW
D12	01 Apr 2020	Animal Life	12 Seagulls
D12	01 Apr 2020	Floatables	None
D12	01 Apr 2020	Water Color	Green
D12	01 Apr 2020	Current Direction	N
D12	01 Apr 2020	Water Temp (C)	18.6
D12	01 Apr 2020	Wave Height Low (ft)	2
D12	01 Apr 2020	High Tide (ft)	3.1
D12	01 Apr 2020	High Tide Time	1906
D12	01 Apr 2020	Low Tide (ft)	0.4
D12	01 Apr 2020	Low Tide Time	1119
D12	01 Apr 2020	Comments	Kelp; Seagrass; 1 Person; Water clear
D12	08 Apr 2020	Arrive Time	1041
D12	08 Apr 2020	Weather	Moderate Rain
D12	08 Apr 2020	Wind Speed (kts)	8.3
D12	08 Apr 2020	Wind Dir	S
D12	08 Apr 2020	Animal Life	2 Godwits; 7 Seagulls
D12	08 Apr 2020	Floatables	None
D12	08 Apr 2020	Water Color	Blue
D12	08 Apr 2020	Current Direction	N
D12	08 Apr 2020	Water Temp (C)	15.4

Station	Date	Parameter	Value
D12	08 Apr 2020	Wave Height Low (ft)	2
D12	08 Apr 2020	High Tide (ft)	5.2
D12	08 Apr 2020	High Tide Time	1003
D12	08 Apr 2020	Low Tide (ft)	-0.2
D12	08 Apr 2020	Low Tide Time	1608
D12	08 Apr 2020	Comments	Kelp; Water clear
D12	15 Apr 2020	Arrive Time	957
D12	15 Apr 2020	Weather	Sunny
D12	15 Apr 2020	Wind Speed (kts)	3.8
D12	15 Apr 2020	Wind Dir	NW
D12	15 Apr 2020	Animal Life	2 Cormorants; 1 Godwit; 1 Seagull
D12	15 Apr 2020	Floatables	None
D12	15 Apr 2020	Water Color	Green
D12	15 Apr 2020	Current Direction	S
D12	15 Apr 2020	Water Temp (C)	18
D12	15 Apr 2020	Wave Height Low (ft)	1
D12	15 Apr 2020	High Tide (ft)	4.1
D12	15 Apr 2020	High Tide Time	401
D12	15 Apr 2020	Low Tide (ft)	0.1
D12	15 Apr 2020	Low Tide Time	1148
D12	15 Apr 2020	Comments	Water clear
D12	22 Apr 2020	Arrive Time	956
D12	22 Apr 2020	Weather	Sunny
D12	22 Apr 2020	Wind Speed (kts)	6
D12	22 Apr 2020	Wind Dir	W
D12	22 Apr 2020	Animal Life	3 Seagulls
D12	22 Apr 2020	Floatables	Foam; Film
D12	22 Apr 2020	Water Color	Brown
D12	22 Apr 2020	Current Direction	S
D12	22 Apr 2020	Water Temp (C)	18.3
D12	22 Apr 2020	Wave Height Low (ft)	3
D12	22 Apr 2020	High Tide (ft)	4.3
D12	22 Apr 2020	High Tide Time	938
D12	22 Apr 2020	Low Tide (ft)	0.7
D12	22 Apr 2020	Low Tide Time	1529
D12	22 Apr 2020	Comments	Kelp; Seagrass; Algae; Water turbid
D12	29 Apr 2020	Arrive Time	1046
D12	29 Apr 2020	Weather	Cloudy
D12	29 Apr 2020	Wind Speed (kts)	0.7
D12	29 Apr 2020	Wind Dir	W
D12	29 Apr 2020	Animal Life	4 Godwits; 18 Seagulls
D12	29 Apr 2020	Floatables	None
D12	29 Apr 2020	Water Color	Red
D12	29 Apr 2020	Current Direction	S
D12	29 Apr 2020	Water Temp (C)	21.2
D12	29 Apr 2020	Wave Height Low (ft)	2
D12	29 Apr 2020	High Tide (ft)	3
D12	29 Apr 2020	High Tide Time	1715
D12	29 Apr 2020	Low Tide (ft)	0.2
D12	29 Apr 2020	Low Tide Time	912
D12	29 Apr 2020	Comments	Kelp; 2 Joggers; 35 Persons; 6 Surfers; Water turbid

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

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

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

* Geometric mean calculated using n<5

Table 3.4

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
10 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Apr 2020	IC	IC	IC	IC	IC	IC	IC	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
01 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
10 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Apr 2020	IC	IC	IC	IC	IC	IC	IC	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
01 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
10 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Apr 2020	IC	IC	IC	IC	IC	IC	IC	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
01 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
10 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
14 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
21 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC
28 Apr 2020	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.8

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

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
A1	01 Apr 2020	725	1	<2	<2	<2	1.00	15.1	77.86	9.2	33.46	8.0
A1	01 Apr 2020	725	12	<2	<2	<2	1.00	12.6	86.60	6.1	33.63	7.8
A1	01 Apr 2020	725	18	44	10e	<2	0.23	11.3	87.05	4.8	33.75	7.6
A1	10 Apr 2020	810	1	80e	10e	16e	0.12	16.2	64.89	9.2	33.06	8.2
A1	10 Apr 2020	810	12	26e	2e	10e	0.08	16.0	75.36	9.5	33.30	8.2
A1	10 Apr 2020	810	18	20e	4e	8e	0.20	15.8	79.90	9.3	33.41	8.2
A1	14 Apr 2020	737	1	2e	<2	2e	1.00	16.2	75.18	9.8	33.09	8.2
A1	14 Apr 2020	737	12	4e	<2	<2	0.50	15.1	86.35	7.9	33.41	8.0
A1	14 Apr 2020	737	18	<20	<2	<2	0.10	13.5	87.55	6.3	33.57	7.8
A1	21 Apr 2020	905	1	<2	4e	<2	2.00	13.8	77.34	7.3	33.52	8.0
A1	21 Apr 2020	905	12	28e	<2	4e	0.07	11.1	90.28	4.4	33.82	7.6
A1	21 Apr 2020	905	18	68	10e	2e	0.15	10.9	88.13	4.1	33.83	7.6
A1	28 Apr 2020	748	1	<200	<20	10e	0.10	17.6	19.90	9.5	33.57	8.2
A1	28 Apr 2020	748	12	<20	12e	12e	0.60	14.4	68.04	7.5	33.70	8.0
A1	28 Apr 2020	748	18	<20	6e	10e	0.30	12.6	75.60	5.4	33.72	7.7
A6	01 Apr 2020	756	1	<20	12e	20e	0.60	15.0	79.62	8.8	33.42	8.1
A6	01 Apr 2020	756	12	10e	4e	2e	0.40	12.0	89.96	5.5	33.66	7.7
A6	01 Apr 2020	756	18	16e	4e	4e	0.25	11.9	89.92	5.3	33.67	7.7
A6	10 Apr 2020	835	1	<20	6e	16e	0.30	15.8	76.07	8.5	33.22	8.2
A6	10 Apr 2020	835	12	6e	8e	<2	1.33	15.7	78.54	9.0	33.33	8.2
A6	10 Apr 2020	835	18	60e	18e	60e	0.30	15.6	80.87	8.7	33.38	8.2
A6	14 Apr 2020	804	1	2e	2e	<2	1.00	16.3	61.59	9.7	32.76	8.2
A6	14 Apr 2020	804	12	<2	<2	<2	1.00	15.2	88.18	7.9	33.38	8.1
A6	14 Apr 2020	804	18	2e	<2	<2	1.00	14.9	89.19	7.2	33.41	8.0
A6	21 Apr 2020	937	1	20e	2e	<2	0.10	15.4	62.37	9.2	33.35	8.2
A6	21 Apr 2020	937	12	<200	4e	<2	0.02	11.1	90.30	4.6	33.95	7.7
A6	21 Apr 2020	937	18	20e	6e	4e	0.30	11.0	89.32	4.2	33.84	7.7
A6	28 Apr 2020	819	1	<20	<2	<2	0.10	17.9	35.51	10.9	33.54	8.3
A6	28 Apr 2020	819	12	<20	<2	2e	0.10	14.3	78.58	7.3	33.59	7.9
A6	28 Apr 2020	819	18	<20	<2	2e	0.10	12.0	82.82	5.0	33.80	7.7
A7	01 Apr 2020	739	1	<2	2e	<2	1.00	14.8	80.39	9.0	33.47	8.1
A7	01 Apr 2020	739	12	4e	<2	<2	0.50	12.4	89.22	5.9	33.66	7.8
A7	01 Apr 2020	739	18	40e	2e	2e	0.05	12.0	88.60	5.2	33.67	7.7
A7	10 Apr 2020	821	1	12e	4e	4e	0.33	15.9	69.28	9.1	33.25	8.2
A7	10 Apr 2020	821	12	<20	12e	6e	0.60	15.8	75.67	9.1	33.32	8.2
A7	10 Apr 2020	821	18	2e	4e	<2	2.00	15.6	83.13	8.6	33.42	8.2

Station	Date	Time	Depth	Total	Fecal	Enterococci	F:T	Temp	XMS	DO	Sal	pH
A7	14 Apr 2020	748	1	<20	<2	<2	0.10	16.4	81.62	7.7	32.84	8.2
A7	14 Apr 2020	748	12	2e	<2	<2	1.00	15.4	84.15	8.3	33.35	8.1
A7	14 Apr 2020	748	18	2e	<2	<2	1.00	14.5	87.85	7.2	33.57	8.0
A7	21 Apr 2020	922	1	<2	<2	<2	1.00	15.7	75.78	9.5	33.15	8.2
A7	21 Apr 2020	922	12	16e	4e	<2	0.25	11.1	89.73	4.3	33.83	7.7
A7	21 Apr 2020	922	18	92	20e	8e	0.22	10.8	87.23	4.0	33.86	7.6
A7	28 Apr 2020	802	1	<20	6e	6e	0.30	17.1	63.81	10.8	33.58	8.3
A7	28 Apr 2020	802	12	<20	2e	2e	0.10	14.3	77.98	7.2	33.66	8.0
A7	28 Apr 2020	802	18	2e	<2	<2	1.00	12.5	83.47	5.5	33.91	7.8
C4	01 Apr 2020	906	1	2e	<2	<2	1.00	15.1	74.91	7.5	33.37	8.0
C4	01 Apr 2020	906	3	<20	2e	2e	0.10	15.1	75.64	7.5	33.37	8.0
C4	01 Apr 2020	906	9	<2	2e	<2	1.00	12.4	86.70	5.0	33.71	7.7
C4	10 Apr 2020	952	1	34e	16e	8e	0.47	16.2	66.46	9.0	33.07	8.3
C4	10 Apr 2020	952	3	140e	16e	10e	0.11	16.2	66.88	9.0	33.11	8.3
C4	10 Apr 2020	952	9	80e	16e	14e	0.20	16.2	66.71	9.0	33.12	8.3
C4	14 Apr 2020	909	1	<2	<2	<2	1.00	16.4	78.43	8.7	32.83	8.2
C4	14 Apr 2020	909	3	2e	<2	<2	1.00	16.4	80.02	8.6	32.84	8.2
C4	14 Apr 2020	909	9	6e	<2	<2	0.33	15.7	82.91	7.3	33.29	8.1
C4	21 Apr 2020	1056	1	<20	2e	<2	0.10	16.4	56.52	8.3	33.23	8.1
C4	21 Apr 2020	1056	3	<20	2e	<2	0.10	15.9	69.77	9.4	33.27	8.2
C4	21 Apr 2020	1056	9	<2	2e	<2	1.00	11.6	81.68	4.1	33.82	7.7
C4	28 Apr 2020	938	1	<20	<2	2e	0.10	17.8	46.21	9.6	33.21	8.2
C4	28 Apr 2020	938	3	20e	2e	4e	0.10	17.4	50.71	9.4	33.37	8.2
C4	28 Apr 2020	938	9	40e	<2	6e	0.05	14.7	72.70	6.5	33.79	8.0
C5	01 Apr 2020	855	1	<20	<2	<2	0.10	15.3	77.50	9.2	33.45	8.1
C5	01 Apr 2020	855	3	<20	<2	<2	0.10	15.3	75.80	9.2	33.45	8.1
C5	01 Apr 2020	855	9	2e	<2	<2	1.00	12.8	88.06	5.5	33.72	7.8
C5	10 Apr 2020	942	1	<20	10e	2e	0.50	15.9	62.37	9.3	33.24	8.3
C5	10 Apr 2020	942	3	10e	6e	4e	0.60	15.9	64.48	9.4	33.24	8.3
C5	10 Apr 2020	942	9	<20	8e	2e	0.40	15.9	65.33	9.3	33.24	8.3
C5	14 Apr 2020	859	1	20e	2e	4e	0.10	16.4	78.68	8.6	32.72	8.2
C5	14 Apr 2020	859	3	<20	2e	2e	0.10	16.2	79.14	8.4	32.78	8.2
C5	14 Apr 2020	859	9	4e	<2	<2	0.50	15.2	87.47	6.6	33.43	8.0
C5	21 Apr 2020	1045	1	<2	<2	<2	1.00	16.1	77.28	9.6	33.26	8.2
C5	21 Apr 2020	1045	3	<2	<2	<2	1.00	15.7	60.51	9.1	33.31	8.2
C5	21 Apr 2020	1045	9	4e	<2	<2	0.50	11.9	87.66	4.5	33.79	7.7
C5	28 Apr 2020	927	1	40e	<20	4e	0.50	17.6	51.61	11.2	33.56	8.4
C5	28 Apr 2020	927	3	40e	4e	<20	0.10	17.5	56.33	11.2	33.57	8.3
C5	28 Apr 2020	927	9	<20	2e	<2	0.10	13.9	58.00	5.3	33.61	7.7
C6	01 Apr 2020	845	1	<2	<2	<2	1.00	15.3	75.79	8.9	33.44	8.1
C6	01 Apr 2020	845	3	<2	<2	<2	1.00	15.3	73.04	9.0	33.44	8.1

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
C6	01 Apr 2020	845	9	2e	<2	<2	1.00	13.1	88.19	5.1	33.60	7.7
C6	10 Apr 2020	930	1	40e	6e	6e	0.15	15.9	61.35	8.7	33.14	8.3
C6	10 Apr 2020	930	3	<20	4e	<2	0.20	15.9	64.24	8.8	33.14	8.3
C6	10 Apr 2020	930	9	2e	<2	2e	1.00	15.8	74.05	8.1	33.29	8.2
C6	14 Apr 2020	848	1	20e	6e	4e	0.30	16.2	79.36	8.9	32.76	8.2
C6	14 Apr 2020	848	3	80e	2e	4e	0.02	16.2	79.31	8.8	32.78	8.2
C6	14 Apr 2020	848	9	40e	4e	<2	0.10	15.7	85.15	6.8	33.20	8.0
C6	21 Apr 2020	1031	1	<2	<2	<2	1.00	16.0	58.38	10.8	33.31	8.3
C6	21 Apr 2020	1031	3	<20	2e	<2	0.10	15.6	66.39	10.0	33.38	8.3
C6	21 Apr 2020	1031	9	<2	2e	<2	1.00	12.0	87.13	4.8	33.76	7.8
C6	28 Apr 2020	914	1	<200	2e	<2	0.01	18.5	2.11	9.8	33.55	8.3
C6	28 Apr 2020	914	3	200e	<2	<2	0.01	18.0	29.25	8.9	33.56	8.3
C6	28 Apr 2020	914	9	<20	<2	<2	0.10	12.7	76.93	5.2	33.77	7.8
C7	01 Apr 2020	816	1	<2	<2	<2	1.00	15.0	81.88	8.6	33.45	8.0
C7	01 Apr 2020	816	12	6e	2e	2e	0.33	12.3	89.32	5.7	33.65	7.8
C7	01 Apr 2020	816	18	18e	<2	2e	0.11	12.0	89.83	5.4	33.67	7.7
C7	10 Apr 2020	856	1	2e	<2	2e	1.00	15.8	70.45	8.9	33.27	8.2
C7	10 Apr 2020	856	12	10e	<2	2e	0.20	15.6	79.70	8.8	33.39	8.2
C7	10 Apr 2020	856	18	<2	<2	4e	1.00	15.4	86.48	8.2	33.45	8.1
C7	14 Apr 2020	820	1	60e	10e	<2	0.17	16.3	74.73	9.4	31.31	8.2
C7	14 Apr 2020	820	12	6e	<2	<2	0.33	15.9	79.90	9.2	33.15	8.2
C7	14 Apr 2020	820	18	8e	<2	<2	0.25	13.8	89.85	6.6	33.57	7.9
C7	21 Apr 2020	957	1	<2	<2	<2	1.00	16.2	76.13	10.4	33.33	8.3
C7	21 Apr 2020	957	12	14e	<2	<2	0.14	11.2	90.02	4.5	33.84	7.7
C7	21 Apr 2020	957	18	34e	8e	4e	0.24	11.1	88.10	4.2	33.83	7.7
C7	28 Apr 2020	840	1	<20	<2	<2	0.10	18.4	34.56	12.8	33.50	8.4
C7	28 Apr 2020	840	12	<20	<2	<2	0.10	12.1	74.58	4.9	33.77	7.7
C7	28 Apr 2020	840	18	<2	<2	<2	1.00	11.8	79.28	4.5	33.79	7.7
C8	01 Apr 2020	827	1	<2	<2	<2	1.00	15.3	79.87	8.9	33.42	8.1
C8	01 Apr 2020	827	12	2e	4e	<2	2.00	12.0	89.34	5.4	33.68	7.7
C8	01 Apr 2020	827	18	26e	8e	<2	0.31	11.2	88.04	4.8	33.74	7.7
C8	10 Apr 2020	909	1	4e	2e	2e	0.50	15.6	71.95	9.1	33.26	8.2
C8	10 Apr 2020	909	12	4e	<2	<2	0.50	15.6	83.79	9.2	33.34	8.2
C8	10 Apr 2020	909	18	4e	<2	<2	0.50	15.5	84.30	8.9	33.42	8.2
C8	14 Apr 2020	832	1	200e	60e	20e	0.30	16.3	68.52	9.7	31.84	8.2
C8	14 Apr 2020	832	12	<2	<2	<2	1.00	15.5	82.27	9.1	33.40	8.1
C8	14 Apr 2020	832	18	20e	<2	<2	0.10	13.9	87.15	6.9	33.65	7.9
C8	21 Apr 2020	1011	1	<2	<2	2e	1.00	16.0	78.42	10.6	33.31	8.3
C8	21 Apr 2020	1011	12	8e	<2	<2	0.25	11.5	84.62	4.6	33.88	7.7
C8	21 Apr 2020	1011	18	34e	2e	4e	0.06	11.2	87.42	4.2	33.82	7.7
C8	28 Apr 2020	853	1	<200	<2	<2	0.01	18.2	50.74	12.8	33.49	8.4

Station	Date	Time	Depth	Total	Fecal	Enteroc	F:T	Temp	XMS	DO	Sal	pH
C8	28 Apr 2020	853	12	<2	<2	<2	1.00	11.6	81.10	4.5	33.79	7.6
C8	28 Apr 2020	853	18	<20	<2	2e	0.10	11.6	81.11	4.3	33.78	7.6

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	01 Apr 2020	Depth (m)	18
A1	01 Apr 2020	Arrive Time	725
A1	01 Apr 2020	Depart Time	732
A1	01 Apr 2020	Air Temp (C)	14
A1	01 Apr 2020	Weather	Fog
A1	01 Apr 2020	Visibility (mi)	3
A1	01 Apr 2020	Wind Speed (kts)	8
A1	01 Apr 2020	Wind Dir	NE
A1	01 Apr 2020	Water Color	Green
A1	01 Apr 2020	Wave Ht Low (ft)	3
A1	01 Apr 2020	Wave Period (sec)	11
A1	01 Apr 2020	Sea State	Calm
A1	01 Apr 2020	High Tide (ft)	4.16
A1	01 Apr 2020	High Tide Time	248
A1	01 Apr 2020	Low Tide (ft)	0.39
A1	01 Apr 2020	Low Tide Time	1119
A1	01 Apr 2020	Comments	none
A1	14 Apr 2020	Depth (m)	18
A1	14 Apr 2020	Arrive Time	737
A1	14 Apr 2020	Depart Time	741
A1	14 Apr 2020	Air Temp (C)	15
A1	14 Apr 2020	Weather	Partly Cloudy
A1	14 Apr 2020	Visibility (mi)	8
A1	14 Apr 2020	Wind Speed (kts)	4
A1	14 Apr 2020	Wind Dir	W
A1	14 Apr 2020	Water Color	Greenish-Brown
A1	14 Apr 2020	Wave Ht Low (ft)	3
A1	14 Apr 2020	Wave Period (sec)	4
A1	14 Apr 2020	Sea State	Light chop
A1	14 Apr 2020	High Tide (ft)	4.39
A1	14 Apr 2020	High Tide Time	224
A1	14 Apr 2020	Low Tide (ft)	0.12
A1	14 Apr 2020	Low Tide Time	1031
A1	14 Apr 2020	Comments	none
A1	21 Apr 2020	Depth (m)	19
A1	21 Apr 2020	Arrive Time	905
A1	21 Apr 2020	Depart Time	917
A1	21 Apr 2020	Air Temp (C)	16
A1	21 Apr 2020	Weather	Clear
A1	21 Apr 2020	Visibility (mi)	12
A1	21 Apr 2020	Wind Speed (kts)	2
A1	21 Apr 2020	Wind Dir	S
A1	21 Apr 2020	Water Color	Brownish-Green
A1	21 Apr 2020	Wave Ht Low (ft)	5
A1	21 Apr 2020	Wave Period (sec)	13
A1	21 Apr 2020	Sea State	Light chop
A1	21 Apr 2020	High Tide (ft)	4.39
A1	21 Apr 2020	High Tide Time	904
A1	21 Apr 2020	Low Tide (ft)	0.49

Station	Date	Parameter	Value
A1	21 Apr 2020	Low Tide Time	1506
A1	21 Apr 2020	Comments	Lobster floats
A1	28 Apr 2020	Depth (m)	18
A1	28 Apr 2020	Arrive Time	748
A1	28 Apr 2020	Depart Time	755
A1	28 Apr 2020	Air Temp (C)	17
A1	28 Apr 2020	Weather	Fog
A1	28 Apr 2020	Visibility (mi)	3
A1	28 Apr 2020	Wind Speed (kts)	5
A1	28 Apr 2020	Wind Dir	E
A1	28 Apr 2020	Water Color	Reddish-Brown
A1	28 Apr 2020	Wave Ht Low (ft)	3
A1	28 Apr 2020	Wave Period (sec)	9
A1	28 Apr 2020	Sea State	Light chop
A1	28 Apr 2020	High Tide (ft)	2.78
A1	28 Apr 2020	High Tide Time	1511
A1	28 Apr 2020	Low Tide (ft)	0.2
A1	28 Apr 2020	Low Tide Time	755
A1	28 Apr 2020	Comments	Orange brown water due to algal bloom; Red tide
A6	01 Apr 2020	Depth (m)	18
A6	01 Apr 2020	Arrive Time	756
A6	01 Apr 2020	Depart Time	807
A6	01 Apr 2020	Air Temp (C)	15
A6	01 Apr 2020	Weather	Fog
A6	01 Apr 2020	Visibility (mi)	3
A6	01 Apr 2020	Wind Speed (kts)	6
A6	01 Apr 2020	Wind Dir	SE
A6	01 Apr 2020	Water Color	Green
A6	01 Apr 2020	Wave Ht Low (ft)	3
A6	01 Apr 2020	Wave Period (sec)	11
A6	01 Apr 2020	Sea State	Calm
A6	01 Apr 2020	High Tide (ft)	4.16
A6	01 Apr 2020	High Tide Time	248
A6	01 Apr 2020	Low Tide (ft)	0.39
A6	01 Apr 2020	Low Tide Time	1119
A6	01 Apr 2020	Comments	Kelp
A6	14 Apr 2020	Depth (m)	6
A6	14 Apr 2020	Arrive Time	804
A6	14 Apr 2020	Depart Time	812
A6	14 Apr 2020	Air Temp (C)	15
A6	14 Apr 2020	Weather	Partly Cloudy
A6	14 Apr 2020	Visibility (mi)	8
A6	14 Apr 2020	Wind Speed (kts)	7
A6	14 Apr 2020	Wind Dir	W
A6	14 Apr 2020	Water Color	Greenish-Brown
A6	14 Apr 2020	Wave Ht Low (ft)	3
A6	14 Apr 2020	Wave Period (sec)	4
A6	14 Apr 2020	Sea State	Light chop
A6	14 Apr 2020	High Tide (ft)	4.39
A6	14 Apr 2020	High Tide Time	224
A6	14 Apr 2020	Low Tide (ft)	0.12
A6	14 Apr 2020	Low Tide Time	1031

