POINT LOMA OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

POINT LOMA WASTEWATER TREATMENT PLANT

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

OCTOBER 2018

Environmental Monitoring and Technical Services
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The City of
SAN DIEGO
Public Utilities Department
Environmental Monitoring & Technical Services Division

November 30, 2018

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the October 2018 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2017-0007, NPDES Permit No. CA0107409.

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

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

Sincerely,

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

TS/amw

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

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INTRODUCTION

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

MATERIALS AND METHODS

Shore Stations

Water quality conditions are required to be monitored at eight shoreline stations, including D4, D5, D7, D8, D9, D10, D11 and D12, which range from the tip of the Point Loma Peninsula to west of Mission Bay (see station locations map). However, station D8 was replaced by alternate station D8-A in June 2016 because of inaccessibility to the original site. Additionally, due to increasing instability in several cliffside areas off Point Loma, City staff have been unable to safely access and sample both D8-A and station D7 since February 7, 2018. During March 2018, the City was able to identify a new alternate location for stations D8/D8-A. This new station, designated D8-B, is located about 150 feet north of D8-A. During October 2018, access to station D7 once again became available, allowing this station to be sampled on October 31.

Seawater samples were collected from the surf zone at each station on a weekly basis. These samples were subsequently transported to the City's Marine Microbiology Laboratory and analyzed for the presence of several types of fecal indicator bacteria (FIBs), including total coliforms, fecal coliforms, and *Enterococcus*. Visual observations of water color and clarity, surf height, human or animal activity, and weather conditions were also recorded at the time of sample collection. Wind speed and direction were measured using a hand-held anemometer with a compass.

Kelp Bed Stations

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

Routine weekly monitoring at each of the kelp bed sites consisted primarily of collecting seawater samples at discrete depths to determine concentrations of indicator bacteria (i.e., total coliforms, fecal coliforms, and *Enterococcus*). Water column profiles of various physical/chemical parameters were also generated during each sampling event, and visual observations of weather and water conditions were recorded at each station.

Seawater samples at the kelp bed stations were collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile

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

Offshore Stations

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

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

Bacteriological Reporting and Quality Assurance

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

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

<u>30-day Geometric Mean</u>: 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 exactly the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2018 Quality Assurance Report, which will be completed in March 2019.

SUMMARY OF RESULTS

Shore Stations

- During October, all eight shore stations were in compliance with various California Ocean Plan (Ocean Plan) water-contact standards.
- Notable visual observations for October included a urine-like smell at the staircase near station D9.

Kelp Bed Stations

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled five times during the month (i.e. October 1, 8, 15, 22, 29).
- During October, all of the kelp bed stations were in compliance with various water-contact standards specified in the Ocean Plan.
- Water column temperatures ranged from 13.65 to 19.37°C during the month. The difference between surface and bottom waters ranged from 1.49 to 5.67°C, indicating that the water column was stratified at some of the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.23 to 2.52 µg/L during October, suggesting a lack of phytoplankton blooms during the month.
- There were no notable visual observations for October.

Offshore Stations

Quarterly sampling was not conducted during October at the offshore stations. The next quarterly sampling is scheduled for November 2018.