Station	Date	Parameter	Value
A6	14 Apr 2020	Comments	Kelp
A6	21 Apr 2020	Depth (m)	19
A6	21 Apr 2020	Arrive Time	937
A6	21 Apr 2020	Depart Time	948
A6	21 Apr 2020	Air Temp (C)	16
A6	21 Apr 2020	Weather	Clear
A6	21 Apr 2020	Visibility (mi)	12
A6	21 Apr 2020	Wind Speed (kts)	1
A6	21 Apr 2020	Wind Dir	NE
A6	21 Apr 2020	Water Color	Brown
A6	21 Apr 2020	Wave Ht Low (ft)	5
A6	21 Apr 2020	Wave Period (sec)	13
A6	21 Apr 2020	Sea State	Light chop
A6	21 Apr 2020	High Tide (ft)	4.39
A6	21 Apr 2020	High Tide Time	904
A6	21 Apr 2020	Low Tide (ft)	0.49
A6	21 Apr 2020	Low Tide Time	1506
A6	21 Apr 2020	Comments	Possible red tide; Kelp
A6	28 Apr 2020	Depth (m)	18
A6	28 Apr 2020	Arrive Time	819
A6	28 Apr 2020	Depart Time	827
A6	28 Apr 2020	Air Temp (C)	17
A6	28 Apr 2020	Weather	Fog
A6	28 Apr 2020	Visibility (mi)	3
A6	28 Apr 2020	Wind Speed (kts)	8
A6	28 Apr 2020	Wind Dir	SE
A6	28 Apr 2020	Water Color	Reddish-Brown
A6	28 Apr 2020	Wave Ht Low (ft)	3
A6	28 Apr 2020	Wave Period (sec)	9
A6	28 Apr 2020	Sea State	Calm
A6	28 Apr 2020	High Tide (ft)	2.78
A6	28 Apr 2020	High Tide Time	1511
A6	28 Apr 2020	Low Tide (ft)	0.2
A6	28 Apr 2020	Low Tide Time	755
A6	28 Apr 2020	Comments	Red tide
A7	01 Apr 2020	Depth (m)	18
A7	01 Apr 2020	Arrive Time	739
A7	01 Apr 2020	Depart Time	750
A7	01 Apr 2020	Air Temp (C)	15
A7	01 Apr 2020	Weather	Fog
A7	01 Apr 2020	Visibility (mi)	3
A7	01 Apr 2020	Wind Speed (kts)	10
A7	01 Apr 2020	Wind Dir	E
A7	01 Apr 2020	Water Color	Green
A7	01 Apr 2020	Wave Ht Low (ft)	3
A7	01 Apr 2020	Wave Period (sec)	11
A7	01 Apr 2020	Sea State	Calm
A7	01 Apr 2020	High Tide (ft)	4.16
A7	01 Apr 2020	High Tide Time	248
A7	01 Apr 2020	Low Tide (ft)	0.39
A7	01 Apr 2020	Low Tide Time	1119
A7	01 Apr 2020	Comments	Kelp; Lobster floats

Station	Date	Parameter	Value
A7	14 Apr 2020	Depth (m)	18
A7	14 Apr 2020	Arrive Time	748
A7	14 Apr 2020	Depart Time	753
A7	14 Apr 2020	Air Temp (C)	15
A7	14 Apr 2020	Weather	Partly Cloudy
A7	14 Apr 2020	Visibility (mi)	8
A7	14 Apr 2020	Wind Speed (kts)	5
A7	14 Apr 2020	Wind Dir	W
A7	14 Apr 2020	Water Color	Greenish-Brown
A7	14 Apr 2020	Wave Ht Low (ft)	3
A7	14 Apr 2020	Wave Period (sec)	4
A7	14 Apr 2020	Sea State	Light chop
A7	14 Apr 2020	High Tide (ft)	4.39
A7	14 Apr 2020	High Tide Time	224
A7	14 Apr 2020	Low Tide (ft)	0.12
A7	14 Apr 2020	Low Tide Time	1031
A7	14 Apr 2020	Comments	none
A7	21 Apr 2020	Depth (m)	21
A7	21 Apr 2020	Arrive Time	922
A7	21 Apr 2020	Depart Time	929
A7	21 Apr 2020	Air Temp (C)	16
A7	21 Apr 2020	Weather	Clear
A7	21 Apr 2020	Visibility (mi)	12
A7	21 Apr 2020	Wind Speed (kts)	3
A7	21 Apr 2020	Wind Dir	N
A7	21 Apr 2020	Water Color	Brownish-Green
A7	21 Apr 2020	Wave Ht Low (ft)	5
A7	21 Apr 2020	Wave Period (sec)	13
A7	21 Apr 2020	Sea State	Light chop
A7	21 Apr 2020	High Tide (ft)	4.39
A7	21 Apr 2020	High Tide Time	904
A7	21 Apr 2020	Low Tide (ft)	0.49
A7	21 Apr 2020	Low Tide Time	1506
A7	21 Apr 2020	Comments	Kelp
A7	28 Apr 2020	Depth (m)	18
A7	28 Apr 2020	Arrive Time	802
A7	28 Apr 2020	Depart Time	811
A7	28 Apr 2020	Air Temp (C)	17
A7	28 Apr 2020	Weather	Fog
A7	28 Apr 2020	Visibility (mi)	3
A7	28 Apr 2020	Wind Speed (kts)	4
A7	28 Apr 2020	Wind Dir	E
A7	28 Apr 2020	Water Color	Reddish-Brown
A7	28 Apr 2020	Wave Ht Low (ft)	3
A7	28 Apr 2020	Wave Period (sec)	9
A7	28 Apr 2020	Sea State	Light chop
A7	28 Apr 2020	High Tide (ft)	2.78
A7	28 Apr 2020	High Tide Time	1511
A7	28 Apr 2020	Low Tide (ft)	0.2
A7	28 Apr 2020	Low Tide Time	755
A7	28 Apr 2020	Comments	Orange brown algae bloom; Less intense than A1; Red tide

Station	Date	Parameter	Value
C4	01 Apr 2020	Depth (m)	9
C4	01 Apr 2020	Arrive Time	906
C4	01 Apr 2020	Depart Time	910
C4	01 Apr 2020	Air Temp (C)	15
C4	01 Apr 2020	Weather	Partly Cloudy
C4	01 Apr 2020	Visibility (mi)	8
C4	01 Apr 2020	Wind Speed (kts)	11
C4	01 Apr 2020	Wind Dir	N
C4	01 Apr 2020	Water Color	Brown
C4	01 Apr 2020	Wave Ht Low (ft)	3
C4	01 Apr 2020	Wave Period (sec)	11
C4	01 Apr 2020	Sea State	Calm
C4	01 Apr 2020	High Tide (ft)	4.16
C4	01 Apr 2020	High Tide Time	248
C4	01 Apr 2020	Low Tide (ft)	0.39
C4	01 Apr 2020	Low Tide Time	1119
C4	01 Apr 2020	Comments	Kelp
C4	14 Apr 2020	Depth (m)	10
C4	14 Apr 2020	Arrive Time	909
C4	14 Apr 2020	Depart Time	914
C4	14 Apr 2020	Air Temp (C)	16
C4	14 Apr 2020	Weather	Haze
C4	14 Apr 2020	Visibility (mi)	8
C4	14 Apr 2020	Wind Speed (kts)	4
C4	14 Apr 2020	Wind Dir	W
C4	14 Apr 2020	Water Color	Brown
C4	14 Apr 2020	Wave Ht Low (ft)	3
C4	14 Apr 2020	Wave Period (sec)	4
C4	14 Apr 2020	Sea State	Light chop
C4	14 Apr 2020	High Tide (ft)	4.39
C4	14 Apr 2020	High Tide Time	224
C4	14 Apr 2020	Low Tide (ft)	0.12
C4	14 Apr 2020	Low Tide Time	1031
C4	14 Apr 2020	Comments	Kelp
C4	21 Apr 2020	Depth (m)	11
C4	21 Apr 2020	Arrive Time	1056
C4	21 Apr 2020	Depart Time	1102
C4	21 Apr 2020	Air Temp (C)	16
C4	21 Apr 2020	Weather	Clear
C4	21 Apr 2020	Visibility (mi)	12
C4	21 Apr 2020	Wind Speed (kts)	1
C4	21 Apr 2020	Wind Dir	N
C4	21 Apr 2020	Water Color	Brown
C4	21 Apr 2020	Wave Ht Low (ft)	5
C4	21 Apr 2020	Wave Period (sec)	13
C4	21 Apr 2020	Sea State	Light chop
C4	21 Apr 2020	High Tide (ft)	4.39
C4	21 Apr 2020	High Tide Time	904
C4	21 Apr 2020	Low Tide (ft)	0.49
C4	21 Apr 2020	Low Tide Time	1506
C4	21 Apr 2020	Comments	Possible red tide
C4	28 Apr 2020	Depth (m)	10

Station	Date	Parameter	Value
C4	28 Apr 2020	Arrive Time	938
C4	28 Apr 2020	Depart Time	942
C4	28 Apr 2020	Air Temp (C)	17
C4	28 Apr 2020	Weather	Continuous layer of clouds
C4	28 Apr 2020	Visibility (mi)	3
C4	28 Apr 2020	Wind Speed (kts)	2
C4	28 Apr 2020	Wind Dir	SE
C4	28 Apr 2020	Water Color	Reddish-Brown
C4	28 Apr 2020	Wave Ht Low (ft)	3
C4	28 Apr 2020	Wave Period (sec)	9
C4	28 Apr 2020	Sea State	Calm
C4	28 Apr 2020	High Tide (ft)	2.78
C4	28 Apr 2020	High Tide Time	1511
C4	28 Apr 2020	Low Tide (ft)	0.2
C4	28 Apr 2020	Low Tide Time	755
C4	28 Apr 2020	Comments	Red tide
C5	01 Apr 2020	Depth (m)	9
C5	01 Apr 2020	Arrive Time	855
C5	01 Apr 2020	Depart Time	900
C5	01 Apr 2020	Air Temp (C)	15
C5	01 Apr 2020	Weather	Haze
C5	01 Apr 2020	Visibility (mi)	8
C5	01 Apr 2020	Wind Speed (kts)	6
C5	01 Apr 2020	Wind Dir	E
C5	01 Apr 2020	Water Color	Brown
C5	01 Apr 2020	Wave Ht Low (ft)	3
C5	01 Apr 2020	Wave Period (sec)	11
C5	01 Apr 2020	Sea State	Calm
C5	01 Apr 2020	High Tide (ft)	4.16
C5	01 Apr 2020	High Tide Time	248
C5	01 Apr 2020	Low Tide (ft)	0.39
C5	01 Apr 2020	Low Tide Time	1119
C5	01 Apr 2020	Comments	Kelp
C5	14 Apr 2020	Depth (m)	9
C5	14 Apr 2020	Arrive Time	859
C5	14 Apr 2020	Depart Time	903
C5	14 Apr 2020	Air Temp (C)	15
C5	14 Apr 2020	Weather	Haze
C5	14 Apr 2020	Visibility (mi)	8
C5	14 Apr 2020	Wind Speed (kts)	6
C5	14 Apr 2020	Wind Dir	W
C5	14 Apr 2020	Water Color	Brown
C5	14 Apr 2020	Wave Ht Low (ft)	3
C5	14 Apr 2020	Wave Period (sec)	4
C5	14 Apr 2020	Sea State	Light chop
C5	14 Apr 2020	High Tide (ft)	4.39
C5	14 Apr 2020	High Tide Time	224
C5	14 Apr 2020	Low Tide (ft)	0.12
C5	14 Apr 2020	Low Tide Time	1031
C5	14 Apr 2020	Comments	Kelp
C5	21 Apr 2020	Depth (m)	11
C5	21 Apr 2020	Arrive Time	1045

Station	Date	Parameter	Value
C5	21 Apr 2020	Depart Time	1050
C5	21 Apr 2020	Air Temp (C)	16
C5	21 Apr 2020	Weather	Clear
C5	21 Apr 2020	Visibility (mi)	12
C5	21 Apr 2020	Wind Speed (kts)	0
C5	21 Apr 2020	Wind Dir	
C5	21 Apr 2020	Water Color	Brown
C5	21 Apr 2020	Wave Ht Low (ft)	5
C5	21 Apr 2020	Wave Period (sec)	13
C5	21 Apr 2020	Sea State	Light chop
C5	21 Apr 2020	High Tide (ft)	4.39
C5	21 Apr 2020	High Tide Time	904
C5	21 Apr 2020	Low Tide (ft)	0.49
C5	21 Apr 2020	Low Tide Time	1506
C5	21 Apr 2020	Comments	Possible red tide
C5	28 Apr 2020	Depth (m)	9
C5	28 Apr 2020	Arrive Time	927
C5	28 Apr 2020	Depart Time	932
C5	28 Apr 2020	Air Temp (C)	17
C5	28 Apr 2020	Weather	Continuous layer of clouds
C5	28 Apr 2020	Visibility (mi)	3
C5	28 Apr 2020	Wind Speed (kts)	1
C5	28 Apr 2020	Wind Dir	SE
C5	28 Apr 2020	Water Color	Reddish-Brown
C5	28 Apr 2020	Wave Ht Low (ft)	3
C5	28 Apr 2020	Wave Period (sec)	9
C5	28 Apr 2020	Sea State	Calm
C5	28 Apr 2020	High Tide (ft)	2.78
C5	28 Apr 2020	High Tide Time	1511
C5	28 Apr 2020	Low Tide (ft)	0.2
C5	28 Apr 2020	Low Tide Time	755
C5	28 Apr 2020	Comments	ChlA maxed out; Algal superbloom; Red tide
C6	01 Apr 2020	Depth (m)	9
C6	01 Apr 2020	Arrive Time	845
C6	01 Apr 2020	Depart Time	849
C6	01 Apr 2020	Air Temp (C)	15
C6	01 Apr 2020	Weather	Haze
C6	01 Apr 2020	Visibility (mi)	8
C6	01 Apr 2020	Wind Speed (kts)	8
C6	01 Apr 2020	Wind Dir	E
C6	01 Apr 2020	Water Color	Brown
C6	01 Apr 2020	Wave Ht Low (ft)	3
C6	01 Apr 2020	Wave Period (sec)	11
C6	01 Apr 2020	Sea State	Calm
C6	01 Apr 2020	High Tide (ft)	4.16
C6	01 Apr 2020	High Tide Time	248
C6	01 Apr 2020	Low Tide (ft)	0.39
C6	01 Apr 2020	Low Tide Time	1119
C6	01 Apr 2020	Comments	Kelp
C6	14 Apr 2020	Depth (m)	9
C6	14 Apr 2020	Arrive Time	848
C6	14 Apr 2020	Depart Time	852

Station	Date	Parameter	Value
C6	14 Apr 2020	Air Temp (C)	15
C6	14 Apr 2020	Weather	Partly Cloudy
C6	14 Apr 2020	Visibility (mi)	8
C6	14 Apr 2020	Wind Speed (kts)	7
C6	14 Apr 2020	Wind Dir	W
C6	14 Apr 2020	Water Color	Brown
C6	14 Apr 2020	Wave Ht Low (ft)	3
C6	14 Apr 2020	Wave Period (sec)	4
C6	14 Apr 2020	Sea State	Light chop
C6	14 Apr 2020	High Tide (ft)	4.39
C6	14 Apr 2020	High Tide Time	224
C6	14 Apr 2020	Low Tide (ft)	0.12
C6	14 Apr 2020	Low Tide Time	1031
C6	14 Apr 2020	Comments	Kelp
C6	21 Apr 2020	Depth (m)	10
C6	21 Apr 2020	Arrive Time	1031
C6	21 Apr 2020	Depart Time	1037
C6	21 Apr 2020	Air Temp (C)	16
C6	21 Apr 2020	Weather	Clear
C6	21 Apr 2020	Visibility (mi)	12
C6	21 Apr 2020	Wind Speed (kts)	1
C6	21 Apr 2020	Wind Dir	N
C6	21 Apr 2020	Water Color	Brown
C6	21 Apr 2020	Wave Ht Low (ft)	5
C6	21 Apr 2020	Wave Period (sec)	13
C6	21 Apr 2020	Sea State	Light chop
C6	21 Apr 2020	High Tide (ft)	4.39
C6	21 Apr 2020	High Tide Time	904
C6	21 Apr 2020	Low Tide (ft)	0.49
C6	21 Apr 2020	Low Tide Time	1506
C6	21 Apr 2020	Comments	Possible red tide; Kelp
C6	28 Apr 2020	Depth (m)	9
C6	28 Apr 2020	Arrive Time	914
C6	28 Apr 2020	Depart Time	920
C6	28 Apr 2020	Air Temp (C)	17
C6	28 Apr 2020	Weather	Continuous layer of clouds
C6	28 Apr 2020	Visibility (mi)	3
C6	28 Apr 2020	Wind Speed (kts)	1
C6	28 Apr 2020	Wind Dir	E
C6	28 Apr 2020	Water Color	Reddish-Brown
C6	28 Apr 2020	Wave Ht Low (ft)	3
C6	28 Apr 2020	Wave Period (sec)	9
C6	28 Apr 2020	Sea State	Calm
C6	28 Apr 2020	High Tide (ft)	2.78
C6	28 Apr 2020	High Tide Time	1511
C6	28 Apr 2020	Low Tide (ft)	0.2
C6	28 Apr 2020	Low Tide Time	755
C6	28 Apr 2020	Comments	Red tide
C7	01 Apr 2020	Depth (m)	18
C7	01 Apr 2020	Arrive Time	816
C7	01 Apr 2020	Depart Time	820
C7	01 Apr 2020	Air Temp (C)	15

Station	Date	Parameter	Value
C7	01 Apr 2020	Weather	Haze
C7	01 Apr 2020	Visibility (mi)	8
C7	01 Apr 2020	Wind Speed (kts)	8
C7	01 Apr 2020	Wind Dir	E
C7	01 Apr 2020	Water Color	Green
C7	01 Apr 2020	Wave Ht Low (ft)	3
C7	01 Apr 2020	Wave Period (sec)	11
C7	01 Apr 2020	Sea State	Calm
C7	01 Apr 2020	High Tide (ft)	4.16
C7	01 Apr 2020	High Tide Time	248
C7	01 Apr 2020	Low Tide (ft)	0.39
C7	01 Apr 2020	Low Tide Time	1119
C7	01 Apr 2020	Comments	none
C7	14 Apr 2020	Depth (m)	18
C7	14 Apr 2020	Arrive Time	820
C7	14 Apr 2020	Depart Time	825
C7	14 Apr 2020	Air Temp (C)	15
C7	14 Apr 2020	Weather	Partly Cloudy
C7	14 Apr 2020	Visibility (mi)	8
C7	14 Apr 2020	Wind Speed (kts)	6
C7	14 Apr 2020	Wind Dir	W
C7	14 Apr 2020	Water Color	Greenish-Brown
C7	14 Apr 2020	Wave Ht Low (ft)	3
C7	14 Apr 2020	Wave Period (sec)	4
C7	14 Apr 2020	Sea State	Light chop
C7	14 Apr 2020	High Tide (ft)	4.39
C7	14 Apr 2020	High Tide Time	224
C7	14 Apr 2020	Low Tide (ft)	0.12
C7	14 Apr 2020	Low Tide Time	1031
C7	14 Apr 2020	Comments	Kelp; Freshwater runoff at surface; High CDOM, salinity, etc.
C7	21 Apr 2020	Depth (m)	19
C7	21 Apr 2020	Arrive Time	957
C7	21 Apr 2020	Depart Time	1003
C7	21 Apr 2020	Air Temp (C)	16
C7	21 Apr 2020	Weather	Clear
C7	21 Apr 2020	Visibility (mi)	12
C7	21 Apr 2020	Wind Speed (kts)	1
C7	21 Apr 2020	Wind Dir	N
C7	21 Apr 2020	Water Color	Brown
C7	21 Apr 2020	Wave Ht Low (ft)	5
C7	21 Apr 2020	Wave Period (sec)	13
C7	21 Apr 2020	Sea State	Light chop
C7	21 Apr 2020	High Tide (ft)	4.39
C7	21 Apr 2020	High Tide Time	904
C7	21 Apr 2020	Low Tide (ft)	0.49
C7	21 Apr 2020	Low Tide Time	1506
C7	21 Apr 2020	Comments	none
C7	28 Apr 2020	Depth (m)	18
C7	28 Apr 2020	Arrive Time	840
C7	28 Apr 2020	Depart Time	845
C7	28 Apr 2020	Air Temp (C)	17
C7	28 Apr 2020	Weather	Fog

Station	Date	Parameter	Value
C7	28 Apr 2020	Visibility (mi)	3
C7	28 Apr 2020	Wind Speed (kts)	6
C7	28 Apr 2020	Wind Dir	SE
C7	28 Apr 2020	Water Color	Reddish-Brown
C7	28 Apr 2020	Wave Ht Low (ft)	3
C7	28 Apr 2020	Wave Period (sec)	9
C7	28 Apr 2020	Sea State	Calm
C7	28 Apr 2020	High Tide (ft)	2.78
C7	28 Apr 2020	High Tide Time	1511
C7	28 Apr 2020	Low Tide (ft)	0.2
C7	28 Apr 2020	Low Tide Time	755
C7	28 Apr 2020	Comments	Red tide; Low tide limited CTD cast to 17m
C8	01 Apr 2020	Depth (m)	18
C8	01 Apr 2020	Arrive Time	827
C8	01 Apr 2020	Depart Time	831
C8	01 Apr 2020	Air Temp (C)	15
C8	01 Apr 2020	Weather	Haze
C8	01 Apr 2020	Visibility (mi)	8
C8	01 Apr 2020	Wind Speed (kts)	7
C8	01 Apr 2020	Wind Dir	E
C8	01 Apr 2020	Water Color	Green
C8	01 Apr 2020	Wave Ht Low (ft)	3
C8	01 Apr 2020	Wave Period (sec)	11
C8	01 Apr 2020	Sea State	Calm
C8	01 Apr 2020	High Tide (ft)	4.16
C8	01 Apr 2020	High Tide Time	248
C8	01 Apr 2020	Low Tide (ft)	0.39
C8	01 Apr 2020	Low Tide Time	1119
C8	01 Apr 2020	Comments	none
C8	14 Apr 2020	Depth (m)	18
C8	14 Apr 2020	Arrive Time	832
C8	14 Apr 2020	Depart Time	845
C8	14 Apr 2020	Air Temp (C)	15
C8	14 Apr 2020	Weather	Partly Cloudy
C8	14 Apr 2020	Visibility (mi)	8
C8	14 Apr 2020	Wind Speed (kts)	11
C8	14 Apr 2020	Wind Dir	W
C8	14 Apr 2020	Water Color	Brown
C8	14 Apr 2020	Wave Ht Low (ft)	3
C8	14 Apr 2020	Wave Period (sec)	4
C8	14 Apr 2020	Sea State	Light chop
C8	14 Apr 2020	High Tide (ft)	4.39
C8	14 Apr 2020	High Tide Time	224
C8	14 Apr 2020	Low Tide (ft)	0.12
C8	14 Apr 2020	Low Tide Time	1031
C8	14 Apr 2020	Comments	Foam
C8	21 Apr 2020	Depth (m)	19
C8	21 Apr 2020	Arrive Time	1011
C8	21 Apr 2020	Depart Time	1015
C8	21 Apr 2020	Air Temp (C)	16
C8	21 Apr 2020	Weather	Clear
C8	21 Apr 2020	Visibility (mi)	12