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TABLES AND FIGURES

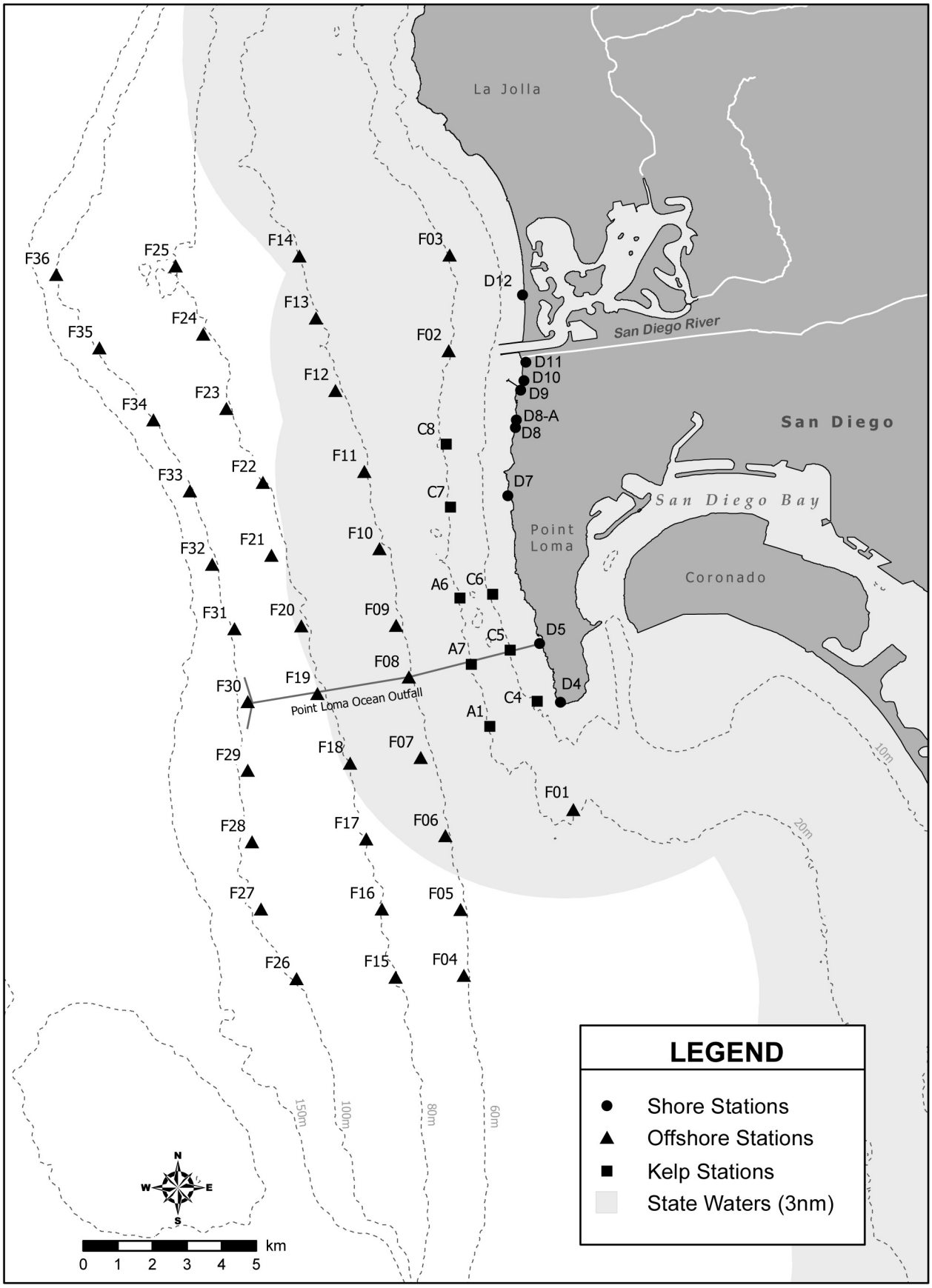

Figure 1.1 Station Map

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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 Oct 2018	36*	42*	ns	34*	42*	20*	24*	11*
02 Oct 2018	36*	42*	ns	34*	42*	20*	24*	11*
03 Oct 2018	32	36	ns	30	36	32	26	13
04 Oct 2018	32	36	ns	30	36	32	26	13
05 Oct 2018	36*	42*	ns	34*	42*	36*	28*	20*
06 Oct 2018	36*	42*	ns	34*	42*	36*	28*	20*
07 Oct 2018	36*	42*	ns	34*	42*	36*	28*	20*
08 Oct 2018	36*	42*	ns	34*	42*	36*	28*	20*
09 Oct 2018	36*	42*	ns	34*	42*	36*	28*	20*
10 Oct 2018	36	42	ns	30	42	50	42	23
11 Oct 2018	36	42	ns	30	42	50	42	23
12 Oct 2018	42*	42*	ns	34*	42*	63*	42*	24*
13 Oct 2018	42*	42*	ns	34*	42*	63*	42*	24*
14 Oct 2018	42*	42*	ns	34*	42*	63*	42*	24*
15 Oct 2018	42*	42*	ns	34*	42*	63*	42*	24*
16 Oct 2018	42*	42*	ns	34*	42*	63*	42*	24*
17 Oct 2018	36	36	ns	35	36	50	36	23
18 Oct 2018	36	36	ns	35	36	50	36	23
19 Oct 2018	42*	24*	ns	28*	42*	63*	42*	24*
20 Oct 2018	42*	24*	ns	28*	42*	63*	42*	24*
21 Oct 2018	42*	24*	ns	28*	42*	63*	42*	24*
22 Oct 2018	42*	24*	ns	28*	42*	63*	42*	24*
23 Oct 2018	42*	24*	ns	28*	42*	63*	42*	24*
24 Oct 2018	36	29	ns	42	36	80	36	23
25 Oct 2018	36	29	ns	42	36	80	36	23
26 Oct 2018	24*	31*	ns	42*	24*	112*	42*	24*
27 Oct 2018	24*	31*	ns	42*	24*	112*	42*	24*
28 Oct 2018	24*	31*	ns	42*	24*	112*	42*	24*
29 Oct 2018	24*	31*	ns	42*	24*	112*	42*	24*
30 Oct 2018	24*	31*	ns	42*	24*	112*	42*	24*
31 Oct 2018	23	29	20	36	24	80	36	30

* 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 Oct 2018	2*	4*	ns	5*	2*	2*	2*	2*
02 Oct 2018	2*	4*	ns	5*	2*	2*	2*	2*
03 Oct 2018	2	3	ns	5	2	3	2	3
04 Oct 2018	2	3	ns	5	2	3	2	3
05 Oct 2018	2*	4*	ns	4*	2*	3*	2*	3*
06 Oct 2018	2*	4*	ns	4*	2*	3*	2*	3*
07 Oct 2018	2*	4*	ns	4*	2*	3*	2*	3*
08 Oct 2018	2*	4*	ns	4*	2*	3*	2*	3*
09 Oct 2018	2*	4*	ns	4*	2*	3*	2*	3*
10 Oct 2018	2	4	ns	5	2	4	3	3
11 Oct 2018	2	4	ns	5	2	4	3	3
12 Oct 2018	3*	5*	ns	5*	2*	4*	3*	3*
13 Oct 2018	3*	5*	ns	5*	2*	4*	3*	3*
14 Oct 2018	3*	5*	ns	5*	2*	4*	3*	3*
15 Oct 2018	3*	5*	ns	5*	2*	4*	3*	3*
16 Oct 2018	3*	5*	ns	5*	2*	4*	3*	3*
17 Oct 2018	2	4	ns	4	2	4	3	3
18 Oct 2018	2	4	ns	4	2	4	3	3
19 Oct 2018	3*	5*	ns	5*	2*	5*	3*	3*
20 Oct 2018	3*	5*	ns	5*	2*	5*	3*	3*
21 Oct 2018	3*	5*	ns	5*	2*	5*	3*	3*
22 Oct 2018	3*	5*	ns	5*	2*	5*	3*	3*
23 Oct 2018	3*	5*	ns	5*	2*	5*	3*	3*
24 Oct 2018	2	6	ns	6	2	6	2	3
25 Oct 2018	2	6	ns	6	2	6	2	3
26 Oct 2018	3*	4*	ns	6*	2*	8*	3*	3*
27 Oct 2018	3*	4*	ns	6*	2*	8*	3*	3*
28 Oct 2018	3*	4*	ns	6*	2*	8*	3*	3*
29 Oct 2018	3*	4*	ns	6*	2*	8*	3*	3*
30 Oct 2018	3*	4*	ns	6*	2*	8*	3*	3*
31 Oct 2018	2	3	2	5	2	7	2	3