Station	Date	Parameter	Value
C8	21 Apr 2020	Wind Speed (kts)	2
C8	21 Apr 2020	Wind Dir	NE
C8	21 Apr 2020	Water Color	Brown
C8	21 Apr 2020	Wave Ht Low (ft)	5
C8	21 Apr 2020	Wave Period (sec)	13
C8	21 Apr 2020	Sea State	Light chop
C8	21 Apr 2020	High Tide (ft)	4.39
C8	21 Apr 2020	High Tide Time	904
C8	21 Apr 2020	Low Tide (ft)	0.49
C8	21 Apr 2020	Low Tide Time	1506
C8	21 Apr 2020	Comments	Possible red tide; Kelp debris
C8	28 Apr 2020	Depth (m)	18
C8	28 Apr 2020	Arrive Time	853
C8	28 Apr 2020	Depart Time	857
C8	28 Apr 2020	Air Temp (C)	17
C8	28 Apr 2020	Weather	Fog
C8	28 Apr 2020	Visibility (mi)	3
C8	28 Apr 2020	Wind Speed (kts)	2
C8	28 Apr 2020	Wind Dir	S
C8	28 Apr 2020	Water Color	Reddish-Brown
C8	28 Apr 2020	Wave Ht Low (ft)	3
C8	28 Apr 2020	Wave Period (sec)	9
C8	28 Apr 2020	Sea State	Calm
C8	28 Apr 2020	High Tide (ft)	2.78
C8	28 Apr 2020	High Tide Time	1511
C8	28 Apr 2020	Low Tide (ft)	0.2
C8	28 Apr 2020	Low Tide Time	755
C8	28 Apr 2020	Comments	Red tide

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 (μ g/L)
A1	01 Apr 2020	1	15.08	77.86	9.2	33.46	8.0	24.8	5.97
A1	01 Apr 2020	2	15.09	77.95	9.2	33.46	8.0	24.8	6.07
A1	01 Apr 2020	3	15.01	77.68	9.2	33.48	8.0	24.8	6.42
A1	01 Apr 2020	4	14.87	77.26	8.9	33.49	8.0	24.8	7.14
A1	01 Apr 2020	5	14.21	77.87	8.1	33.60	8.0	25.1	7.73
A1	01 Apr 2020	6	13.39	79.82	7.2	33.68	7.9	25.3	7.54
A1	01 Apr 2020	7	13.03	83.33	6.7	33.63	7.8	25.3	6.41
A1	01 Apr 2020	8	12.92	85.27	6.4	33.62	7.8	25.3	4.90
A1	01 Apr 2020	9	12.85	85.56	6.3	33.61	7.8	25.3	3.91
A1	01 Apr 2020	10	12.80	85.57	6.2	33.61	7.8	25.4	3.43
A1	01 Apr 2020	11	12.73	86.00	6.2	33.62	7.8	25.4	3.01
A1	01 Apr 2020	12	12.63	86.60	6.1	33.63	7.8	25.4	2.81
A1	01 Apr 2020	13	12.53	86.81	5.9	33.63	7.7	25.4	2.62
A1	01 Apr 2020	14	12.50	86.46	5.9	33.63	7.7	25.4	2.31
A1	01 Apr 2020	15	12.42	86.38	5.8	33.65	7.7	25.5	2.24
A1	01 Apr 2020	16	12.16	86.77	5.6	33.68	7.7	25.5	2.16
A1	01 Apr 2020	17	11.46	87.70	5.2	33.82	7.7	25.8	1.88
A1	01 Apr 2020	18	11.26	87.05	4.8	33.75	7.6	25.8	1.44
A1	10 Apr 2020	1	16.18	64.89	9.2	33.06	8.2	24.2	8.84
A1	10 Apr 2020	2	16.19	65.84	9.2	33.06	8.2	24.2	8.35
A1	10 Apr 2020	3	16.19	66.19	9.3	33.06	8.2	24.2	8.43
A1	10 Apr 2020	4	16.17	66.41	9.2	33.08	8.2	24.2	8.27
A1	10 Apr 2020	5	16.15	67.47	9.3	33.11	8.2	24.3	8.61
A1	10 Apr 2020	6	16.15	68.38	9.3	33.11	8.2	24.3	8.35
A1	10 Apr 2020	7	16.14	68.71	9.3	33.13	8.2	24.3	8.45
A1	10 Apr 2020	8	16.13	68.14	9.3	33.14	8.2	24.3	8.08
A1	10 Apr 2020	9	16.11	69.89	9.3	33.16	8.2	24.3	8.09
A1	10 Apr 2020	10	16.10	71.98	9.4	33.18	8.2	24.3	7.68
A1	10 Apr 2020	11	16.01	74.70	9.4	33.27	8.2	24.4	7.57
A1	10 Apr 2020	12	15.99	75.36	9.5	33.30	8.2	24.4	7.42
A1	10 Apr 2020	13	15.99	75.41	9.6	33.31	8.2	24.5	5.86
A1	10 Apr 2020	14	15.93	76.18	9.4	33.37	8.2	24.5	5.15
A1	10 Apr 2020	15	15.92	77.78	9.5	33.38	8.2	24.5	5.01
A1	10 Apr 2020	16	15.91	78.64	9.5	33.38	8.2	24.5	4.81
A1	10 Apr 2020	17	15.86	79.61	9.5	33.39	8.2	24.5	4.50
A1	10 Apr 2020	18	15.79	79.90	9.3	33.41	8.2	24.6	3.98
A1	10 Apr 2020	19	15.49	79.68	9.0	33.48	8.2	24.7	3.81
A1	10 Apr 2020	20	15.50	80.47	8.9	33.41	8.1	24.6	3.31
A1	14 Apr 2020	1	16.23	75.18	9.8	33.09	8.2	24.2	5.29
A1	14 Apr 2020	2	16.24	62.92	9.8	33.10	8.2	24.2	5.60
A1	14 Apr 2020	3	16.24	77.00	9.8	33.10	8.2	24.2	5.57
A1	14 Apr 2020	4	16.24	76.96	9.7	33.12	8.2	24.2	5.70
A1	14 Apr 2020	5	16.19	76.60	9.7	33.15	8.2	24.3	6.04
A1	14 Apr 2020	6	16.08	76.26	9.5	33.17	8.2	24.3	6.73
A1	14 Apr 2020	7	15.73	76.55	9.1	33.26	8.1	24.5	7.02
A1	14 Apr 2020	8	15.68	78.00	8.8	33.25	8.1	24.5	7.48
A1	14 Apr 2020	9	15.57	78.66	8.5	33.29	8.1	24.5	7.53
A1	14 Apr 2020	10	15.37	79.81	8.2	33.37	8.1	24.6	7.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
A1	14 Apr 2020	11	15.20	83.30	8.1	33.41	8.0	24.7	6.99
A1	14 Apr 2020	12	15.14	86.35	7.9	33.41	8.0	24.7	5.72
A1	14 Apr 2020	13	14.95	87.20	7.7	33.46	8.0	24.8	4.07
A1	14 Apr 2020	14	14.70	87.53	7.4	33.50	8.0	24.9	3.19
A1	14 Apr 2020	15	14.43	87.60	7.1	33.54	7.9	25.0	2.68
A1	14 Apr 2020	16	13.83	87.01	6.7	33.64	7.9	25.2	2.40
A1	14 Apr 2020	17	13.47	87.32	6.4	33.63	7.8	25.2	2.33
A1	14 Apr 2020	18	13.52	87.55	6.3	33.57	7.8	25.2	2.33
A1	21 Apr 2020	1	13.79	77.34	7.3	33.52	8.0	25.1	1.71
A1	21 Apr 2020	2	13.62	79.01	7.2	33.55	8.0	25.1	1.80
A1	21 Apr 2020	3	12.86	77.88	6.6	33.70	7.9	25.4	1.96
A1	21 Apr 2020	4	12.09	79.97	5.8	33.93	7.8	25.7	2.20
A1	21 Apr 2020	5	11.53	82.94	5.1	33.84	7.7	25.8	2.37
A1	21 Apr 2020	6	11.38	85.69	4.8	33.83	7.7	25.8	2.35
A1	21 Apr 2020	7	11.42	87.53	4.6	33.78	7.6	25.8	1.84
A1	21 Apr 2020	8	11.36	86.83	4.6	33.81	7.6	25.8	1.26
A1	21 Apr 2020	9	11.22	89.28	4.5	33.81	7.6	25.8	1.18
A1	21 Apr 2020	10	11.19	89.75	4.5	33.80	7.6	25.8	1.03
A1	21 Apr 2020	11	11.10	89.90	4.4	33.81	7.6	25.8	0.83
A1	21 Apr 2020	12	11.06	90.28	4.4	33.82	7.6	25.8	0.73
A1	21 Apr 2020	13	10.98	90.25	4.3	33.83	7.6	25.9	0.63
A1	21 Apr 2020	14	10.95	90.17	4.3	33.83	7.6	25.9	0.53
A1	21 Apr 2020	15	10.89	89.83	4.2	33.84	7.6	25.9	0.50
A1	21 Apr 2020	16	10.87	88.89	4.2	33.84	7.6	25.9	0.44
A1	21 Apr 2020	17	10.87	88.39	4.2	33.84	7.6	25.9	0.39
A1	21 Apr 2020	18	10.87	88.13	4.1	33.83	7.6	25.9	0.34
A1	28 Apr 2020	1	17.59	19.90	9.5	33.57	8.2	24.3	62.31
A1	28 Apr 2020	2	17.45	19.00	9.4	33.57	8.2	24.3	62.31
A1	28 Apr 2020	3	17.13	21.41	9.3	33.64	8.2	24.4	62.31
A1	28 Apr 2020	4	16.74	26.54	9.2	33.60	8.2	24.5	62.18
A1	28 Apr 2020	5	16.48	37.27	9.2	33.61	8.1	24.6	56.34
A1	28 Apr 2020	6	16.32	41.11	9.1	33.60	8.1	24.6	47.06
A1	28 Apr 2020	7	16.17	45.33	9.1	33.60	8.1	24.6	40.61
A1	28 Apr 2020	8	16.15	50.15	9.0	33.59	8.1	24.6	34.98
A1	28 Apr 2020	9	16.04	52.46	8.9	33.61	8.1	24.7	31.19
A1	28 Apr 2020	10	15.34	56.65	8.9	33.70	8.1	24.9	29.66
A1	28 Apr 2020	11	14.86	62.55	8.4	33.70	8.0	25.0	25.71
A1	28 Apr 2020	12	14.45	68.04	7.5	33.70	8.0	25.1	19.41
A1	28 Apr 2020	13	13.73	71.29	7.1	33.78	7.9	25.3	13.74
A1	28 Apr 2020	14	13.02	74.12	6.3	33.78	7.8	25.4	10.60
A1	28 Apr 2020	15	12.74	74.92	5.8	33.74	7.7	25.5	8.51
A1	28 Apr 2020	16	12.69	75.28	5.6	33.73	7.7	25.5	6.92
A1	28 Apr 2020	17	12.60	75.52	5.5	33.73	7.7	25.5	5.91
A1	28 Apr 2020	18	12.59	75.60	5.4	33.72	7.7	25.5	4.99
A1	28 Apr 2020	19	12.55	75.29	5.4	33.72	7.7	25.5	4.56
A6	01 Apr 2020	1	15.01	79.62	8.8	33.42	8.1	24.8	4.30
A6	01 Apr 2020	2	15.04	80.04	8.8	33.45	8.1	24.8	4.19
A6	01 Apr 2020	3	14.45	80.38	8.2	33.60	8.0	25.0	4.48
A6	01 Apr 2020	4	13.55	80.83	7.3	33.70	7.9	25.3	4.65
A6	01 Apr 2020	5	12.89	83.81	6.6	33.72	7.8	25.4	4.72
A6	01 Apr 2020	6	12.53	86.80	6.1	33.70	7.8	25.5	4.13
A6	01 Apr 2020	7	12.32	88.73	5.9	33.68	7.8	25.5	2.98

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A6	01 Apr 2020	8	12.23	89.34	5.7	33.66	7.8	25.5	2.27
A6	01 Apr 2020	9	12.13	89.62	5.6	33.66	7.8	25.5	1.83
A6	01 Apr 2020	10	12.10	89.80	5.6	33.66	7.8	25.5	1.45
A6	01 Apr 2020	11	12.05	89.92	5.5	33.66	7.8	25.5	1.16
A6	01 Apr 2020	12	12.01	89.96	5.5	33.66	7.7	25.6	1.14
A6	01 Apr 2020	13	12.00	89.93	5.4	33.66	7.7	25.6	1.01
A6	01 Apr 2020	14	11.97	90.03	5.4	33.67	7.7	25.6	0.96
A6	01 Apr 2020	15	11.94	89.99	5.4	33.67	7.7	25.6	0.93
A6	01 Apr 2020	16	11.94	90.04	5.3	33.66	7.7	25.6	0.90
A6	01 Apr 2020	17	11.94	90.00	5.3	33.66	7.7	25.6	0.93
A6	01 Apr 2020	18	11.94	89.92	5.3	33.67	7.7	25.6	0.91
A6	01 Apr 2020	19	11.92	89.90	5.2	33.67	7.7	25.6	0.86
A6	01 Apr 2020	20	11.92	89.77	5.2	33.67	7.7	25.6	0.82
A6	01 Apr 2020	21	11.82	89.70	5.1	33.72	7.7	25.6	0.85
A6	10 Apr 2020	1	15.75	76.07	8.5	33.22	8.2	24.4	9.29
A6	10 Apr 2020	2	15.74	77.35	8.7	33.28	8.2	24.5	7.78
A6	10 Apr 2020	3	15.74	77.56	8.9	33.29	8.2	24.5	7.19
A6	10 Apr 2020	4	15.73	77.69	8.9	33.30	8.2	24.5	7.23
A6	10 Apr 2020	5	15.73	78.05	9.0	33.30	8.2	24.5	7.93
A6	10 Apr 2020	6	15.72	78.02	9.1	33.31	8.2	24.5	7.80
A6	10 Apr 2020	7	15.72	78.01	9.0	33.32	8.2	24.5	7.34
A6	10 Apr 2020	8	15.72	78.05	9.0	33.31	8.2	24.5	7.54
A6	10 Apr 2020	9	15.72	77.96	9.0	33.31	8.2	24.5	7.35
A6	10 Apr 2020	10	15.71	78.03	9.0	33.32	8.2	24.5	6.94
A6	10 Apr 2020	11	15.71	78.41	9.1	33.33	8.2	24.5	7.17
A6	10 Apr 2020	12	15.71	78.54	9.0	33.33	8.2	24.5	6.79
A6	10 Apr 2020	13	15.71	78.37	9.1	33.33	8.2	24.5	6.74
A6	10 Apr 2020	14	15.71	78.49	9.0	33.33	8.2	24.5	6.28
A6	10 Apr 2020	15	15.71	78.28	9.1	33.33	8.2	24.5	6.52
A6	10 Apr 2020	16	15.68	78.33	9.0	33.35	8.2	24.5	6.67
A6	10 Apr 2020	17	15.61	79.81	8.8	33.38	8.2	24.6	6.39
A6	10 Apr 2020	18	15.59	80.87	8.7	33.38	8.2	24.6	6.18
A6	14 Apr 2020	1	16.32	61.59	9.7	32.76	8.2	24.0	8.92
A6	14 Apr 2020	2	16.31	73.83	9.7	32.86	8.2	24.0	8.99
A6	14 Apr 2020	3	16.24	77.36	9.6	32.93	8.2	24.1	9.17
A6	14 Apr 2020	4	16.15	80.62	9.5	33.01	8.2	24.2	8.87
A6	14 Apr 2020	5	15.94	84.12	9.3	33.15	8.2	24.3	7.55
A6	14 Apr 2020	6	15.75	86.62	9.0	33.23	8.2	24.4	6.02
A6	14 Apr 2020	7	15.70	87.39	8.9	33.24	8.1	24.5	3.97
A6	14 Apr 2020	8	15.48	87.80	8.6	33.32	8.1	24.6	2.48
A6	14 Apr 2020	9	15.38	88.00	8.3	33.34	8.1	24.6	1.92
A6	14 Apr 2020	10	15.28	88.06	8.2	33.36	8.1	24.6	1.66
A6	14 Apr 2020	11	15.26	88.01	8.0	33.35	8.1	24.6	1.46
A6	14 Apr 2020	12	15.18	88.18	7.9	33.38	8.1	24.7	1.27
A6	14 Apr 2020	13	15.15	88.61	7.8	33.38	8.1	24.7	1.16
A6	14 Apr 2020	14	15.12	88.72	7.7	33.38	8.0	24.7	1.16
A6	14 Apr 2020	15	15.11	88.91	7.6	33.39	8.0	24.7	0.96
A6	14 Apr 2020	16	15.09	88.90	7.5	33.39	8.0	24.7	0.93
A6	14 Apr 2020	17	15.01	89.00	7.4	33.41	8.0	24.7	0.88
A6	14 Apr 2020	18	14.90	89.19	7.2	33.41	8.0	24.8	0.86
A6	21 Apr 2020	1	15.43	62.37	9.2	33.35	8.2	24.6	4.38
A6	21 Apr 2020	2	15.39	71.89	9.2	33.36	8.2	24.6	4.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A6	21 Apr 2020	3	15.38	73.92	8.9	33.36	8.2	24.6	4.35
A6	21 Apr 2020	4	15.13	78.59	8.7	33.54	8.1	24.8	4.25
A6	21 Apr 2020	5	13.66	83.03	8.5	34.38	8.0	25.8	4.63
A6	21 Apr 2020	6	12.96	86.98	8.3	34.04	7.8	25.7	4.70
A6	21 Apr 2020	7	13.25	87.60	7.2	33.74	7.7	25.4	4.85
A6	21 Apr 2020	8	12.04	89.40	6.3	34.19	7.7	26.0	4.73
A6	21 Apr 2020	9	11.44	90.47	5.6	33.95	7.7	25.9	5.18
A6	21 Apr 2020	10	11.49	90.49	5.2	33.95	7.7	25.9	4.80
A6	21 Apr 2020	11	11.16	90.33	4.9	34.16	7.7	26.1	6.20
A6	21 Apr 2020	12	11.09	90.30	4.6	33.95	7.7	25.9	4.73
A6	21 Apr 2020	13	11.07	89.96	4.4	33.97	7.7	26.0	4.35
A6	21 Apr 2020	14	11.04	89.43	4.3	34.00	7.7	26.0	3.20
A6	21 Apr 2020	15	11.02	89.19	4.3	34.02	7.7	26.0	2.33
A6	21 Apr 2020	16	11.01	89.32	4.4	33.91	7.7	25.9	1.58
A6	21 Apr 2020	17	11.00	89.45	4.3	33.84	7.7	25.9	0.98
A6	21 Apr 2020	18	11.01	89.32	4.2	33.84	7.7	25.9	0.68
A6	28 Apr 2020	1	17.89	35.51	10.9	33.54	8.3	24.2	53.91
A6	28 Apr 2020	2	17.85	35.99	11.0	33.54	8.3	24.2	47.13
A6	28 Apr 2020	3	17.85	44.53	10.8	33.55	8.3	24.2	42.18
A6	28 Apr 2020	4	17.80	48.05	11.4	33.54	8.3	24.2	36.57
A6	28 Apr 2020	5	17.53	46.71	11.3	33.57	8.3	24.3	34.12
A6	28 Apr 2020	6	17.30	51.92	11.1	33.56	8.3	24.3	30.18
A6	28 Apr 2020	7	17.19	63.55	10.8	33.59	8.3	24.4	22.27
A6	28 Apr 2020	8	16.58	72.16	10.3	33.59	8.2	24.5	16.97
A6	28 Apr 2020	9	15.82	73.40	9.2	33.72	8.2	24.8	12.51
A6	28 Apr 2020	10	14.40	74.81	7.9	33.72	8.0	25.1	10.33
A6	28 Apr 2020	11	13.96	76.54	7.2	33.70	8.0	25.2	8.36
A6	28 Apr 2020	12	14.31	78.58	7.3	33.59	7.9	25.0	7.74
A6	28 Apr 2020	13	13.69	80.09	7.0	33.78	7.9	25.3	7.32
A6	28 Apr 2020	14	13.35	80.52	6.5	33.70	7.9	25.3	6.32
A6	28 Apr 2020	15	13.25	79.53	6.2	33.70	7.9	25.3	4.87
A6	28 Apr 2020	16	12.67	80.49	5.7	33.77	7.8	25.5	4.17
A6	28 Apr 2020	17	12.02	82.82	5.0	33.80	7.7	25.7	2.85
A7	01 Apr 2020	1	14.83	80.39	9.0	33.47	8.1	24.8	4.97
A7	01 Apr 2020	2	14.69	80.19	8.8	33.50	8.0	24.9	5.19
A7	01 Apr 2020	3	14.45	77.34	8.4	33.52	8.0	24.9	6.38
A7	01 Apr 2020	4	13.95	78.62	7.8	33.58	7.9	25.1	8.32
A7	01 Apr 2020	5	13.71	82.74	7.3	33.57	7.9	25.1	8.06
A7	01 Apr 2020	6	13.64	83.59	7.2	33.56	7.9	25.1	5.92
A7	01 Apr 2020	7	13.48	84.00	7.0	33.58	7.9	25.2	4.88
A7	01 Apr 2020	8	13.23	84.96	6.7	33.60	7.8	25.3	4.36
A7	01 Apr 2020	9	12.99	85.06	6.4	33.63	7.8	25.3	4.02
A7	01 Apr 2020	10	12.85	86.95	6.2	33.61	7.8	25.3	3.66
A7	01 Apr 2020	11	12.59	88.06	6.0	33.65	7.8	25.4	3.07
A7	01 Apr 2020	12	12.38	89.22	5.9	33.66	7.8	25.5	2.64
A7	01 Apr 2020	13	12.32	89.44	5.7	33.65	7.8	25.5	1.91
A7	01 Apr 2020	14	12.21	89.01	5.6	33.66	7.8	25.5	1.56
A7	01 Apr 2020	15	12.19	88.78	5.5	33.66	7.7	25.5	1.49
A7	01 Apr 2020	16	12.11	88.75	5.4	33.67	7.7	25.5	1.34
A7	01 Apr 2020	17	11.95	88.79	5.3	33.70	7.7	25.6	1.30
A7	01 Apr 2020	18	12.00	88.60	5.2	33.67	7.7	25.6	1.10
A7	10 Apr 2020	1	15.87	69.28	9.1	33.25	8.2	24.4	7.89