* Geometric mean calculated using n<5
ns = not sampled

Table 2.3

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
01 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
02 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
03 Oct 2018	2	3	ns	3	2	3	3	3
04 Oct 2018	2	3	ns	3	2	3	3	3
05 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
06 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
07 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
08 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
09 Oct 2018	2*	3*	ns	3*	2*	4*	3*	3*
10 Oct 2018	2	3	ns	2	2	6	4	4
11 Oct 2018	2	3	ns	2	2	6	4	4
12 Oct 2018	2*	3*	ns	2*	2*	7*	4*	4*
13 Oct 2018	2*	3*	ns	2*	2*	7*	4*	4*
14 Oct 2018	2*	3*	ns	2*	2*	7*	4*	4*
15 Oct 2018	2*	3*	ns	2*	2*	7*	4*	4*
16 Oct 2018	2*	3*	ns	2*	2*	7*	4*	4*
17 Oct 2018	2	4	ns	2	2	5	3	4
18 Oct 2018	2	4	ns	2	2	5	3	4
19 Oct 2018	2*	5*	ns	2*	2*	7*	4*	3*
20 Oct 2018	2*	5*	ns	2*	2*	7*	4*	3*
21 Oct 2018	2*	5*	ns	2*	2*	7*	4*	3*
22 Oct 2018	2*	5*	ns	2*	2*	7*	4*	3*
23 Oct 2018	2*	5*	ns	2*	2*	7*	4*	3*
24 Oct 2018	3	6	ns	3	2	11	5	3
25 Oct 2018	3	6	ns	3	2	11	5	3
26 Oct 2018	3*	6*	ns	4*	2*	11*	6*	3*
27 Oct 2018	3*	6*	ns	4*	2*	11*	6*	3*
28 Oct 2018	3*	6*	ns	4*	2*	11*	6*	3*
29 Oct 2018	3*	6*	ns	4*	2*	11*	6*	3*
30 Oct 2018	3*	6*	ns	4*	2*	11*	6*	3*
31 Oct 2018	3	5	2	4	2	8	6	3

* Geometric mean calculated using n<5
ns = not sampled

Table 2.4

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

Date	D4	D5	D7	D8-B	D9	D10	D11	D12
03 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
10 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
17 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
24 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
31 Oct 2018	IC	IC	IC	IC	ns	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
03 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
10 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
17 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
24 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
31 Oct 2018	IC	IC	IC	IC	ns	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
03 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
10 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
17 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
24 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
31 Oct 2018	IC	IC	IC	IC	ns	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
03 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
10 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
17 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
24 Oct 2018	IC	IC	ns	IC	IC	IC	IC	IC
31 Oct 2018	IC	IC	IC	IC	ns	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	03 Oct 2018	813	<20	<2	<2	0.10
D4	10 Oct 2018	1202	40e	6e	4e	0.15
D4	17 Oct 2018	812	<20	2e	<2	0.10
D4	24 Oct 2018	1051	<20	2e	4e	0.10
D4	31 Oct 2018	1036	<20	<2	2e	0.10
D5	03 Oct 2018	756	<20	<2	2e	0.10
D5	10 Oct 2018	1145	40e	6e	<2	0.15
D5	17 Oct 2018	800	<20	<2	14e	0.10
D5	24 Oct 2018	1029	60e	10e	18e	0.17
D5	31 Oct 2018	1021	<20	<2	<2	0.10
D7	03 Oct 2018	834	ns	ns	ns	ns
D7	10 Oct 2018	1127	ns	ns	ns	ns
D7	17 Oct 2018	832	ns	ns	ns	ns
D7	24 Oct 2018	1000	ns	ns	ns	ns
D7	31 Oct 2018	956	<20	<2	2e	0.10
D8-B	03 Oct 2018	846	20e	6e	2e	0.30
D8-B	10 Oct 2018	1118	<20	10e	2e	0.50
D8-B	17 Oct 2018	847	40e	<2	<2	0.05
D8-B	24 Oct 2018	948	<200	14e	26e	0.07
D8-B	31 Oct 2018	933	<20	<2	4e	0.10
D9	03 Oct 2018	858	<20	<2	<2	0.10
D9	10 Oct 2018	1103	40e	4e	2e	0.10
D9	17 Oct 2018	904	<20	<2	2e	0.10
D9	24 Oct 2018	927	20e	<2	2e	0.10
D9	31 Oct 2018	912	ns	ns	ns	ns
D10	03 Oct 2018	924	<200	4e	<2	0.02
D10	10 Oct 2018	1048	<200	14e	56	0.07
D10	17 Oct 2018	924	<20	6e	<2	0.30
D10	24 Oct 2018	916	<200	12e	74	0.06
D10	31 Oct 2018	902	<20	4e	<2	0.20
D11	03 Oct 2018	947	40e	2e	2e	0.05
D11	10 Oct 2018	1026	<200	6e	20e	0.03
D11	17 Oct 2018	944	<20	2e	<2	0.10
D11	24 Oct 2018	854	<20	<2	12e	0.10
D11	31 Oct 2018	840	20e	<2	6e	0.10

Station	Date	Time	Total	Fecal	Entero	F:T
D12	03 Oct 2018	1015	<20	4e	<2	0.20
D12	10 Oct 2018	957	40e	4e	10e	0.10
D12	17 Oct 2018	1009	<20	<2	<2	0.10
D12	24 Oct 2018	825	20e	2e	2e	0.10
D12	31 Oct 2018	806	80e	<2	4e	0.02

ns = not sampled
ND = no data

Comments

Station	Date	Depth	Parameter	Comments
D7	03 Oct 2018			Site inaccessible due to unsafe conditions
D7	10 Oct 2018			Site inaccessible due to unsafe conditions
D7	17 Oct 2018			Site inaccessible due to unsafe conditions
D7	24 Oct 2018			Site inaccessible due to unsafe conditions
D9	31 Oct 2018			Site inaccessible due to construction

Table 2.9

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

Station	Date	Parameter	Value
D4	03 Oct 2018	Arrive Time	813
D4	03 Oct 2018	Weather	Partly Cloudy
D4	03 Oct 2018	Wind Speed (kts)	2.7
D4	03 Oct 2018	Wind Dir	NE
D4	03 Oct 2018	Animal Life	4 Shorebirds; 2 Birds
D4	03 Oct 2018	Floatables	Dead Animals
D4	03 Oct 2018	Water Color	Green
D4	03 Oct 2018	Current Direction	NE
D4	03 Oct 2018	Water Temp (C)	18
D4	03 Oct 2018	Wave Height Low (ft)	1
D4	03 Oct 2018	High Tide (ft)	3.8
D4	03 Oct 2018	High Tide Time	613
D4	03 Oct 2018	Low Tide (ft)	2.7
D4	03 Oct 2018	Low Tide Time	1102
D4	03 Oct 2018	Comments	Kelp; Seagrass; Algae; Debris; 3 Boats; Water clear
D4	10 Oct 2018	Arrive Time	1202
D4	10 Oct 2018	Weather	Sunny
D4	10 Oct 2018	Wind Speed (kts)	5.2
D4	10 Oct 2018	Wind Dir	W
D4	10 Oct 2018	Animal Life	None
D4	10 Oct 2018	Floatables	None
D4	10 Oct 2018	Water Color	Green
D4	10 Oct 2018	Current Direction	N
D4	10 Oct 2018	Water Temp (C)	21
D4	10 Oct 2018	Wave Height Low (ft)	3
D4	10 Oct 2018	High Tide (ft)	6
D4	10 Oct 2018	High Tide Time	1015
D4	10 Oct 2018	Low Tide (ft)	-0.1
D4	10 Oct 2018	Low Tide Time	1652
D4	10 Oct 2018	Comments	Kelp; Seagrass; Water clear
D4	17 Oct 2018	Arrive Time	812
D4	17 Oct 2018	Weather	Sunny
D4	17 Oct 2018	Wind Speed (kts)	2.7
D4	17 Oct 2018	Wind Dir	S
D4	17 Oct 2018	Animal Life	None
D4	17 Oct 2018	Floatables	None
D4	17 Oct 2018	Water Color	Green
D4	17 Oct 2018	Current Direction	N
D4	17 Oct 2018	Water Temp (C)	16
D4	17 Oct 2018	Wave Height Low (ft)	2
D4	17 Oct 2018	High Tide (ft)	3.9
D4	17 Oct 2018	High Tide Time	636
D4	17 Oct 2018	Low Tide (ft)	3
D4	17 Oct 2018	Low Tide Time	1132
D4	17 Oct 2018	Comments	Kelp; Seagrass; Water clear
D4	24 Oct 2018	Arrive Time	1051
D4	24 Oct 2018	Weather	Partly Cloudy
D4	24 Oct 2018	Wind Speed (kts)	1.9