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A7	10 Apr 2020	2	15.87	73.55	9.2	33.26	8.2	24.4	7.95
A7	10 Apr 2020	3	15.87	74.06	9.2	33.26	8.2	24.4	7.96
A7	10 Apr 2020	4	15.87	73.92	9.2	33.26	8.2	24.4	8.28
A7	10 Apr 2020	5	15.87	73.89	9.2	33.26	8.2	24.4	8.02
A7	10 Apr 2020	6	15.87	74.46	9.2	33.27	8.2	24.4	8.43
A7	10 Apr 2020	7	15.86	75.20	9.2	33.27	8.2	24.4	8.29
A7	10 Apr 2020	8	15.86	75.05	9.2	33.28	8.2	24.5	8.68
A7	10 Apr 2020	9	15.86	74.71	9.3	33.28	8.2	24.5	8.17
A7	10 Apr 2020	10	15.84	75.27	9.2	33.30	8.2	24.5	8.01
A7	10 Apr 2020	11	15.83	75.34	9.1	33.30	8.2	24.5	7.93
A7	10 Apr 2020	12	15.80	75.67	9.1	33.32	8.2	24.5	7.76
A7	10 Apr 2020	13	15.80	76.53	9.1	33.33	8.2	24.5	7.70
A7	10 Apr 2020	14	15.78	78.37	9.0	33.35	8.2	24.5	6.79
A7	10 Apr 2020	15	15.78	78.81	9.1	33.35	8.2	24.5	6.32
A7	10 Apr 2020	16	15.76	78.62	9.0	33.36	8.2	24.5	5.68
A7	10 Apr 2020	17	15.67	80.34	8.8	33.40	8.2	24.6	5.48
A7	10 Apr 2020	18	15.55	83.13	8.6	33.42	8.2	24.6	4.30
A7	14 Apr 2020	1	16.36	81.62	7.7	32.84	8.2	24.0	3.57
A7	14 Apr 2020	2	16.36	81.45	8.2	32.86	8.2	24.0	4.07
A7	14 Apr 2020	3	16.33	81.66	8.4	32.88	8.2	24.0	3.48
A7	14 Apr 2020	4	16.26	81.22	8.7	32.95	8.2	24.1	2.78
A7	14 Apr 2020	5	16.17	81.13	8.4	33.02	8.2	24.2	2.90
A7	14 Apr 2020	6	15.83	82.19	8.6	33.27	8.2	24.5	3.24
A7	14 Apr 2020	7	15.60	82.86	8.9	33.32	8.1	24.5	3.05
A7	14 Apr 2020	8	15.57	83.57	8.9	33.29	8.1	24.5	3.09
A7	14 Apr 2020	9	15.55	83.43	8.7	33.28	8.1	24.5	3.34
A7	14 Apr 2020	10	15.50	83.57	8.5	33.29	8.1	24.5	3.64
A7	14 Apr 2020	11	15.42	83.68	8.4	33.32	8.1	24.6	3.96
A7	14 Apr 2020	12	15.36	84.15	8.3	33.35	8.1	24.6	4.05
A7	14 Apr 2020	13	15.26	84.37	8.1	33.38	8.1	24.7	4.05
A7	14 Apr 2020	14	15.24	84.70	8.0	33.38	8.1	24.7	3.93
A7	14 Apr 2020	15	15.09	84.97	7.8	33.41	8.0	24.7	3.88
A7	14 Apr 2020	16	14.97	85.28	7.7	33.42	8.0	24.8	3.80
A7	14 Apr 2020	17	14.97	86.73	7.6	33.41	8.0	24.8	3.50
A7	14 Apr 2020	18	14.46	87.85	7.2	33.57	8.0	25.0	2.80
A7	21 Apr 2020	1	15.71	75.78	9.5	33.15	8.2	24.4	1.53
A7	21 Apr 2020	2	15.37	74.11	9.2	33.36	8.2	24.6	1.49
A7	21 Apr 2020	3	14.31	78.19	7.9	33.61	8.1	25.0	1.86
A7	21 Apr 2020	4	12.52	82.82	6.0	33.78	7.8	25.5	2.49
A7	21 Apr 2020	5	11.71	87.87	5.0	33.90	7.7	25.8	2.48
A7	21 Apr 2020	6	11.26	89.20	4.7	33.84	7.7	25.8	2.04
A7	21 Apr 2020	7	11.56	90.12	4.7	33.74	7.7	25.7	1.32
A7	21 Apr 2020	8	11.16	90.60	4.6	33.83	7.7	25.8	0.80
A7	21 Apr 2020	9	11.15	90.66	4.5	33.81	7.7	25.8	0.69
A7	21 Apr 2020	10	11.13	90.50	4.4	33.81	7.7	25.8	0.55
A7	21 Apr 2020	11	11.09	90.30	4.3	33.81	7.7	25.8	0.49
A7	21 Apr 2020	12	11.05	89.73	4.3	33.83	7.7	25.9	0.41
A7	21 Apr 2020	13	10.99	89.09	4.2	33.84	7.6	25.9	0.39
A7	21 Apr 2020	14	10.83	88.68	4.1	33.86	7.6	25.9	0.38
A7	21 Apr 2020	15	10.80	87.75	4.0	33.86	7.6	25.9	0.33
A7	21 Apr 2020	16	10.82	87.58	4.0	33.85	7.6	25.9	0.31
A7	21 Apr 2020	17	10.75	87.42	4.0	33.86	7.6	25.9	0.30
A7	21 Apr 2020	18	10.75	87.23	4.0	33.86	7.6	25.9	0.29

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
A7	21 Apr 2020	19	10.74	87.38	4.0	33.86	7.6	25.9	0.30
A7	21 Apr 2020	20	10.74	87.07	4.0	33.86	7.6	25.9	0.29
A7	21 Apr 2020	21	10.74	86.77	4.0	33.86	7.6	25.9	0.28
A7	28 Apr 2020	1	17.14	63.81	10.8	33.58	8.3	24.4	17.00
A7	28 Apr 2020	2	16.70	64.57	10.3	33.63	8.2	24.5	16.47
A7	28 Apr 2020	3	16.47	69.87	9.9	33.59	8.2	24.6	13.32
A7	28 Apr 2020	4	16.17	72.29	9.5	33.63	8.2	24.7	9.67
A7	28 Apr 2020	5	15.36	75.45	8.7	33.68	8.1	24.9	7.27
A7	28 Apr 2020	6	15.20	76.78	8.3	33.65	8.1	24.9	5.83
A7	28 Apr 2020	7	14.90	76.84	8.0	33.66	8.0	25.0	5.56
A7	28 Apr 2020	8	14.79	76.89	7.7	33.65	8.0	25.0	5.53
A7	28 Apr 2020	9	14.68	77.42	7.6	33.65	8.0	25.0	5.53
A7	28 Apr 2020	10	14.65	77.41	7.5	33.65	8.0	25.0	5.49
A7	28 Apr 2020	11	14.45	77.72	7.4	33.68	8.0	25.1	5.35
A7	28 Apr 2020	12	14.33	77.98	7.2	33.66	8.0	25.1	5.33
A7	28 Apr 2020	13	14.15	78.36	7.1	33.69	7.9	25.1	5.17
A7	28 Apr 2020	14	14.00	79.48	6.9	33.68	7.9	25.2	4.88
A7	28 Apr 2020	15	14.00	80.69	6.8	33.67	7.9	25.2	4.15
A7	28 Apr 2020	16	13.78	80.88	6.5	33.72	7.9	25.2	3.84
A7	28 Apr 2020	17	13.55	82.07	6.2	33.69	7.8	25.3	3.31
A7	28 Apr 2020	18	12.50	83.47	5.5	33.91	7.8	25.6	2.58
C4	01 Apr 2020	1	15.11	74.91	7.5	33.37	8.0	24.7	1.88
C4	01 Apr 2020	2	15.12	71.67	7.5	33.36	8.0	24.7	2.01
C4	01 Apr 2020	3	15.10	75.64	7.5	33.37	8.0	24.7	2.12
C4	01 Apr 2020	4	14.95	75.83	7.4	33.42	8.0	24.8	2.30
C4	01 Apr 2020	5	14.43	77.52	7.1	33.56	7.9	25.0	2.61
C4	01 Apr 2020	6	13.29	83.95	6.2	33.72	7.9	25.3	2.80
C4	01 Apr 2020	7	12.88	87.03	5.5	33.67	7.8	25.4	2.33
C4	01 Apr 2020	8	12.79	87.23	5.2	33.66	7.8	25.4	1.61
C4	01 Apr 2020	9	12.45	86.70	5.0	33.71	7.7	25.5	1.14
C4	01 Apr 2020	10	12.33	81.97	4.7	33.65	7.7	25.5	0.71
C4	10 Apr 2020	1	16.18	66.46	9.0	33.07	8.3	24.2	4.41
C4	10 Apr 2020	2	16.18	65.02	9.0	33.10	8.3	24.2	4.74
C4	10 Apr 2020	3	16.17	66.88	9.0	33.11	8.3	24.3	4.80
C4	10 Apr 2020	4	16.17	67.72	9.0	33.11	8.3	24.3	5.10
C4	10 Apr 2020	5	16.17	67.80	9.1	33.11	8.3	24.3	5.68
C4	10 Apr 2020	6	16.17	67.61	9.1	33.11	8.3	24.3	5.80
C4	10 Apr 2020	7	16.17	67.06	9.0	33.11	8.3	24.3	5.62
C4	10 Apr 2020	8	16.17	66.75	9.1	33.11	8.3	24.3	5.87
C4	10 Apr 2020	9	16.16	66.71	9.0	33.12	8.3	24.3	6.01
C4	10 Apr 2020	10	16.15	67.18	9.0	33.13	8.3	24.3	5.85
C4	14 Apr 2020	1	16.45	78.43	8.7	32.83	8.2	24.0	1.02
C4	14 Apr 2020	2	16.44	79.13	8.6	32.84	8.2	24.0	1.03
C4	14 Apr 2020	3	16.43	80.02	8.6	32.84	8.2	24.0	1.03
C4	14 Apr 2020	4	16.38	80.18	8.6	32.86	8.2	24.0	1.12
C4	14 Apr 2020	5	16.37	80.24	8.6	32.86	8.2	24.0	1.48
C4	14 Apr 2020	6	16.33	80.25	8.4	32.88	8.2	24.0	2.06
C4	14 Apr 2020	7	16.29	80.44	8.4	32.88	8.2	24.1	2.46
C4	14 Apr 2020	8	16.23	80.93	8.2	32.93	8.2	24.1	2.74
C4	14 Apr 2020	9	15.68	82.91	7.3	33.29	8.1	24.5	2.71
C4	14 Apr 2020	10	15.47	85.94	6.2	33.34	8.0	24.6	2.12

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C4	21 Apr 2020	1	16.43	56.52	8.3	33.23	8.1	24.3	3.34
C4	21 Apr 2020	2	16.18	56.94	8.5	33.25	8.2	24.4	3.09
C4	21 Apr 2020	3	15.86	69.77	9.4	33.27	8.2	24.5	3.39
C4	21 Apr 2020	4	14.89	77.06	8.4	33.58	8.2	24.9	3.75
C4	21 Apr 2020	5	12.84	80.84	6.2	33.85	7.9	25.5	4.39
C4	21 Apr 2020	6	11.97	86.70	4.9	33.87	7.8	25.7	4.27
C4	21 Apr 2020	7	11.79	84.77	4.3	33.83	7.7	25.7	2.77
C4	21 Apr 2020	8	11.76	83.23	4.2	33.81	7.7	25.7	1.42
C4	21 Apr 2020	9	11.61	81.68	4.1	33.82	7.7	25.7	0.82
C4	21 Apr 2020	10	11.57	80.23	4.1	33.79	7.7	25.7	0.58
C4	21 Apr 2020	11	11.58	78.93	4.1	33.79	7.7	25.7	0.43
C4	21 Apr 2020	12	11.61	77.05	4.1	33.78	7.7	25.7	0.39
C4	28 Apr 2020	1	17.75	46.21	9.6	33.21	8.2	24.0	21.27
C4	28 Apr 2020	2	17.48	46.50	9.5	33.34	8.2	24.1	20.79
C4	28 Apr 2020	3	17.39	50.71	9.4	33.37	8.2	24.2	19.13
C4	28 Apr 2020	4	17.11	55.95	9.5	33.54	8.2	24.4	16.38
C4	28 Apr 2020	5	17.00	57.39	9.2	33.55	8.2	24.4	11.57
C4	28 Apr 2020	6	16.73	66.11	9.1	33.58	8.2	24.5	7.86
C4	28 Apr 2020	7	16.40	71.24	8.9	33.61	8.2	24.6	4.60
C4	28 Apr 2020	8	16.06	73.37	8.1	33.64	8.2	24.7	2.76
C4	28 Apr 2020	9	14.70	72.70	6.5	33.79	8.0	25.1	1.96
C4	28 Apr 2020	10	14.07	59.48	5.5	33.71	7.8	25.2	1.35
C5	01 Apr 2020	1	15.33	77.50	9.2	33.45	8.1	24.7	2.67
C5	01 Apr 2020	2	15.31	76.92	9.2	33.45	8.1	24.7	2.92
C5	01 Apr 2020	3	15.30	75.80	9.2	33.45	8.1	24.7	3.54
C5	01 Apr 2020	4	15.25	73.95	9.1	33.46	8.1	24.7	5.11
C5	01 Apr 2020	5	15.14	71.87	8.8	33.48	8.1	24.8	7.55
C5	01 Apr 2020	6	14.62	74.41	8.0	33.60	8.0	25.0	10.27
C5	01 Apr 2020	7	13.91	85.57	7.0	33.62	7.9	25.1	10.74
C5	01 Apr 2020	8	13.60	88.06	6.2	33.63	7.8	25.2	7.05
C5	01 Apr 2020	9	12.80	88.06	5.5	33.72	7.8	25.4	3.95
C5	01 Apr 2020	10	12.62	85.72	5.2	33.67	7.7	25.4	2.27
C5	10 Apr 2020	1	15.88	62.37	9.3	33.24	8.3	24.4	12.44
C5	10 Apr 2020	2	15.88	62.99	9.3	33.24	8.3	24.4	12.02
C5	10 Apr 2020	3	15.88	64.48	9.4	33.24	8.3	24.4	12.56
C5	10 Apr 2020	4	15.88	64.73	9.4	33.24	8.3	24.4	12.87
C5	10 Apr 2020	5	15.88	64.63	9.3	33.24	8.3	24.4	13.51
C5	10 Apr 2020	6	15.88	64.95	9.4	33.24	8.3	24.4	13.55
C5	10 Apr 2020	7	15.88	64.67	9.4	33.24	8.3	24.4	13.53
C5	10 Apr 2020	8	15.88	64.79	9.3	33.24	8.3	24.4	13.34
C5	10 Apr 2020	9	15.88	65.33	9.3	33.24	8.3	24.4	13.52
C5	10 Apr 2020	10	15.88	65.84	9.3	33.25	8.3	24.4	14.03
C5	10 Apr 2020	11	15.88	65.66	9.3	33.25	8.3	24.4	13.84
C5	14 Apr 2020	1	16.36	78.68	8.6	32.72	8.2	23.9	1.32
C5	14 Apr 2020	2	16.36	78.88	8.6	32.73	8.2	23.9	1.36
C5	14 Apr 2020	3	16.25	79.14	8.4	32.78	8.2	24.0	1.36
C5	14 Apr 2020	4	16.21	79.39	8.3	32.80	8.2	24.0	1.54
C5	14 Apr 2020	5	16.24	81.08	8.4	32.88	8.2	24.1	1.99
C5	14 Apr 2020	6	15.69	84.77	7.7	33.26	8.1	24.5	1.83
C5	14 Apr 2020	7	15.35	87.10	7.0	33.40	8.0	24.7	1.49

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C5	14 Apr 2020	8	15.27	87.81	6.7	33.41	8.0	24.7	1.07
C5	14 Apr 2020	9	15.18	87.47	6.6	33.43	8.0	24.7	0.81
C5	14 Apr 2020	10	15.01	86.29	6.5	33.44	8.0	24.8	0.61
C5	21 Apr 2020	1	16.10	77.28	9.6	33.26	8.2	24.4	1.00
C5	21 Apr 2020	2	15.90	64.53	9.6	33.27	8.2	24.4	1.30
C5	21 Apr 2020	3	15.67	60.51	9.1	33.31	8.2	24.5	2.29
C5	21 Apr 2020	4	14.81	76.57	7.7	33.42	8.1	24.8	3.78
C5	21 Apr 2020	5	13.96	80.67	6.8	33.69	8.0	25.2	2.96
C5	21 Apr 2020	6	12.71	84.68	5.6	33.73	7.8	25.5	2.07
C5	21 Apr 2020	7	12.32	87.40	5.0	33.81	7.8	25.6	1.26
C5	21 Apr 2020	8	12.03	87.51	4.6	33.77	7.7	25.6	0.82
C5	21 Apr 2020	9	11.88	87.66	4.5	33.79	7.7	25.7	0.81
C5	21 Apr 2020	10	11.84	83.79	4.4	33.77	7.7	25.7	0.74
C5	21 Apr 2020	11	11.71	76.06	4.3	33.78	7.7	25.7	0.64
C5	28 Apr 2020	1	17.63	51.61	11.2	33.56	8.4	24.3	27.59
C5	28 Apr 2020	2	17.51	52.83	11.2	33.58	8.3	24.3	24.60
C5	28 Apr 2020	3	17.48	56.33	11.2	33.57	8.3	24.3	23.55
C5	28 Apr 2020	4	17.39	59.52	11.1	33.58	8.3	24.3	20.56
C5	28 Apr 2020	5	16.95	58.28	10.4	33.62	8.3	24.5	16.38
C5	28 Apr 2020	6	16.41	74.47	9.4	33.65	8.2	24.6	11.72
C5	28 Apr 2020	7	15.73	75.12	8.0	33.71	8.2	24.8	6.37
C5	28 Apr 2020	8	13.41	68.87	5.7	33.90	7.9	25.5	3.84
C5	28 Apr 2020	9	13.88	58.00	5.3	33.61	7.7	25.1	2.06
C6	01 Apr 2020	1	15.28	75.79	8.9	33.44	8.1	24.7	4.88
C6	01 Apr 2020	2	15.29	74.16	9.0	33.44	8.1	24.7	5.12
C6	01 Apr 2020	3	15.29	73.04	9.0	33.44	8.1	24.7	6.16
C6	01 Apr 2020	4	15.27	72.39	8.9	33.45	8.1	24.7	7.58
C6	01 Apr 2020	5	15.19	73.11	8.6	33.48	8.1	24.8	8.83
C6	01 Apr 2020	6	14.10	85.29	7.3	33.69	7.9	25.2	9.12
C6	01 Apr 2020	7	13.25	87.71	5.9	33.73	7.8	25.4	8.70
C6	01 Apr 2020	8	13.11	88.19	5.1	33.60	7.7	25.3	4.99
C6	10 Apr 2020	1	15.93	61.35	8.7	33.14	8.3	24.3	12.82
C6	10 Apr 2020	2	15.93	63.20	8.7	33.14	8.3	24.3	12.51
C6	10 Apr 2020	3	15.93	64.24	8.8	33.14	8.3	24.3	12.40
C6	10 Apr 2020	4	15.93	64.97	8.7	33.14	8.3	24.3	13.16
C6	10 Apr 2020	5	15.93	65.27	8.8	33.14	8.3	24.3	13.01
C6	10 Apr 2020	6	15.93	66.24	8.7	33.15	8.3	24.3	13.23
C6	10 Apr 2020	7	15.92	69.18	8.7	33.17	8.2	24.4	13.26
C6	10 Apr 2020	8	15.91	68.96	8.6	33.17	8.2	24.4	12.38
C6	10 Apr 2020	9	15.83	74.05	8.1	33.29	8.2	24.5	11.63
C6	10 Apr 2020	10	15.84	75.75	7.8	33.29	8.1	24.5	5.43
C6	14 Apr 2020	1	16.24	79.36	8.9	32.76	8.2	24.0	1.27
C6	14 Apr 2020	2	16.24	79.61	8.9	32.76	8.2	24.0	1.27
C6	14 Apr 2020	3	16.20	79.31	8.8	32.78	8.2	24.0	1.22
C6	14 Apr 2020	4	16.13	77.79	8.8	32.84	8.2	24.1	1.55
C6	14 Apr 2020	5	16.07	77.59	8.8	32.93	8.2	24.1	2.79
C6	14 Apr 2020	6	16.06	79.55	8.6	32.94	8.2	24.2	3.92
C6	14 Apr 2020	7	15.94	81.19	8.0	33.07	8.1	24.3	4.34
C6	14 Apr 2020	8	15.47	84.03	6.9	33.34	8.0	24.6	3.75
C6	14 Apr 2020	9	15.67	85.15	6.8	33.20	8.0	24.4	2.49

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C6	21 Apr 2020	1	16.01	58.38	10.8	33.31	8.3	24.4	6.90
C6	21 Apr 2020	2	15.89	61.39	10.7	33.34	8.3	24.5	6.14
C6	21 Apr 2020	3	15.62	66.39	10.0	33.38	8.3	24.6	8.81
C6	21 Apr 2020	4	14.95	81.04	8.0	33.40	8.1	24.7	11.89
C6	21 Apr 2020	5	13.59	76.76	6.9	33.74	8.0	25.3	6.92
C6	21 Apr 2020	6	13.62	74.19	6.3	33.56	7.9	25.2	3.05
C6	21 Apr 2020	7	12.54	84.02	5.8	33.81	7.9	25.6	1.81
C6	21 Apr 2020	8	12.27	87.83	5.0	33.73	7.8	25.6	1.60
C6	21 Apr 2020	9	12.00	87.13	4.8	33.76	7.8	25.6	0.99
C6	21 Apr 2020	10	12.05	77.67	4.6	33.76	7.8	25.6	0.65
C6	28 Apr 2020	1	18.46	2.11	9.8	33.55	8.3	24.0	62.31
C6	28 Apr 2020	2	18.17	12.77	9.1	33.57	8.3	24.1	62.31
C6	28 Apr 2020	3	18.03	29.25	8.9	33.56	8.3	24.2	62.31
C6	28 Apr 2020	4	17.75	45.16	8.8	33.59	8.3	24.3	55.69
C6	28 Apr 2020	5	17.03	64.60	8.4	33.64	8.2	24.5	27.31
C6	28 Apr 2020	6	15.97	65.63	7.0	33.73	8.1	24.8	15.91
C6	28 Apr 2020	7	13.17	71.41	5.7	33.94	7.9	25.5	12.39
C6	28 Apr 2020	8	12.67	76.93	5.2	33.77	7.8	25.5	6.95
C7	01 Apr 2020	1	14.97	81.88	8.6	33.45	8.0	24.8	3.76
C7	01 Apr 2020	2	14.89	81.50	8.5	33.47	8.0	24.8	3.81
C7	01 Apr 2020	3	14.51	79.04	8.2	33.55	8.0	25.0	4.44
C7	01 Apr 2020	4	13.83	79.73	7.5	33.61	7.9	25.1	6.01
C7	01 Apr 2020	5	13.42	84.21	7.0	33.63	7.9	25.2	5.77
C7	01 Apr 2020	6	13.02	86.44	6.6	33.64	7.8	25.3	4.52
C7	01 Apr 2020	7	12.82	87.08	6.3	33.65	7.8	25.4	3.56
C7	01 Apr 2020	8	12.55	87.86	6.1	33.66	7.8	25.4	3.13
C7	01 Apr 2020	9	12.46	88.77	5.9	33.65	7.8	25.5	2.54
C7	01 Apr 2020	10	12.44	89.13	5.9	33.64	7.8	25.4	1.96
C7	01 Apr 2020	11	12.37	89.25	5.8	33.65	7.8	25.5	1.68
C7	01 Apr 2020	12	12.30	89.32	5.7	33.65	7.8	25.5	1.65
C7	01 Apr 2020	13	12.22	89.40	5.6	33.66	7.8	25.5	1.53
C7	01 Apr 2020	14	12.10	89.69	5.6	33.67	7.8	25.5	1.37
C7	01 Apr 2020	15	12.06	89.87	5.5	33.66	7.8	25.5	1.51
C7	01 Apr 2020	16	12.05	89.84	5.5	33.66	7.8	25.5	1.22
C7	01 Apr 2020	17	11.98	89.83	5.4	33.67	7.7	25.6	1.14
C7	10 Apr 2020	1	15.75	70.45	8.9	33.27	8.2	24.5	9.06
C7	10 Apr 2020	2	15.75	72.78	8.9	33.31	8.2	24.5	9.80
C7	10 Apr 2020	3	15.75	73.28	9.0	33.31	8.2	24.5	9.59
C7	10 Apr 2020	4	15.73	73.71	8.9	33.33	8.2	24.5	9.85
C7	10 Apr 2020	5	15.71	75.89	9.0	33.34	8.2	24.5	9.76
C7	10 Apr 2020	6	15.67	76.62	9.0	33.35	8.2	24.6	9.82
C7	10 Apr 2020	7	15.62	76.37	9.0	33.35	8.2	24.6	9.62
C7	10 Apr 2020	8	15.60	76.31	9.0	33.35	8.2	24.6	8.52
C7	10 Apr 2020	9	15.58	76.04	8.9	33.35	8.2	24.6	8.86
C7	10 Apr 2020	10	15.57	76.73	8.9	33.37	8.2	24.6	8.93
C7	10 Apr 2020	11	15.57	79.09	9.0	33.38	8.2	24.6	8.99
C7	10 Apr 2020	12	15.58	79.70	8.8	33.39	8.2	24.6	8.70
C7	10 Apr 2020	13	15.58	80.19	8.9	33.40	8.2	24.6	7.98
C7	10 Apr 2020	14	15.59	81.23	8.8	33.40	8.2	24.6	6.53
C7	10 Apr 2020	15	15.55	83.71	8.8	33.42	8.2	24.6	5.95
C7	10 Apr 2020	16	15.47	84.32	8.6	33.45	8.2	24.7	4.35