Station	Date	Parameter	Value
D4	24 Oct 2018	Wind Dir	N
D4	24 Oct 2018	Animal Life	2 Shorebirds; 12 Cormorants
D4	24 Oct 2018	Floatables	None
D4	24 Oct 2018	Water Color	Green
D4	24 Oct 2018	Current Direction	N
D4	24 Oct 2018	Water Temp (C)	18
D4	24 Oct 2018	Wave Height Low (ft)	4
D4	24 Oct 2018	High Tide (ft)	5.8
D4	24 Oct 2018	High Tide Time	913
D4	24 Oct 2018	Low Tide (ft)	0
D4	24 Oct 2018	Low Tide Time	1549
D4	24 Oct 2018	Comments	Kelp; Seagrass; Debris; 2 Surfers; 3 Boats; Water clear
D4	31 Oct 2018	Arrive Time	1036
D4	31 Oct 2018	Weather	Sunny
D4	31 Oct 2018	Wind Speed (kts)	0.9
D4	31 Oct 2018	Wind Dir	N
D4	31 Oct 2018	Animal Life	None
D4	31 Oct 2018	Floatables	None
D4	31 Oct 2018	Water Color	Green
D4	31 Oct 2018	Current Direction	N
D4	31 Oct 2018	Water Temp (C)	20
D4	31 Oct 2018	Wave Height Low (ft)	3
D4	31 Oct 2018	High Tide (ft)	4.7
D4	31 Oct 2018	High Tide Time	1507
D4	31 Oct 2018	Low Tide (ft)	3
D4	31 Oct 2018	Low Tide Time	924
D4	31 Oct 2018	Comments	Kelp; Algae; 3 Persons; 3 Surfers; Water clear
D5	03 Oct 2018	Arrive Time	756
D5	03 Oct 2018	Weather	Partly Cloudy
D5	03 Oct 2018	Wind Speed (kts)	1.3
D5	03 Oct 2018	Wind Dir	E
D5	03 Oct 2018	Animal Life	2 Shorebirds; 3 Cormorants; 1 Pelican
D5	03 Oct 2018	Floatables	None
D5	03 Oct 2018	Water Color	Green
D5	03 Oct 2018	Current Direction	E
D5	03 Oct 2018	Water Temp (C)	19
D5	03 Oct 2018	Wave Height Low (ft)	1
D5	03 Oct 2018	High Tide (ft)	3.8
D5	03 Oct 2018	High Tide Time	613
D5	03 Oct 2018	Low Tide (ft)	2.7
D5	03 Oct 2018	Low Tide Time	1102
D5	03 Oct 2018	Comments	Algae; 3 Boats; Water clear
D5	10 Oct 2018	Arrive Time	1145
D5	10 Oct 2018	Weather	Sunny
D5	10 Oct 2018	Wind Speed (kts)	2
D5	10 Oct 2018	Wind Dir	W
D5	10 Oct 2018	Animal Life	None
D5	10 Oct 2018	Floatables	None
D5	10 Oct 2018	Water Color	Brown
D5	10 Oct 2018	Current Direction	N
D5	10 Oct 2018	Water Temp (C)	20
D5	10 Oct 2018	Wave Height Low (ft)	4

Station	Date	Parameter	Value
D5	10 Oct 2018	High Tide (ft)	6
D5	10 Oct 2018	High Tide Time	1015
D5	10 Oct 2018	Low Tide (ft)	-0.1
D5	10 Oct 2018	Low Tide Time	1652
D5	10 Oct 2018	Comments	Kelp; Seagrass; Water clear
D5	17 Oct 2018	Arrive Time	800
D5	17 Oct 2018	Weather	Sunny
D5	17 Oct 2018	Wind Speed (kts)	2.7
D5	17 Oct 2018	Wind Dir	N
D5	17 Oct 2018	Animal Life	None
D5	17 Oct 2018	Floatables	None
D5	17 Oct 2018	Water Color	Green
D5	17 Oct 2018	Current Direction	N
D5	17 Oct 2018	Water Temp (C)	17
D5	17 Oct 2018	Wave Height Low (ft)	2
D5	17 Oct 2018	High Tide (ft)	3.9
D5	17 Oct 2018	High Tide Time	636
D5	17 Oct 2018	Low Tide (ft)	3
D5	17 Oct 2018	Low Tide Time	1132
D5	17 Oct 2018	Comments	Kelp; Seagrass; Algae; Water clear
D5	24 Oct 2018	Arrive Time	1029
D5	24 Oct 2018	Weather	Partly Cloudy
D5	24 Oct 2018	Wind Speed (kts)	0
D5	24 Oct 2018	Wind Dir	
D5	24 Oct 2018	Animal Life	14 Shorebirds; 5 Pelicans
D5	24 Oct 2018	Floatables	None
D5	24 Oct 2018	Water Color	Green
D5	24 Oct 2018	Current Direction	
D5	24 Oct 2018	Water Temp (C)	18
D5	24 Oct 2018	Wave Height Low (ft)	4
D5	24 Oct 2018	High Tide (ft)	5.8
D5	24 Oct 2018	High Tide Time	913
D5	24 Oct 2018	Low Tide (ft)	0
D5	24 Oct 2018	Low Tide Time	1549
D5	24 Oct 2018	Comments	Kelp; 6 Boats; Water clear
D5	31 Oct 2018	Arrive Time	1021
D5	31 Oct 2018	Weather	Sunny
D5	31 Oct 2018	Wind Speed (kts)	4.6
D5	31 Oct 2018	Wind Dir	N
D5	31 Oct 2018	Animal Life	None
D5	31 Oct 2018	Floatables	None
D5	31 Oct 2018	Water Color	Green
D5	31 Oct 2018	Current Direction	N
D5	31 Oct 2018	Water Temp (C)	17
D5	31 Oct 2018	Wave Height Low (ft)	3
D5	31 Oct 2018	High Tide (ft)	4.7
D5	31 Oct 2018	High Tide Time	1507
D5	31 Oct 2018	Low Tide (ft)	3
D5	31 Oct 2018	Low Tide Time	924
D5	31 Oct 2018	Comments	Seagrass; Algae; Water clear
D7	03 Oct 2018	Arrive Time	834