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C7	10 Apr 2020	17	15.35	85.58	8.2	33.47	8.1	24.7	3.71
C7	10 Apr 2020	18	15.39	86.48	8.2	33.45	8.1	24.7	2.09
C7	14 Apr 2020	1	16.32	74.73	9.4	31.31	8.2	22.8	3.96
C7	14 Apr 2020	2	16.21	76.11	9.6	32.84	8.2	24.0	3.85
C7	14 Apr 2020	3	16.21	77.65	9.8	33.05	8.2	24.2	4.98
C7	14 Apr 2020	4	16.21	77.82	9.8	33.06	8.2	24.2	6.87
C7	14 Apr 2020	5	16.20	77.51	9.8	33.09	8.2	24.2	8.04
C7	14 Apr 2020	6	16.18	77.18	9.8	33.09	8.2	24.2	8.26
C7	14 Apr 2020	7	16.15	76.78	9.7	33.10	8.2	24.3	8.30
C7	14 Apr 2020	8	16.14	75.33	9.7	33.11	8.2	24.3	8.83
C7	14 Apr 2020	9	16.08	75.70	9.6	33.12	8.2	24.3	9.43
C7	14 Apr 2020	10	16.04	78.38	9.6	33.12	8.2	24.3	9.59
C7	14 Apr 2020	11	16.02	79.26	9.5	33.12	8.2	24.3	9.04
C7	14 Apr 2020	12	15.91	79.90	9.2	33.15	8.2	24.3	8.15
C7	14 Apr 2020	13	15.64	80.36	8.8	33.23	8.2	24.5	7.59
C7	14 Apr 2020	14	15.49	82.87	8.4	33.25	8.1	24.5	7.20
C7	14 Apr 2020	15	15.27	84.44	8.1	33.34	8.1	24.6	5.61
C7	14 Apr 2020	16	14.09	85.85	7.3	33.69	8.0	25.2	4.79
C7	14 Apr 2020	17	13.81	89.85	6.6	33.57	7.9	25.1	3.31
C7	21 Apr 2020	1	16.19	76.13	10.4	33.33	8.3	24.4	2.04
C7	21 Apr 2020	2	16.14	61.07	10.4	33.35	8.3	24.4	2.10
C7	21 Apr 2020	3	15.27	59.31	9.6	33.53	8.2	24.8	2.53
C7	21 Apr 2020	4	14.02	76.52	7.7	33.62	8.0	25.1	7.87
C7	21 Apr 2020	5	13.50	82.79	6.5	33.63	7.9	25.2	9.34
C7	21 Apr 2020	6	12.93	83.16	5.9	33.72	7.8	25.4	7.64
C7	21 Apr 2020	7	12.74	83.93	5.4	33.66	7.8	25.4	6.79
C7	21 Apr 2020	8	12.60	83.72	5.3	33.73	7.8	25.5	5.70
C7	21 Apr 2020	9	12.13	85.24	5.0	33.77	7.8	25.6	5.49
C7	21 Apr 2020	10	11.75	86.32	4.8	33.84	7.7	25.7	4.97
C7	21 Apr 2020	11	11.35	88.62	4.6	33.84	7.7	25.8	4.20
C7	21 Apr 2020	12	11.19	90.02	4.5	33.84	7.7	25.8	3.12
C7	21 Apr 2020	13	11.10	90.06	4.4	33.84	7.7	25.9	2.31
C7	21 Apr 2020	14	11.09	90.15	4.3	33.84	7.7	25.9	1.58
C7	21 Apr 2020	15	11.08	89.92	4.3	33.84	7.7	25.9	1.04
C7	21 Apr 2020	16	11.07	89.57	4.2	33.83	7.7	25.8	0.73
C7	21 Apr 2020	17	11.09	88.80	4.2	33.83	7.7	25.8	0.68
C7	21 Apr 2020	18	11.09	88.10	4.2	33.83	7.7	25.8	0.57
C7	28 Apr 2020	1	18.38	34.56	12.8	33.50	8.4	24.0	51.64
C7	28 Apr 2020	2	18.13	40.36	12.6	33.54	8.4	24.1	47.87
C7	28 Apr 2020	3	17.40	71.29	11.3	33.59	8.3	24.3	33.62
C7	28 Apr 2020	4	16.30	76.92	9.8	33.75	8.2	24.7	17.38
C7	28 Apr 2020	5	13.77	79.58	7.3	33.88	8.0	25.4	9.52
C7	28 Apr 2020	6	13.20	80.83	6.2	33.77	7.8	25.4	7.15
C7	28 Apr 2020	7	12.81	80.60	5.8	33.77	7.8	25.5	6.50
C7	28 Apr 2020	8	12.43	81.03	5.5	33.76	7.8	25.5	6.41
C7	28 Apr 2020	9	12.40	79.52	5.3	33.75	7.7	25.5	6.72
C7	28 Apr 2020	10	12.34	77.37	5.2	33.75	7.7	25.6	7.31
C7	28 Apr 2020	11	12.19	75.54	5.1	33.78	7.7	25.6	8.32
C7	28 Apr 2020	12	12.08	74.58	4.9	33.77	7.7	25.6	9.25
C7	28 Apr 2020	13	11.98	74.16	4.8	33.77	7.7	25.6	9.71
C7	28 Apr 2020	14	11.92	75.33	4.7	33.78	7.7	25.7	10.02
C7	28 Apr 2020	15	11.91	76.55	4.8	33.77	7.7	25.7	10.08

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ -t)	Chlor (μ g/L)
C7	28 Apr 2020	16	11.90	77.29	4.8	33.77	7.7	25.7	9.49
C7	28 Apr 2020	17	11.84	79.28	4.5	33.79	7.7	25.7	8.52
C8	01 Apr 2020	1	15.29	79.87	8.9	33.42	8.1	24.7	3.74
C8	01 Apr 2020	2	15.28	79.86	8.9	33.43	8.1	24.7	3.91
C8	01 Apr 2020	3	15.25	79.33	8.8	33.44	8.1	24.7	4.79
C8	01 Apr 2020	4	15.05	78.89	8.6	33.48	8.0	24.8	5.62
C8	01 Apr 2020	5	14.80	83.64	8.1	33.51	8.0	24.9	5.42
C8	01 Apr 2020	6	14.40	84.92	7.7	33.54	7.9	25.0	4.20
C8	01 Apr 2020	7	14.02	84.79	7.2	33.56	7.9	25.1	3.16
C8	01 Apr 2020	8	13.77	84.20	6.9	33.57	7.9	25.1	2.97
C8	01 Apr 2020	9	13.65	83.26	6.6	33.56	7.9	25.2	3.25
C8	01 Apr 2020	10	13.00	78.02	6.2	33.69	7.8	25.4	4.81
C8	01 Apr 2020	11	12.07	79.80	5.6	33.73	7.8	25.6	9.69
C8	01 Apr 2020	12	11.97	89.34	5.4	33.68	7.7	25.6	7.22
C8	01 Apr 2020	13	11.87	89.53	5.3	33.68	7.7	25.6	4.33
C8	01 Apr 2020	14	11.88	89.65	5.2	33.68	7.7	25.6	2.08
C8	01 Apr 2020	15	11.77	89.69	5.2	33.70	7.7	25.6	1.22
C8	01 Apr 2020	16	11.60	89.35	5.1	33.71	7.7	25.7	1.02
C8	01 Apr 2020	17	11.24	89.15	4.9	33.77	7.7	25.8	0.87
C8	01 Apr 2020	18	11.18	88.04	4.8	33.74	7.7	25.8	0.72
C8	10 Apr 2020	1	15.55	71.95	9.1	33.26	8.2	24.5	3.57
C8	10 Apr 2020	2	15.55	79.65	9.1	33.26	8.2	24.5	3.39
C8	10 Apr 2020	3	15.55	80.44	9.1	33.26	8.2	24.5	3.58
C8	10 Apr 2020	4	15.56	81.99	9.1	33.26	8.2	24.5	3.69
C8	10 Apr 2020	5	15.56	82.86	9.1	33.26	8.2	24.5	3.91
C8	10 Apr 2020	6	15.56	82.82	9.1	33.26	8.2	24.5	4.02
C8	10 Apr 2020	7	15.56	82.55	9.1	33.27	8.2	24.5	4.16
C8	10 Apr 2020	8	15.58	82.22	9.1	33.27	8.2	24.5	4.23
C8	10 Apr 2020	9	15.58	82.36	9.1	33.29	8.2	24.5	4.28
C8	10 Apr 2020	10	15.60	82.72	9.1	33.31	8.2	24.5	4.38
C8	10 Apr 2020	11	15.62	83.23	9.1	33.33	8.2	24.5	4.39
C8	10 Apr 2020	12	15.63	83.79	9.2	33.34	8.2	24.6	3.84
C8	10 Apr 2020	13	15.63	84.08	9.3	33.35	8.2	24.6	3.27
C8	10 Apr 2020	14	15.64	84.18	9.2	33.37	8.2	24.6	2.67
C8	10 Apr 2020	15	15.62	84.40	9.2	33.38	8.2	24.6	2.22
C8	10 Apr 2020	16	15.54	84.47	9.0	33.42	8.2	24.6	1.93
C8	10 Apr 2020	17	15.51	84.72	8.9	33.42	8.2	24.6	1.75
C8	10 Apr 2020	18	15.50	84.30	8.9	33.42	8.2	24.6	1.56
C8	10 Apr 2020	19	15.51	84.41	8.9	33.41	8.2	24.6	1.39
C8	14 Apr 2020	1	16.29	68.52	9.7	31.84	8.2	23.2	4.00
C8	14 Apr 2020	2	16.22	70.61	10.2	32.97	8.2	24.1	4.19
C8	14 Apr 2020	3	16.17	71.02	10.4	33.18	8.3	24.3	6.55
C8	14 Apr 2020	4	16.09	75.77	10.5	33.23	8.3	24.4	9.75
C8	14 Apr 2020	5	16.02	81.12	10.2	33.26	8.2	24.4	9.68
C8	14 Apr 2020	6	15.77	83.21	10.0	33.34	8.2	24.5	8.01
C8	14 Apr 2020	7	15.78	83.76	10.5	33.39	8.2	24.6	6.88
C8	14 Apr 2020	8	15.75	84.27	10.5	33.38	8.2	24.6	5.65
C8	14 Apr 2020	9	15.63	84.39	10.2	33.41	8.2	24.6	4.88
C8	14 Apr 2020	10	15.54	83.32	9.7	33.40	8.2	24.6	4.52
C8	14 Apr 2020	11	15.50	82.48	9.3	33.39	8.1	24.6	5.16
C8	14 Apr 2020	12	15.49	82.27	9.1	33.40	8.1	24.6	5.43
C8	14 Apr 2020	13	15.40	82.07	8.7	33.40	8.1	24.6	5.82

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C8	14 Apr 2020	14	15.36	81.84	8.6	33.40	8.1	24.7	6.25
C8	14 Apr 2020	15	15.15	81.58	8.2	33.46	8.1	24.8	6.14
C8	14 Apr 2020	16	14.94	83.04	7.8	33.48	8.0	24.8	6.87
C8	14 Apr 2020	17	14.66	86.39	7.4	33.52	8.0	24.9	6.07
C8	14 Apr 2020	18	13.93	87.15	6.9	33.65	7.9	25.2	4.58
C8	14 Apr 2020	19	13.73	87.23	6.5	33.60	7.9	25.2	3.11
C8	21 Apr 2020	1	16.04	78.42	10.6	33.31	8.3	24.4	1.92
C8	21 Apr 2020	2	16.04	77.75	10.6	33.31	8.3	24.4	1.85
C8	21 Apr 2020	3	16.02	74.08	10.6	33.33	8.3	24.5	1.93
C8	21 Apr 2020	4	15.90	54.93	10.9	33.36	8.3	24.5	5.07
C8	21 Apr 2020	5	14.89	67.80	9.3	33.59	8.2	24.9	16.68
C8	21 Apr 2020	6	14.29	79.27	7.5	33.57	8.0	25.0	17.50
C8	21 Apr 2020	7	12.84	79.85	6.0	33.73	7.8	25.4	11.78
C8	21 Apr 2020	8	12.78	79.11	5.4	33.70	7.8	25.4	9.38
C8	21 Apr 2020	9	12.34	81.42	5.0	33.71	7.7	25.5	9.02
C8	21 Apr 2020	10	12.27	82.85	4.9	33.74	7.7	25.6	7.31
C8	21 Apr 2020	11	12.12	83.34	4.7	33.73	7.7	25.6	6.46
C8	21 Apr 2020	12	11.51	84.62	4.6	33.88	7.7	25.8	5.30
C8	21 Apr 2020	13	11.20	87.90	4.4	33.84	7.7	25.8	5.19
C8	21 Apr 2020	14	11.31	86.62	4.3	33.81	7.7	25.8	2.77
C8	21 Apr 2020	15	11.18	86.47	4.2	33.82	7.7	25.8	1.67
C8	21 Apr 2020	16	11.16	87.31	4.2	33.82	7.7	25.8	1.15
C8	21 Apr 2020	17	11.15	87.41	4.2	33.82	7.7	25.8	1.11
C8	21 Apr 2020	18	11.15	87.42	4.2	33.82	7.7	25.8	1.07
C8	21 Apr 2020	19	11.15	87.06	4.2	33.82	7.7	25.8	0.94
C8	28 Apr 2020	1	18.23	50.74	12.8	33.49	8.4	24.1	27.86
C8	28 Apr 2020	2	17.75	55.23	12.9	33.54	8.4	24.2	27.86
C8	28 Apr 2020	3	17.28	68.24	12.2	33.53	8.3	24.3	21.32
C8	28 Apr 2020	4	16.67	70.97	10.9	33.59	8.3	24.5	15.81
C8	28 Apr 2020	5	15.39	71.05	8.9	33.76	8.2	24.9	14.98
C8	28 Apr 2020	6	13.77	77.28	7.4	33.80	8.0	25.3	11.25
C8	28 Apr 2020	7	12.77	77.71	6.2	33.83	7.8	25.5	9.00
C8	28 Apr 2020	8	12.47	77.94	5.6	33.77	7.8	25.5	8.36
C8	28 Apr 2020	9	11.92	82.59	5.1	33.83	7.7	25.7	7.36
C8	28 Apr 2020	10	11.81	82.05	4.8	33.79	7.7	25.7	5.57
C8	28 Apr 2020	11	11.73	81.32	4.7	33.79	7.6	25.7	4.70
C8	28 Apr 2020	12	11.64	81.10	4.5	33.79	7.6	25.7	4.65
C8	28 Apr 2020	13	11.60	80.57	4.4	33.79	7.6	25.7	4.55
C8	28 Apr 2020	14	11.59	80.48	4.4	33.79	7.6	25.7	4.52
C8	28 Apr 2020	15	11.59	80.85	4.4	33.79	7.6	25.7	4.43
C8	28 Apr 2020	16	11.57	80.79	4.3	33.78	7.6	25.7	4.44
C8	28 Apr 2020	17	11.57	81.00	4.3	33.78	7.6	25.7	4.24
C8	28 Apr 2020	18	11.56	81.11	4.3	33.78	7.6	25.7	3.96

NA = not available

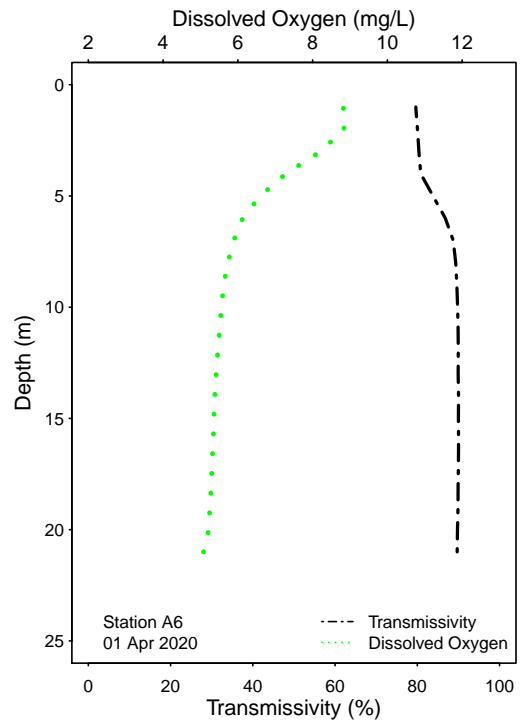
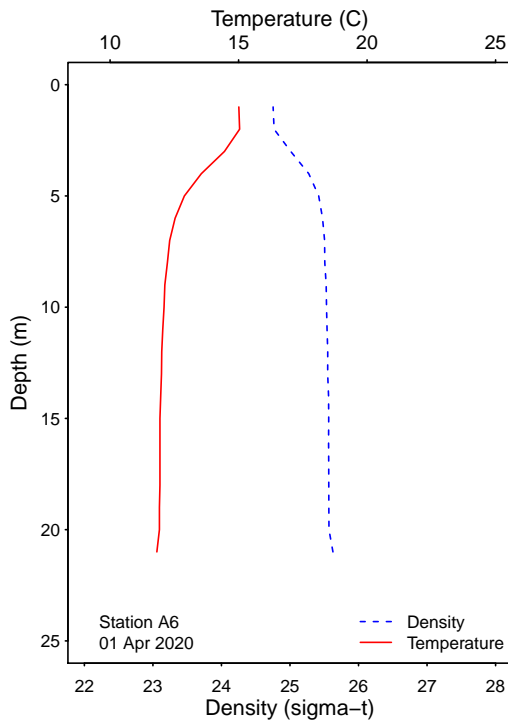
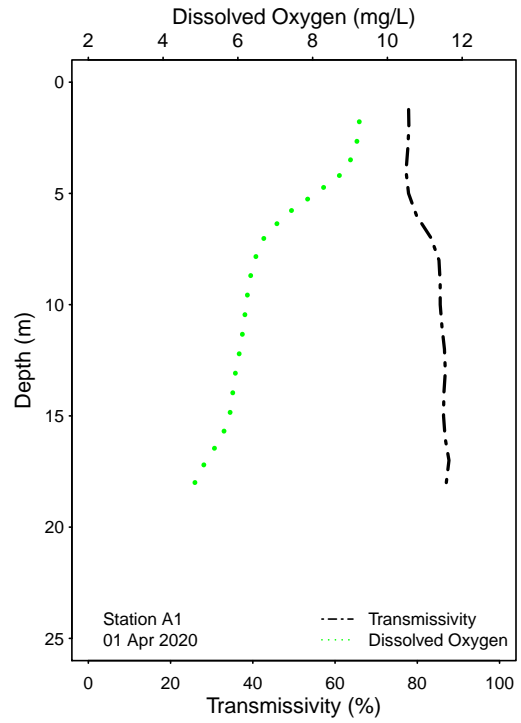
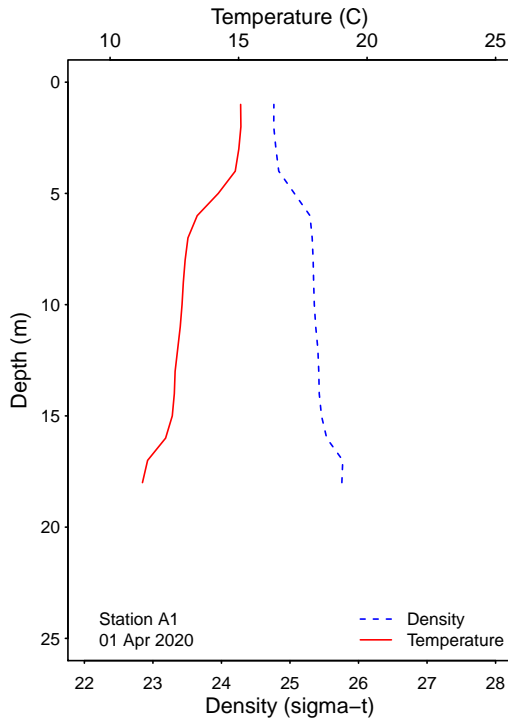


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

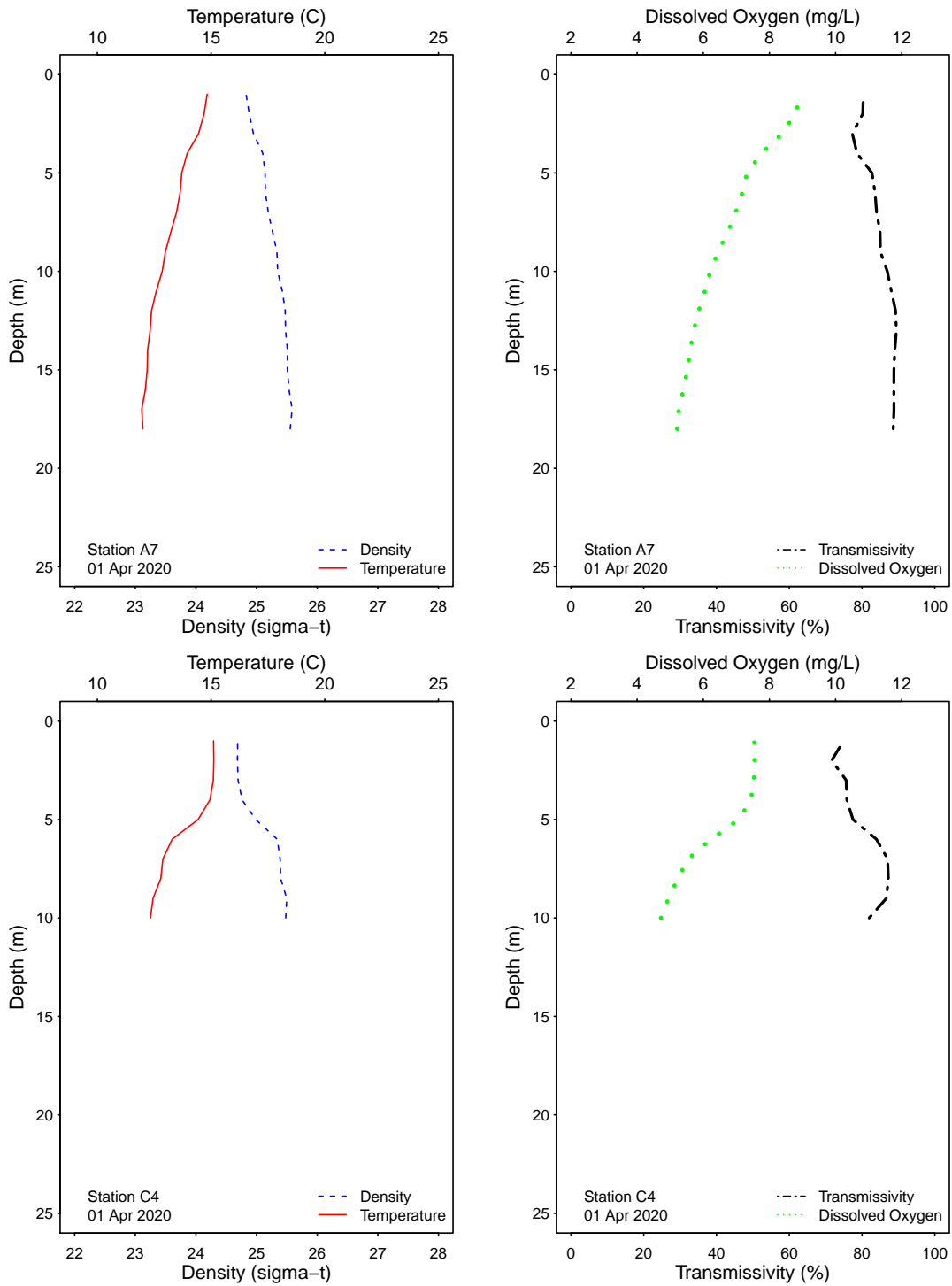


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

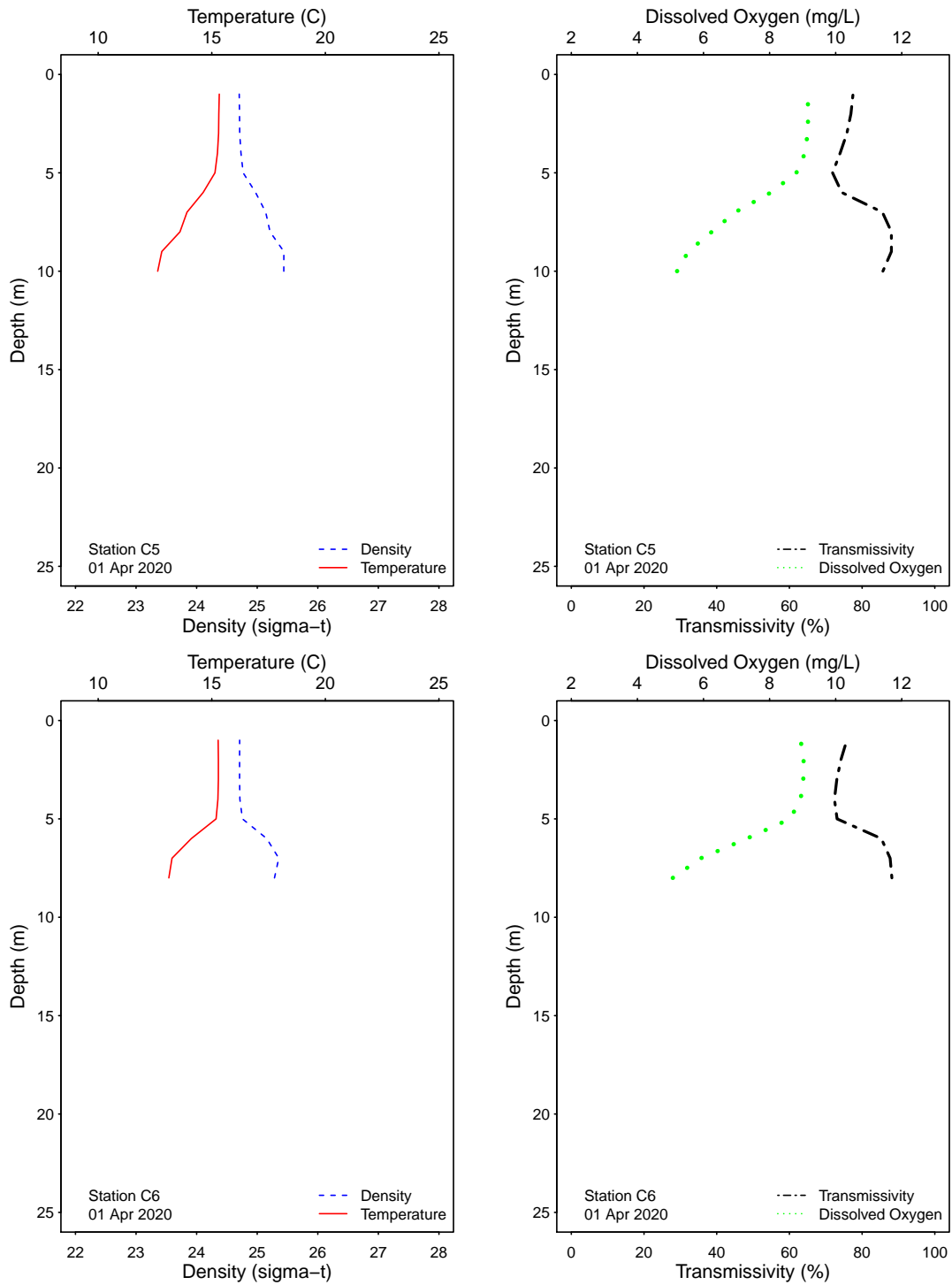


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

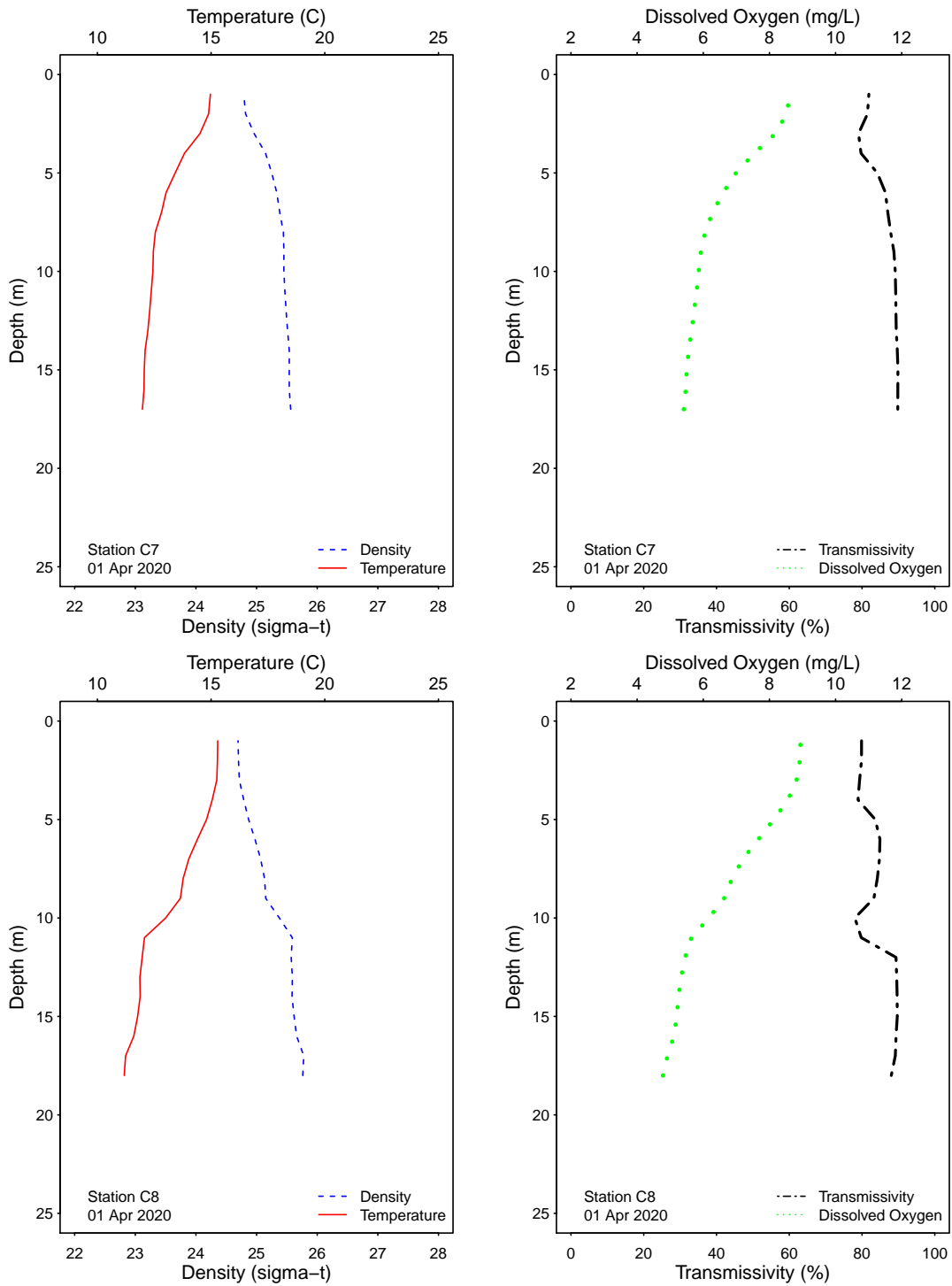


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

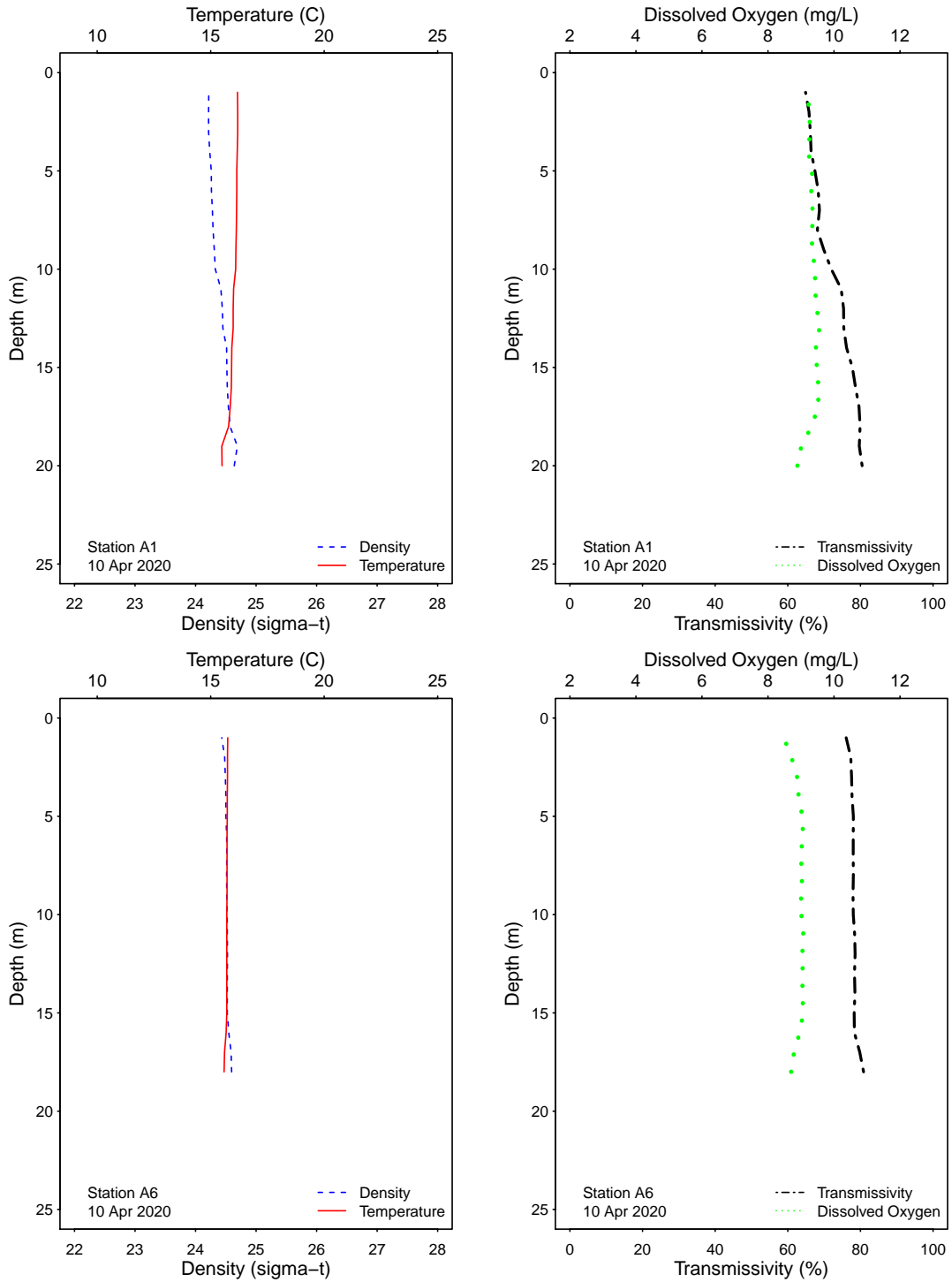


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

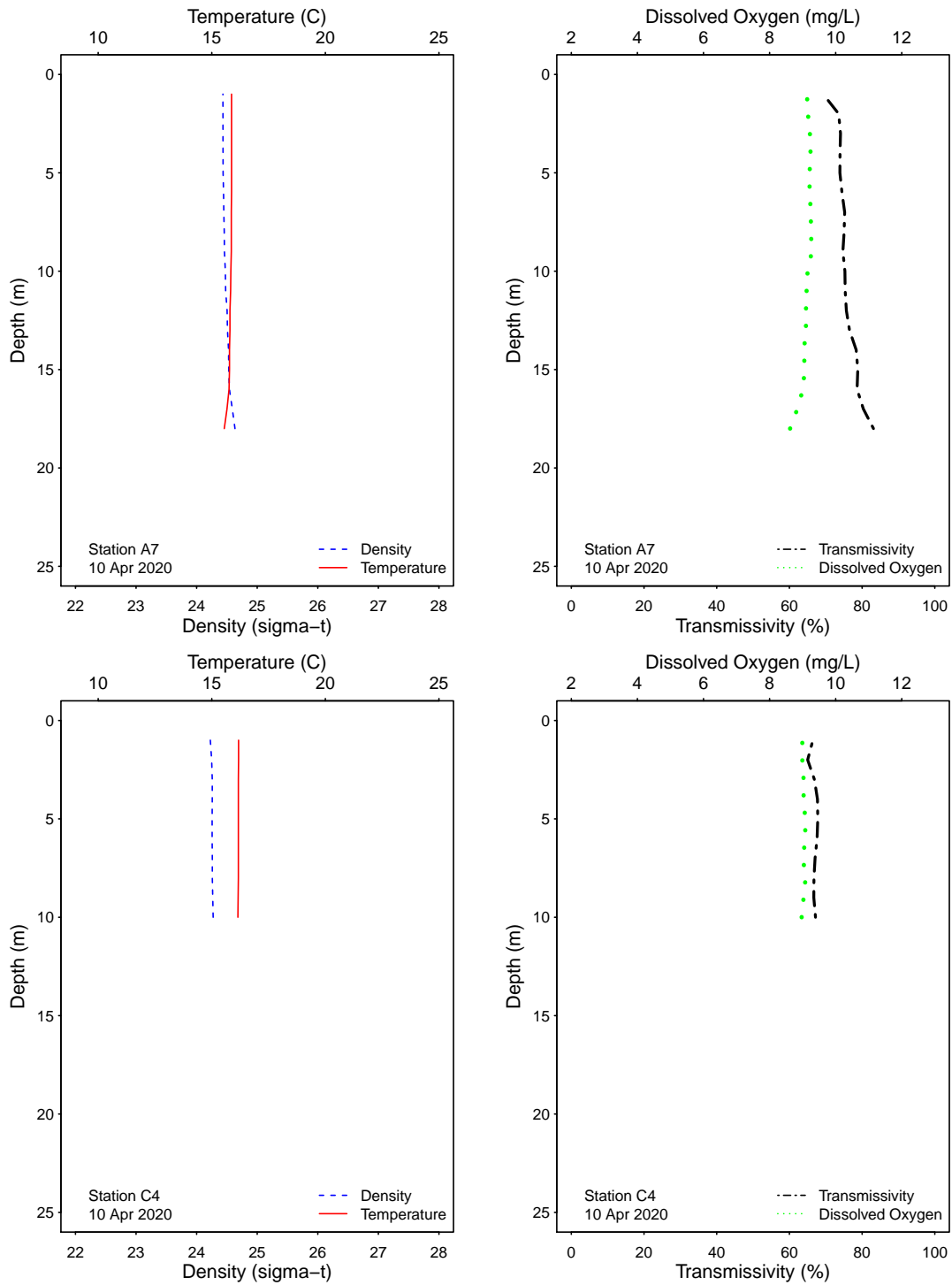


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

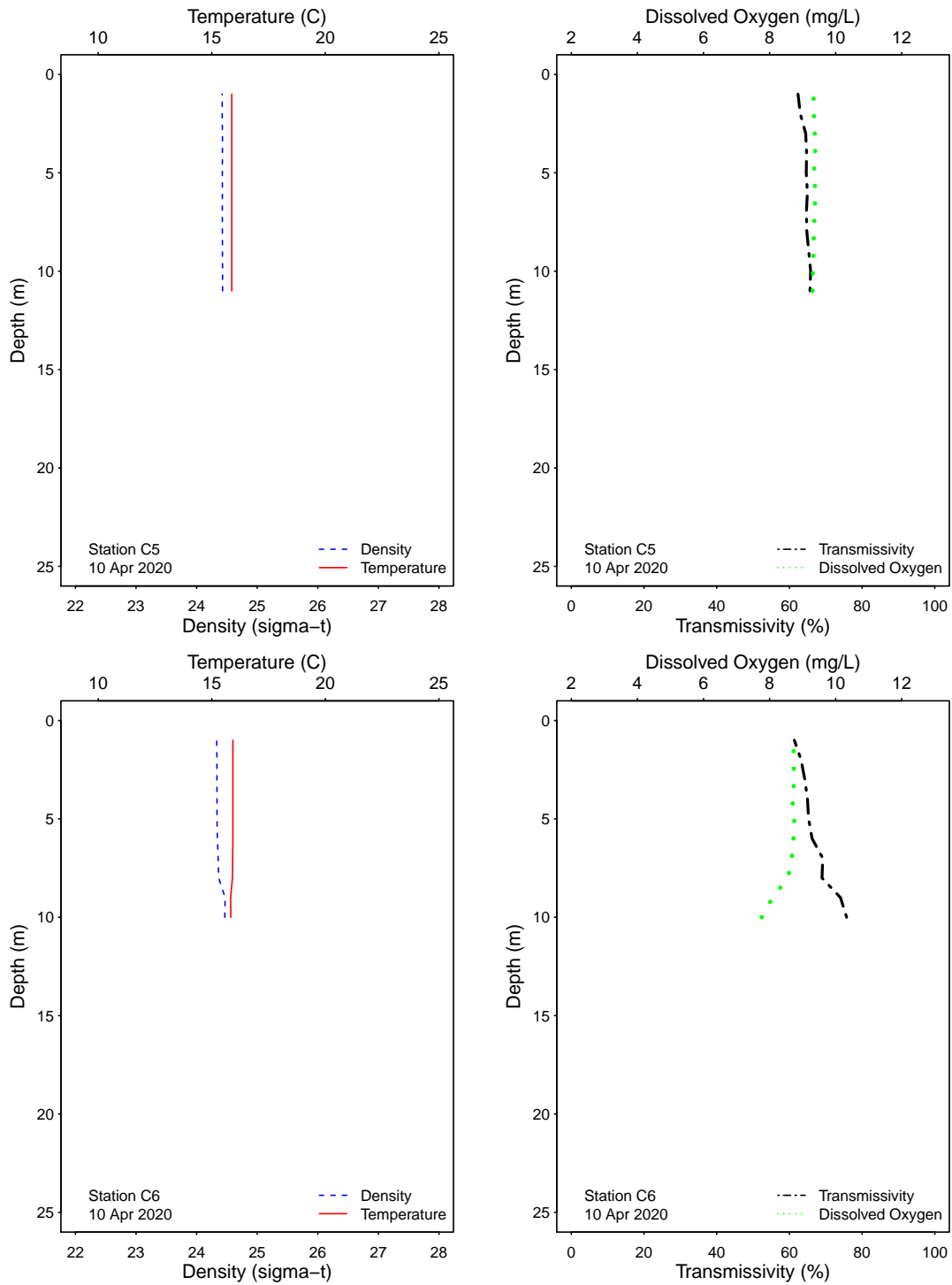


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

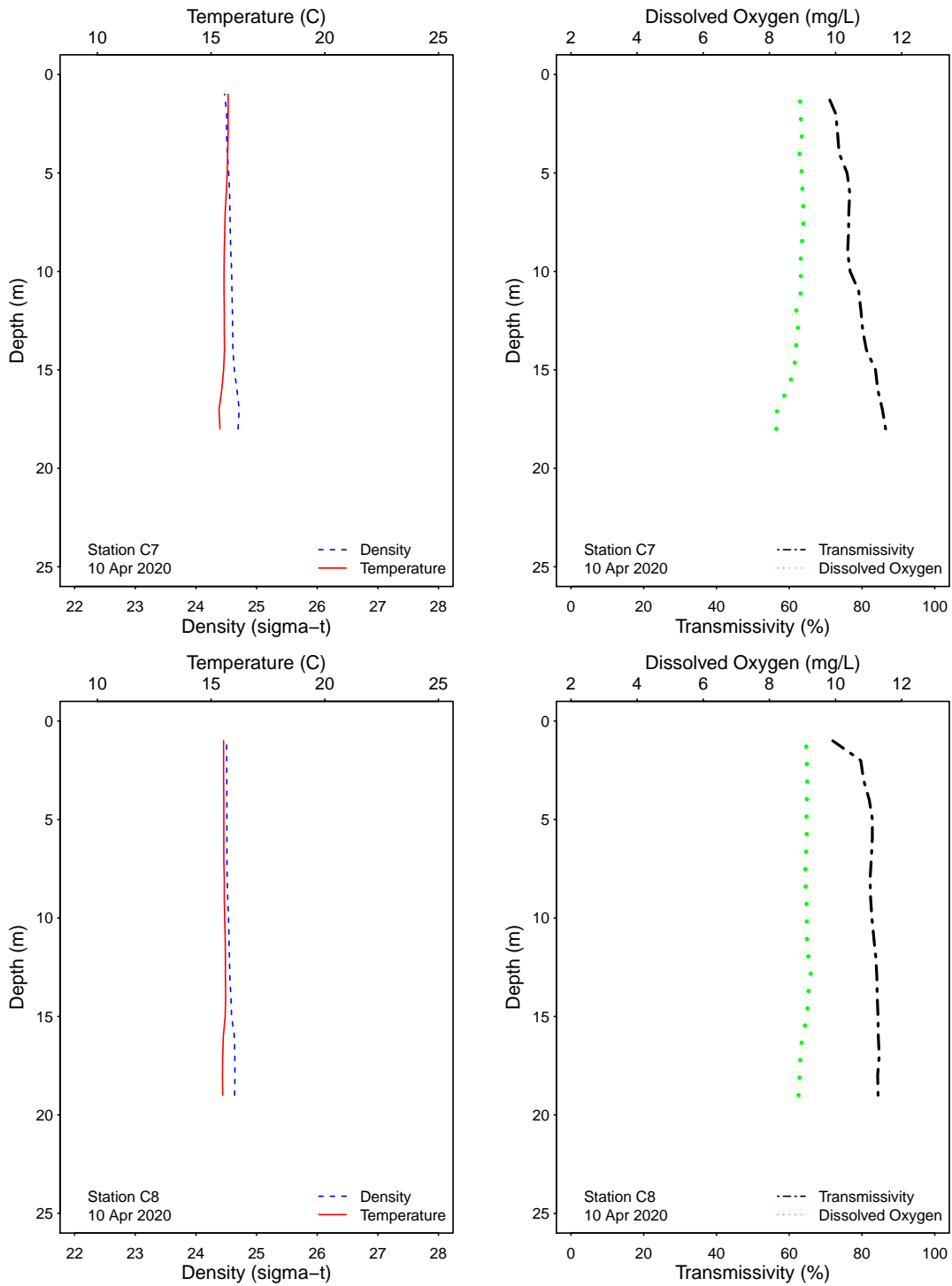


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

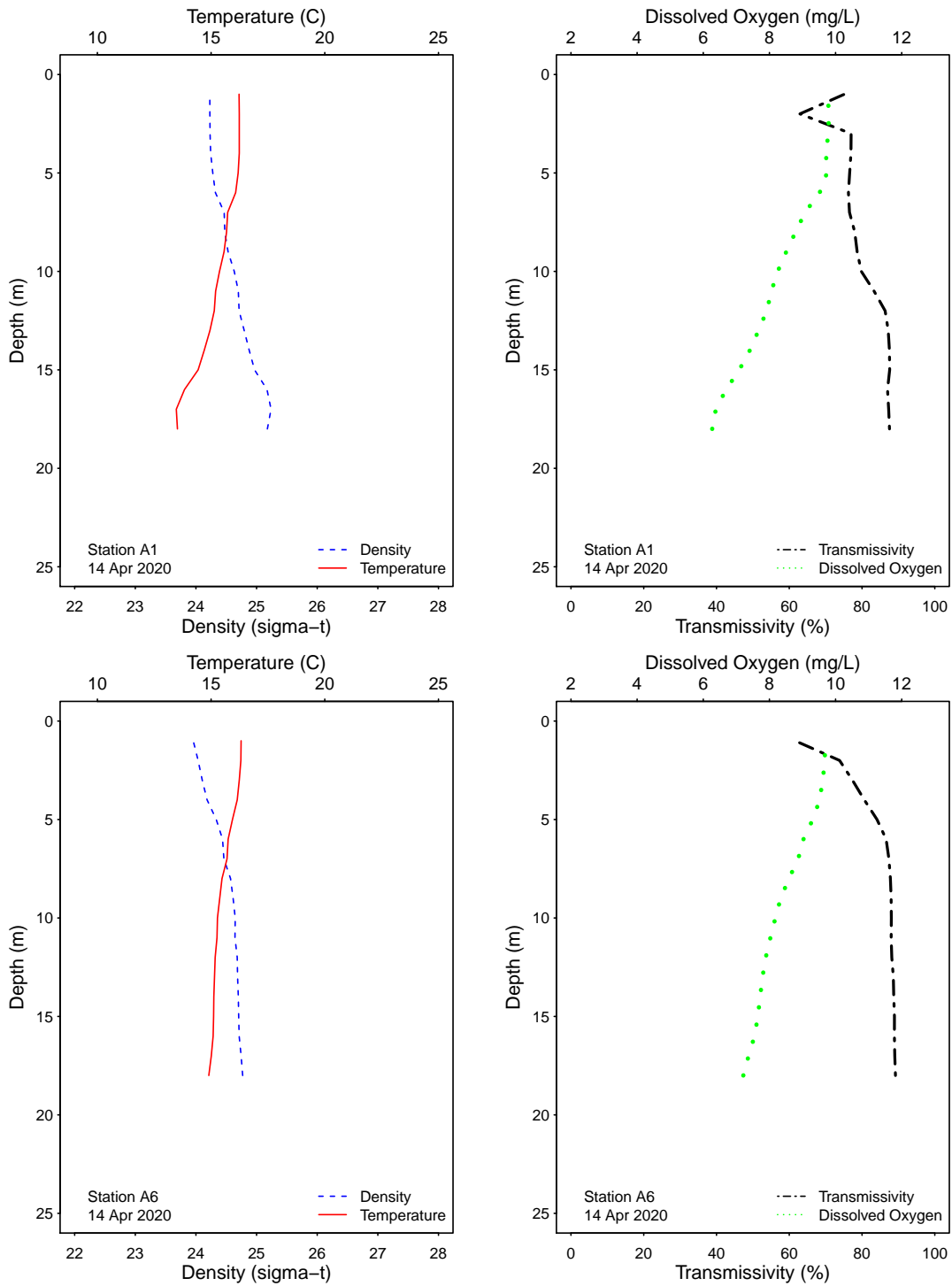


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

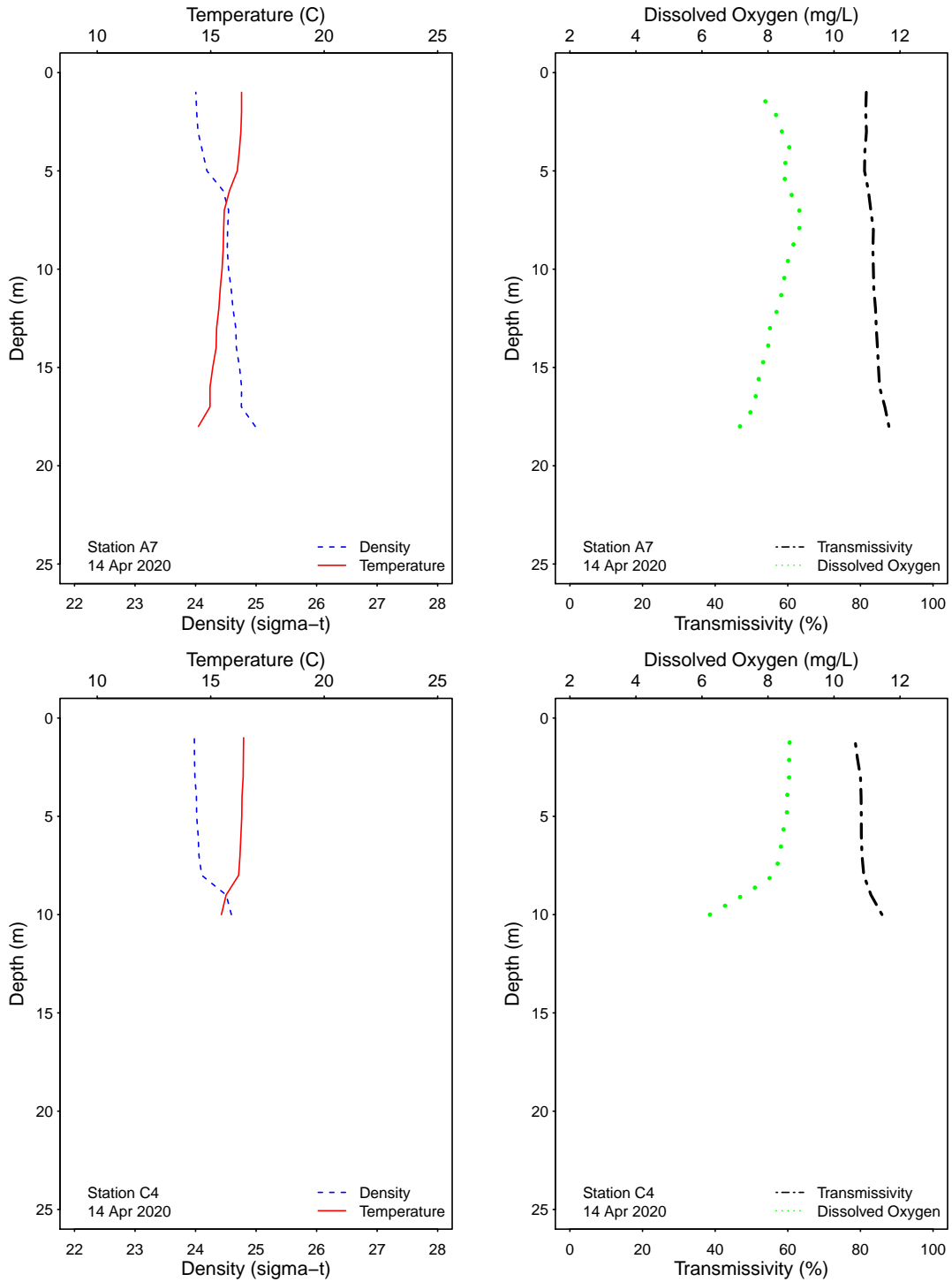


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

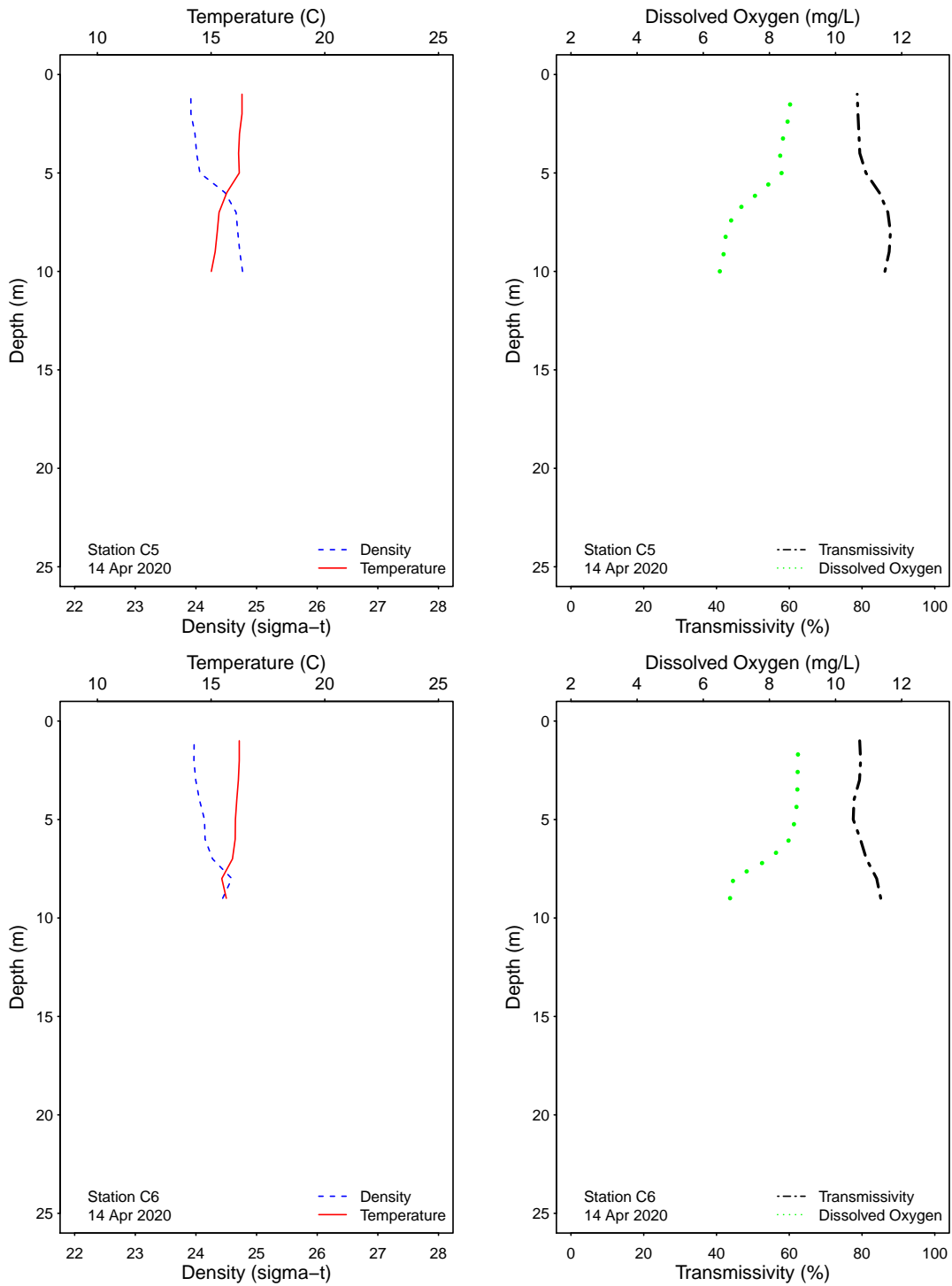


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

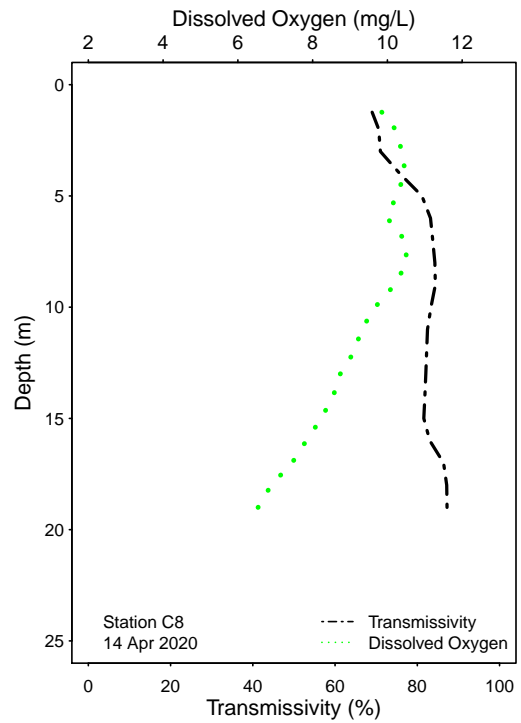
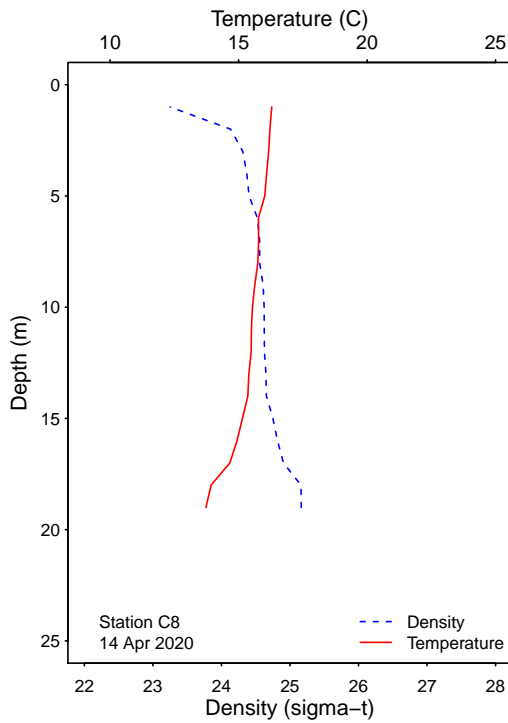
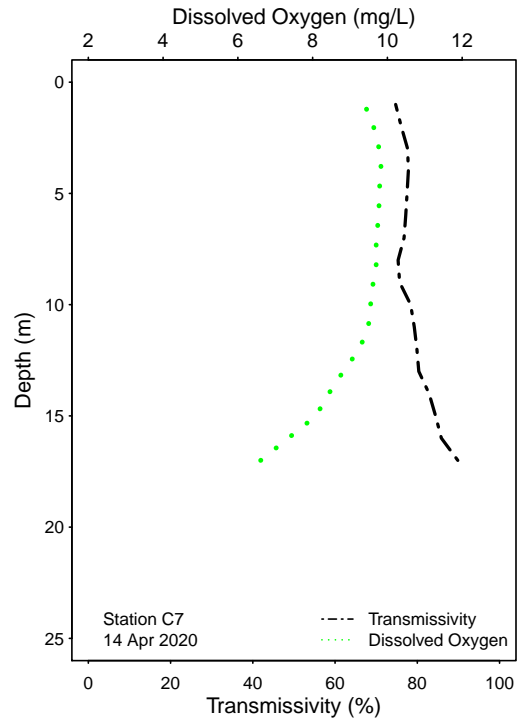
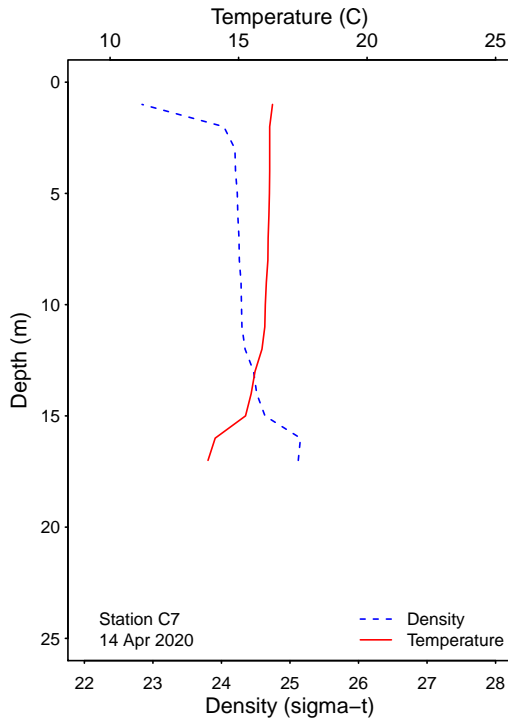


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

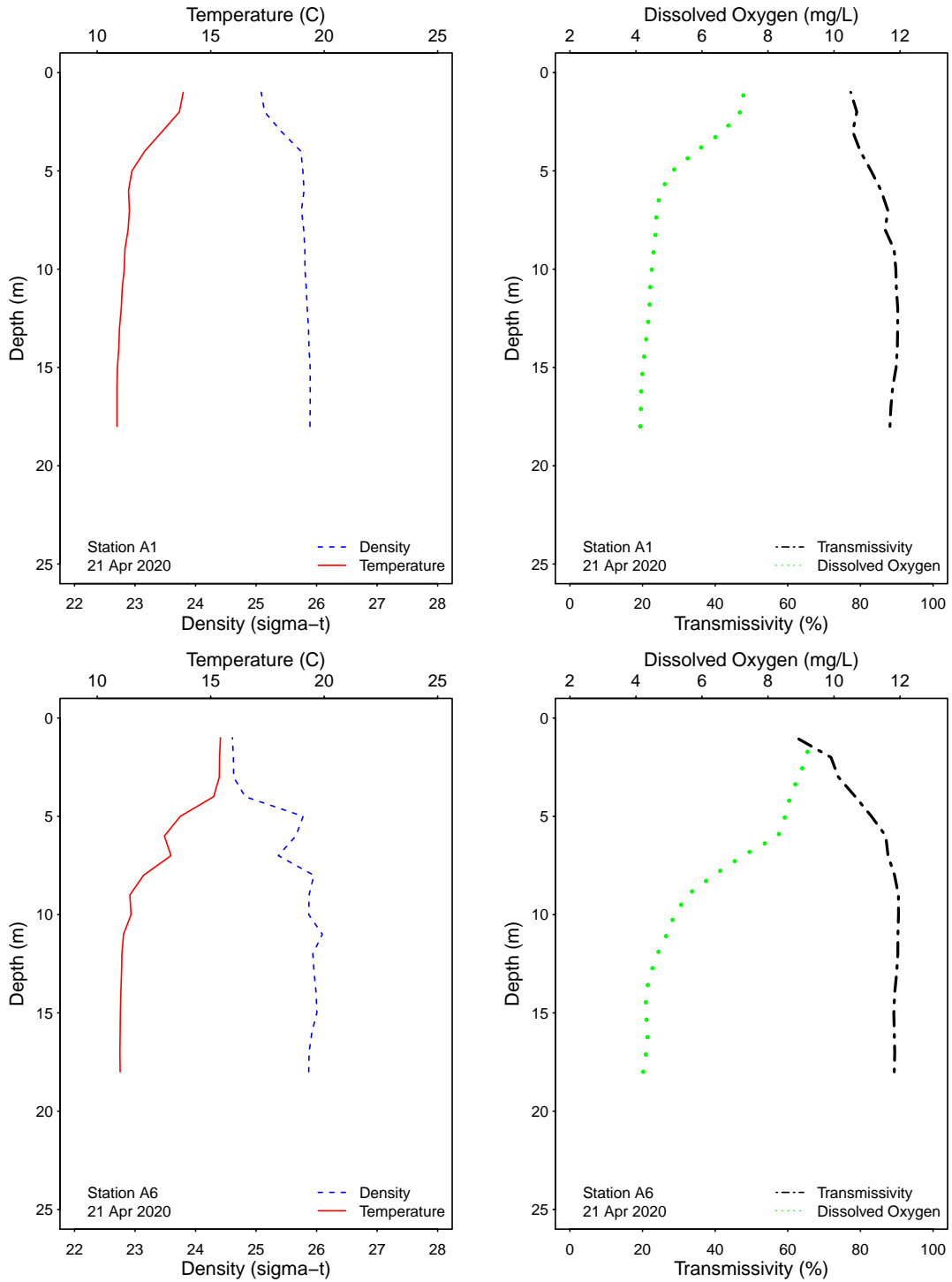


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

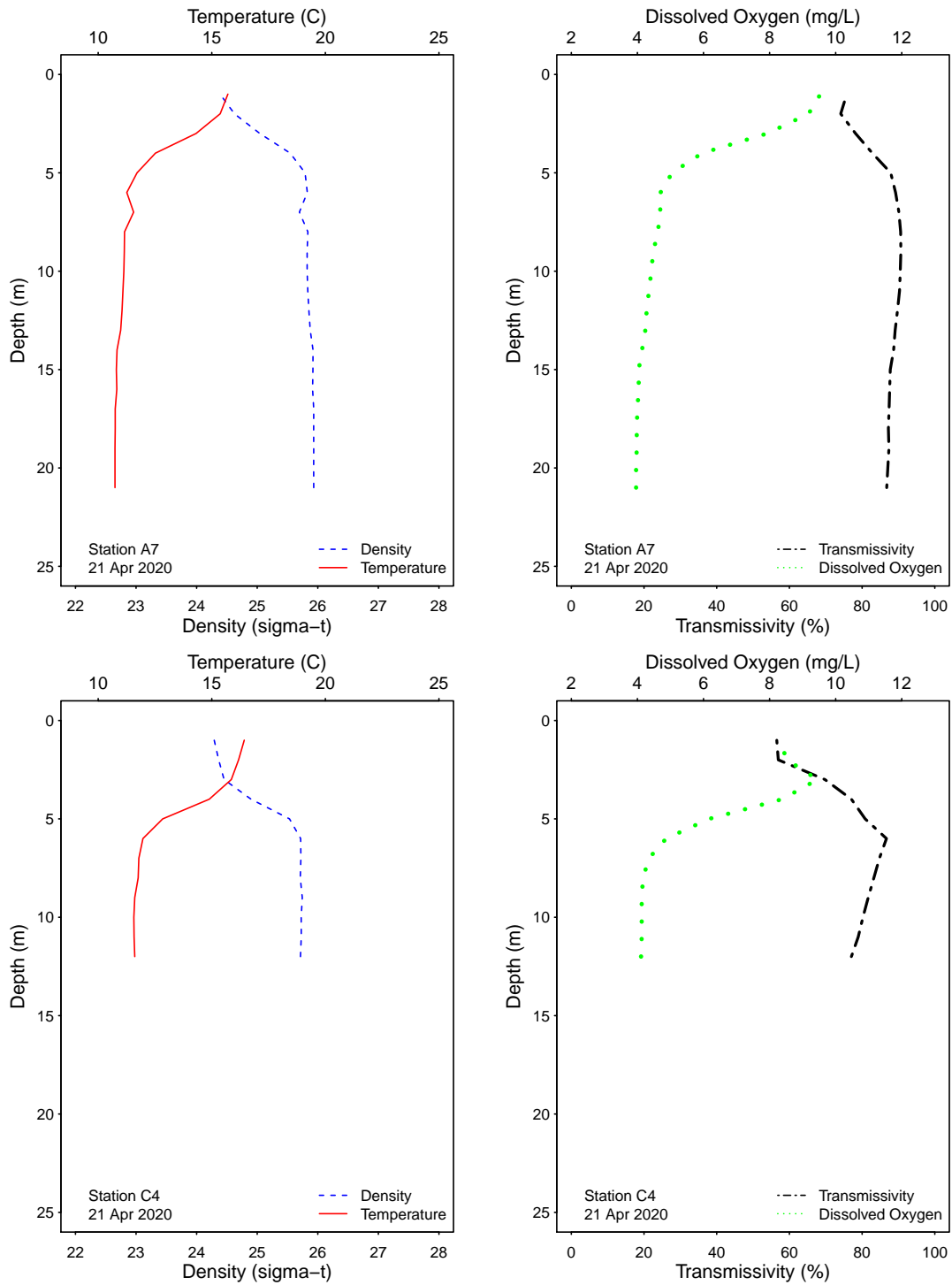


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

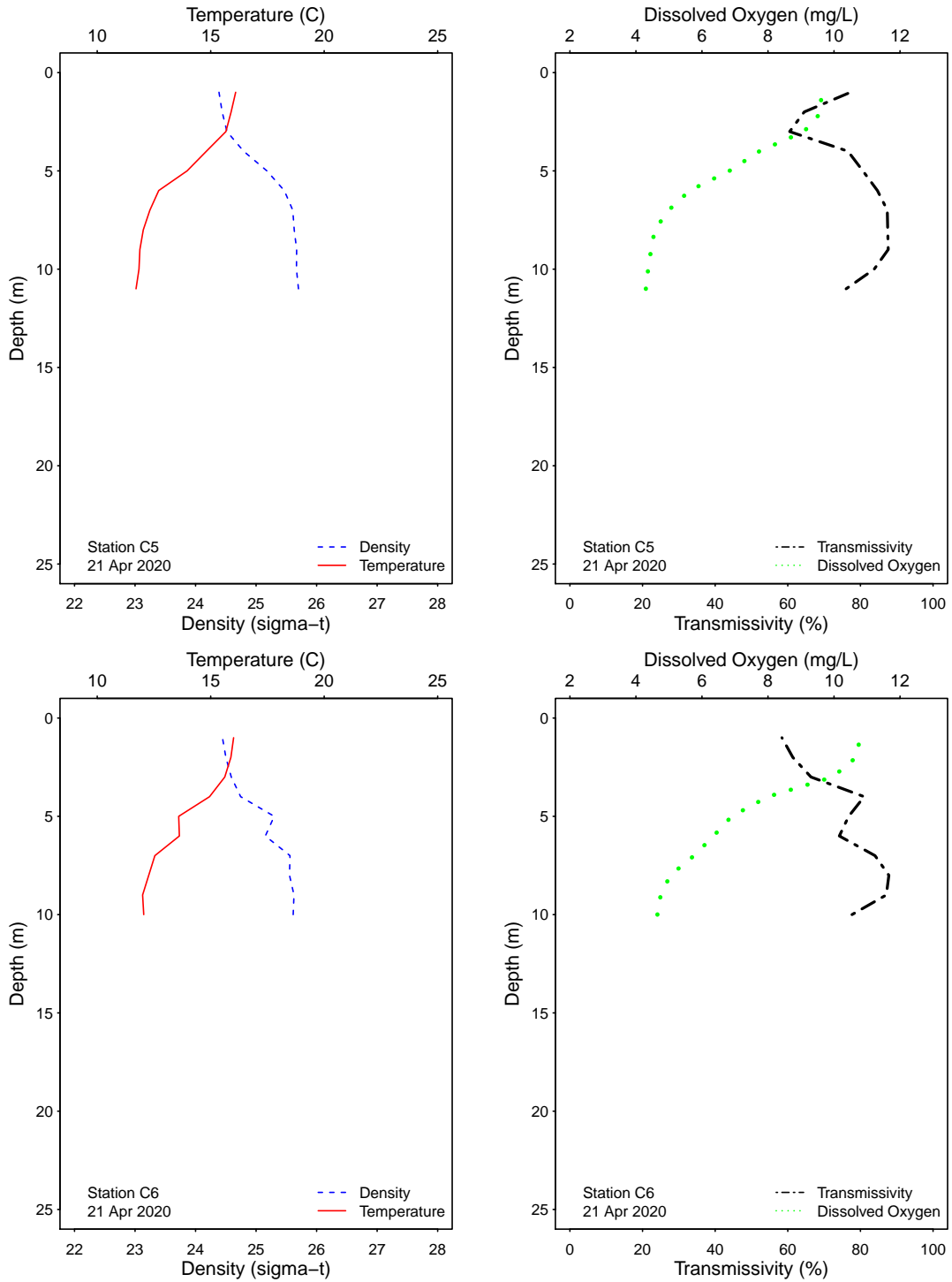


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

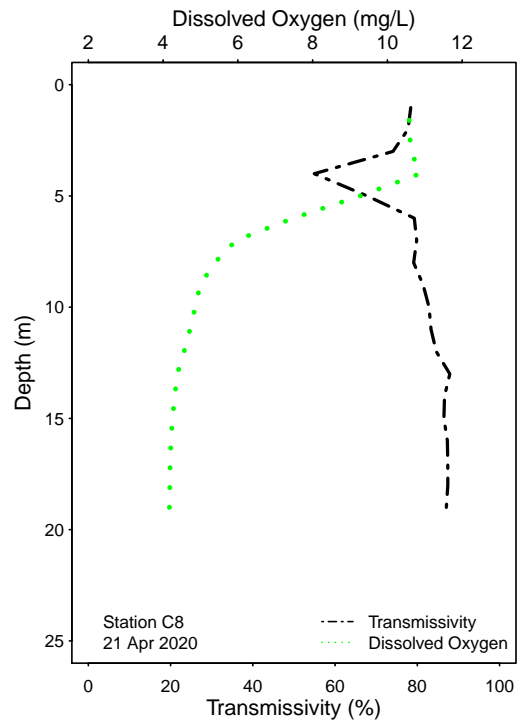
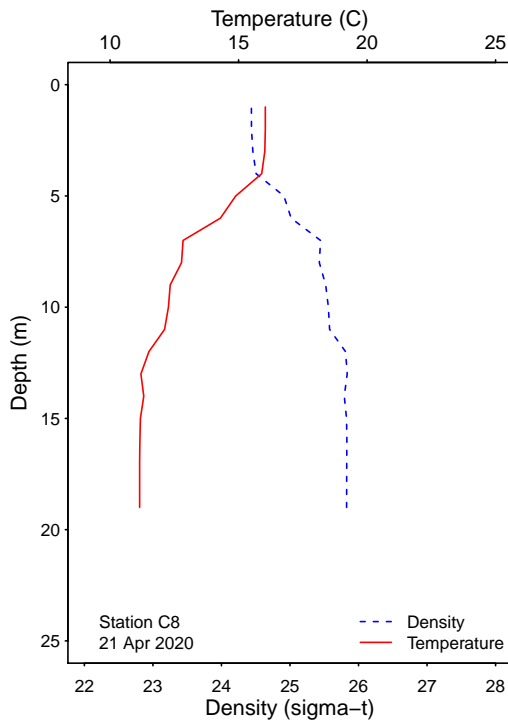
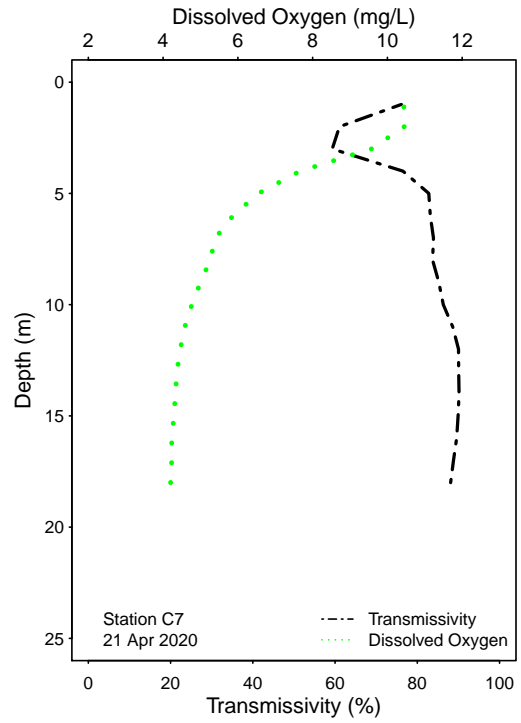
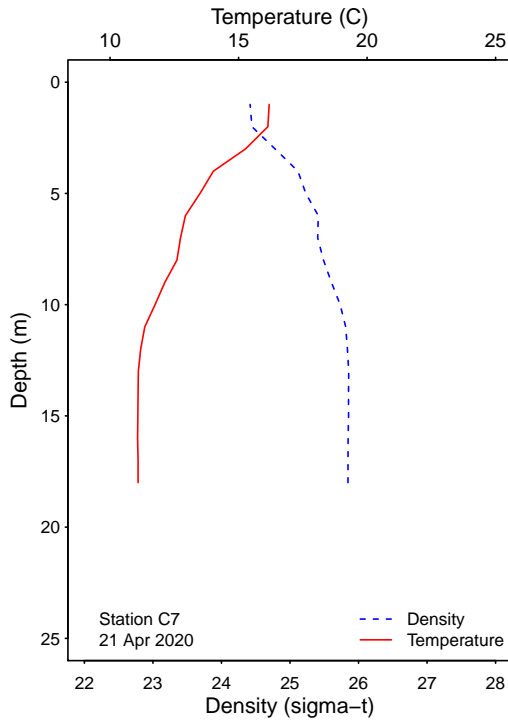


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

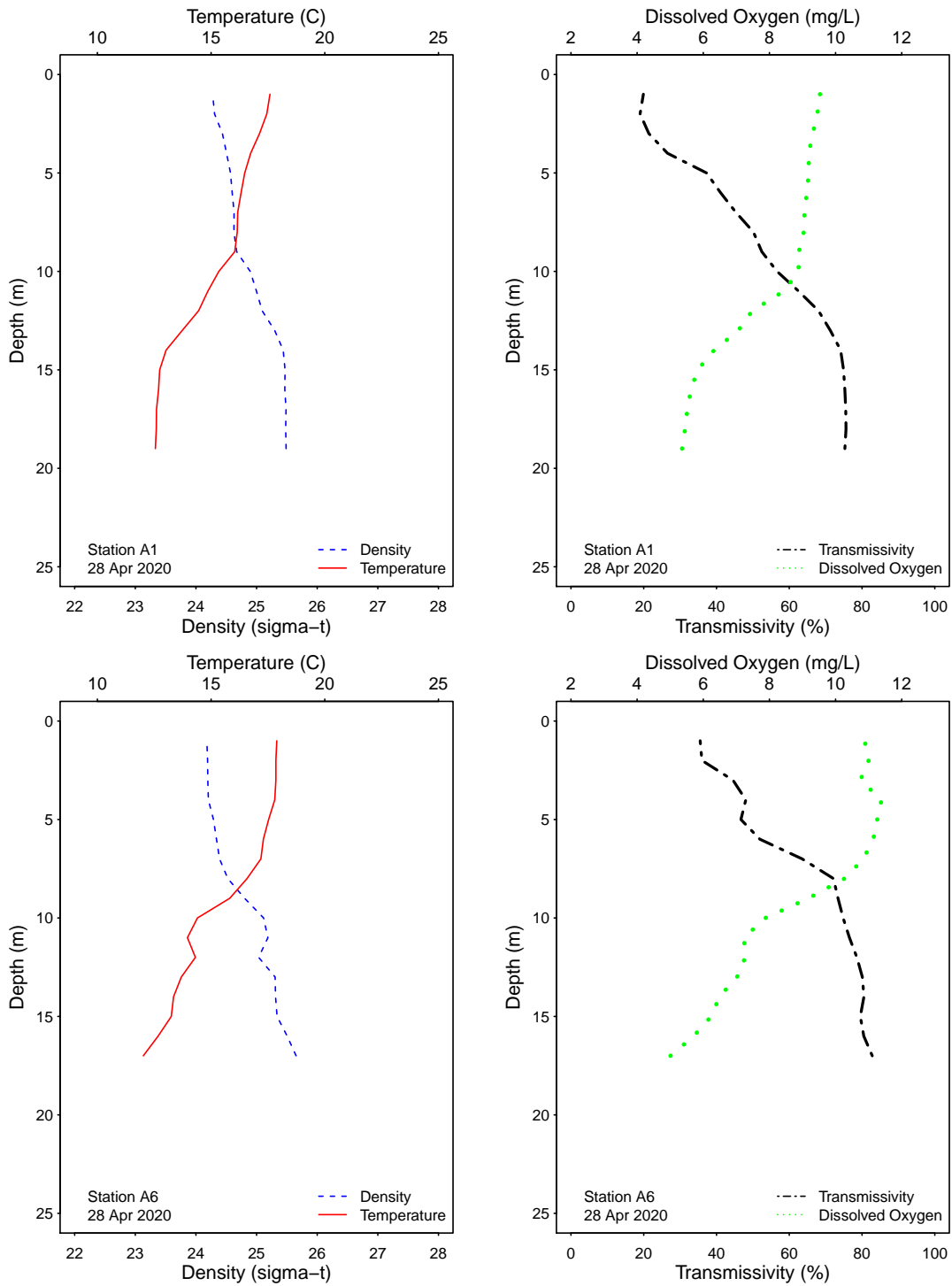


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

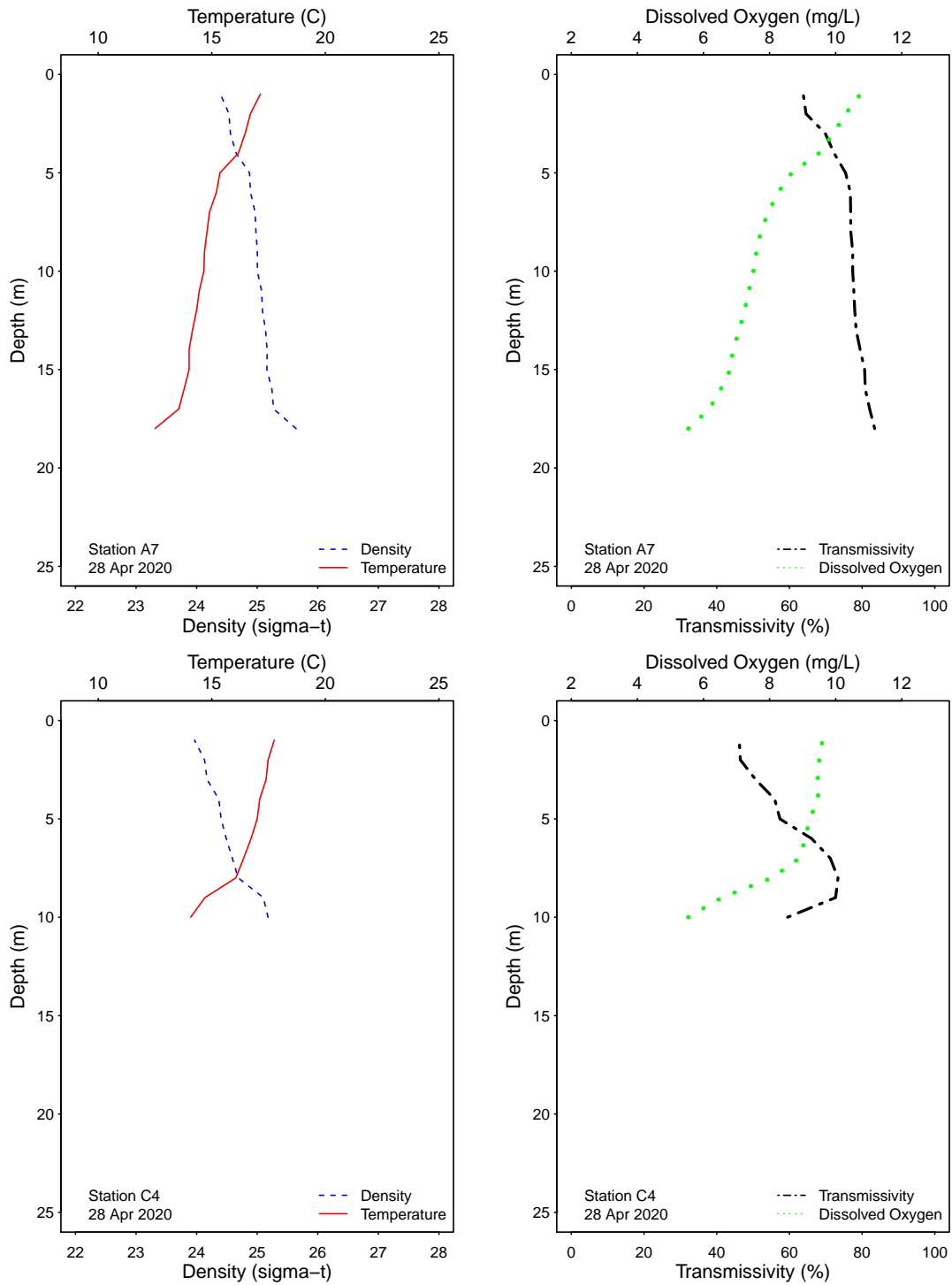


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

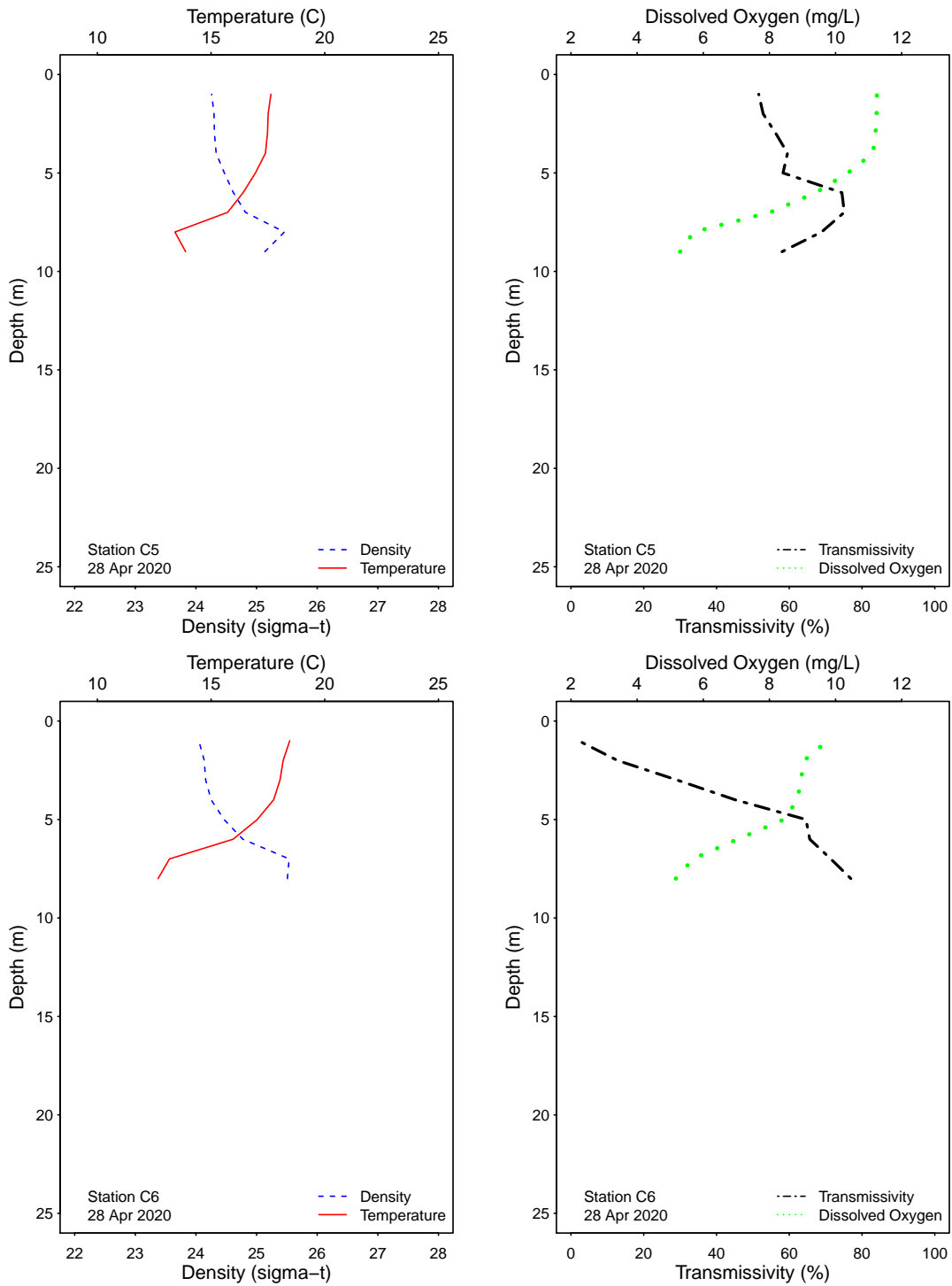


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

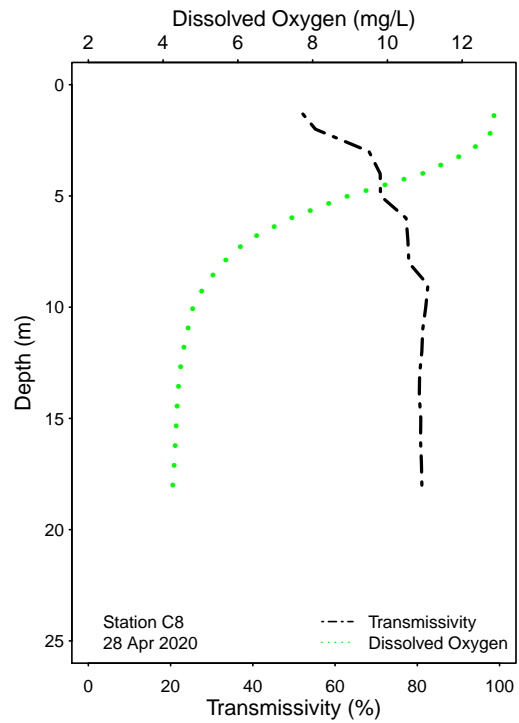
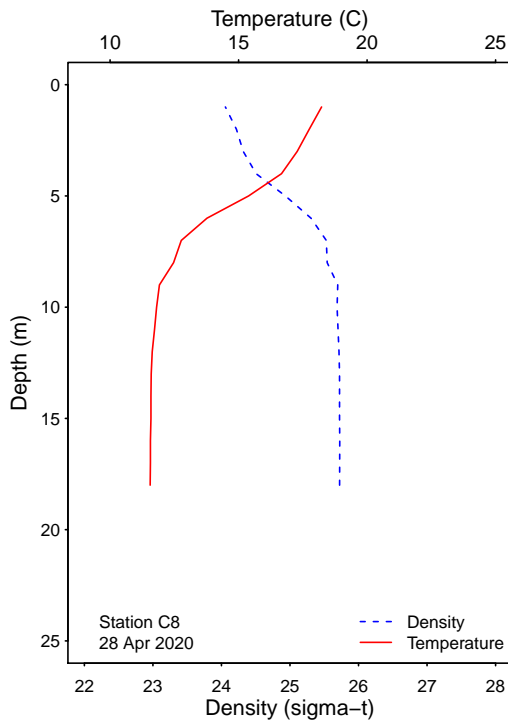
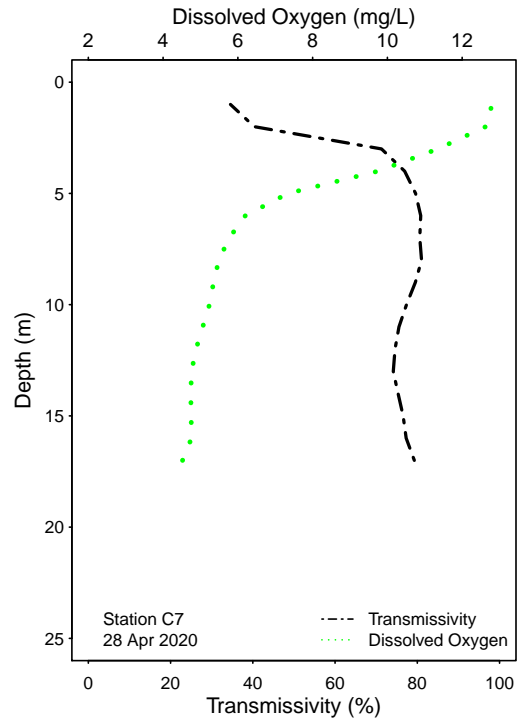
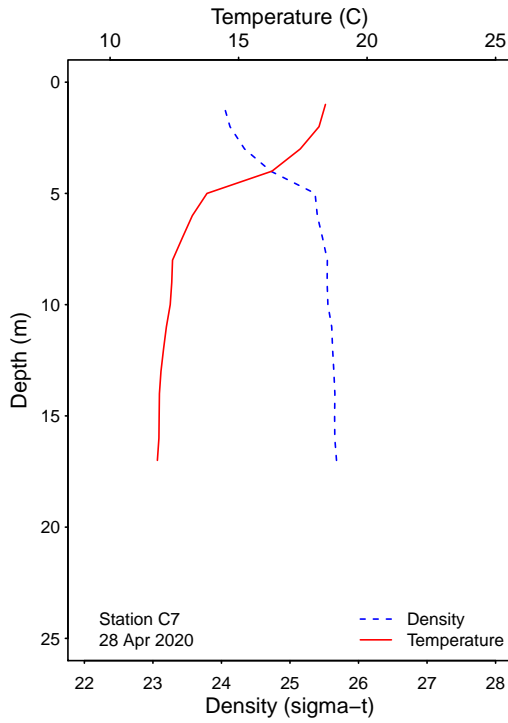


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

APPENDIX A

Quality Assurance

Table A.1

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
A7	01 Apr 2020	18	AE	LAB DUPLICATE	24e	2e	2e
A7	10 Apr 2020	18	AE	LAB DUPLICATE	8e	4e	<2
A7	14 Apr 2020	18	AE	LAB DUPLICATE	14e	4e	4e
A7	21 Apr 2020	18	AE	LAB DUPLICATE	74	12e	2e
A7	28 Apr 2020	18	AE	LAB DUPLICATE	<20	6e	4e
C7	01 Apr 2020	18	BS	LAB DUPLICATE	<2	<2	<2
C7	10 Apr 2020	18	BS	LAB DUPLICATE	2e	<2	<2
C7	14 Apr 2020	18	JF	LAB DUPLICATE	6e	<2	<2
C7	21 Apr 2020	18	BS	LAB DUPLICATE	38e	2e	<2
C7	28 Apr 2020	18	JF	LAB DUPLICATE	<2	<2	<2
C8	01 Apr 2020	12	BS	LAB DUPLICATE	6e	2e	<2
C8	10 Apr 2020	12	JF	LAB DUPLICATE	2e	2e	<2
C8	14 Apr 2020	12	JF	LAB DUPLICATE	<2	<2	<2
C8	21 Apr 2020	12	BS	LAB DUPLICATE	2e	<2	<2
C8	28 Apr 2020	12	JF	LAB DUPLICATE	<20	<2	<2
D12	01 Apr 2020		AE	FIELD DUPLICATE	<2	2e	<2
D12	01 Apr 2020		AE	LAB DUPLICATE	<2	<2	ns
D12	08 Apr 2020		JF	FIELD DUPLICATE	<20	<2	<2
D12	08 Apr 2020		JF	LAB DUPLICATE	2e	<2	2e
D12	15 Apr 2020		BS	FIELD DUPLICATE	2e	<2	<2
D12	15 Apr 2020		BS	LAB DUPLICATE	<2	<2	<2
D12	22 Apr 2020		JF	FIELD DUPLICATE	<20	<2	<2
D12	22 Apr 2020		JF	LAB DUPLICATE	<20	<2	2e
D12	29 Apr 2020		JF	FIELD DUPLICATE	<200	<2	2e
D12	29 Apr 2020		JF	LAB DUPLICATE	<20	2e	<2

ns = not sampled

ND = no data