Station	Date	Parameter	Value
D7	03 Oct 2018	Weather	Partly Cloudy
D7	03 Oct 2018	Wind Speed (kts)	1.1
D7	03 Oct 2018	Wind Dir	N
D7	03 Oct 2018	Animal Life	15 Birds
D7	03 Oct 2018	Floatables	None
D7	03 Oct 2018	Water Color	Green
D7	03 Oct 2018	Current Direction	N
D7	03 Oct 2018	Water Temp (C)	
D7	03 Oct 2018	Wave Height Low (ft)	2
D7	03 Oct 2018	High Tide (ft)	3.8
D7	03 Oct 2018	High Tide Time	613
D7	03 Oct 2018	Low Tide (ft)	2.7
D7	03 Oct 2018	Low Tide Time	1102
D7	03 Oct 2018	Comments	Kelp; Seagrass; Algae; 2 Surfers; 2 Boats; Water clear; Site inaccessible due to unsafe conditions
D7	10 Oct 2018	Arrive Time	1127
D7	10 Oct 2018	Weather	Sunny
D7	10 Oct 2018	Wind Speed (kts)	3.7
D7	10 Oct 2018	Wind Dir	W
D7	10 Oct 2018	Animal Life	None
D7	10 Oct 2018	Floatables	None
D7	10 Oct 2018	Water Color	Green
D7	10 Oct 2018	Current Direction	W
D7	10 Oct 2018	Water Temp (C)	
D7	10 Oct 2018	Wave Height Low (ft)	4
D7	10 Oct 2018	High Tide (ft)	6
D7	10 Oct 2018	High Tide Time	1015
D7	10 Oct 2018	Low Tide (ft)	-0.1
D7	10 Oct 2018	Low Tide Time	1652
D7	10 Oct 2018	Comments	Kelp; Seagrass; Water clear; Site inaccessible due to unsafe conditions
D7	17 Oct 2018	Arrive Time	832
D7	17 Oct 2018	Weather	Sunny
D7	17 Oct 2018	Wind Speed (kts)	7.9
D7	17 Oct 2018	Wind Dir	S
D7	17 Oct 2018	Animal Life	None
D7	17 Oct 2018	Floatables	None
D7	17 Oct 2018	Water Color	Colorless
D7	17 Oct 2018	Current Direction	N
D7	17 Oct 2018	Water Temp (C)	
D7	17 Oct 2018	Wave Height Low (ft)	3
D7	17 Oct 2018	High Tide (ft)	3.9
D7	17 Oct 2018	High Tide Time	636
D7	17 Oct 2018	Low Tide (ft)	3
D7	17 Oct 2018	Low Tide Time	1132
D7	17 Oct 2018	Comments	3 Surfers; Water clear; Site inaccessible due to unsafe conditions
D7	24 Oct 2018	Arrive Time	1000
D7	24 Oct 2018	Weather	Hazy
D7	24 Oct 2018	Wind Speed (kts)	1.3
D7	24 Oct 2018	Wind Dir	N
D7	24 Oct 2018	Animal Life	None
D7	24 Oct 2018	Floatables	None

Station	Date	Parameter	Value
D7	24 Oct 2018	Water Color	Green
D7	24 Oct 2018	Current Direction	N
D7	24 Oct 2018	Water Temp (C)	
D7	24 Oct 2018	Wave Height Low (ft)	4
D7	24 Oct 2018	High Tide (ft)	5.8
D7	24 Oct 2018	High Tide Time	913
D7	24 Oct 2018	Low Tide (ft)	0
D7	24 Oct 2018	Low Tide Time	1549
D7	24 Oct 2018	Comments	5 Surfers; Water clear; Site inaccessible due to unsafe conditions
D7	31 Oct 2018	Arrive Time	956
D7	31 Oct 2018	Weather	Sunny
D7	31 Oct 2018	Wind Speed (kts)	4.5
D7	31 Oct 2018	Wind Dir	N
D7	31 Oct 2018	Animal Life	None
D7	31 Oct 2018	Floatables	None
D7	31 Oct 2018	Water Color	Green
D7	31 Oct 2018	Current Direction	N
D7	31 Oct 2018	Water Temp (C)	16
D7	31 Oct 2018	Wave Height Low (ft)	2
D7	31 Oct 2018	High Tide (ft)	3.8
D7	31 Oct 2018	High Tide Time	445
D7	31 Oct 2018	Low Tide (ft)	3
D7	31 Oct 2018	Low Tide Time	924
D7	31 Oct 2018	Comments	Kelp; Seagrass; 3 Persons; 5 Surfers; Water clear
D8-B	03 Oct 2018	Arrive Time	846
D8-B	03 Oct 2018	Weather	Partly Cloudy
D8-B	03 Oct 2018	Wind Speed (kts)	2.9
D8-B	03 Oct 2018	Wind Dir	SW
D8-B	03 Oct 2018	Animal Life	3 Shorebirds; 1 Dog
D8-B	03 Oct 2018	Floatables	None
D8-B	03 Oct 2018	Water Color	Green
D8-B	03 Oct 2018	Current Direction	SW
D8-B	03 Oct 2018	Water Temp (C)	19
D8-B	03 Oct 2018	Wave Height Low (ft)	2
D8-B	03 Oct 2018	High Tide (ft)	3.8
D8-B	03 Oct 2018	High Tide Time	613
D8-B	03 Oct 2018	Low Tide (ft)	2.7
D8-B	03 Oct 2018	Low Tide Time	1102
D8-B	03 Oct 2018	Comments	Kelp; Seagrass; 1 Person; 3 Boats; Water clear
D8-B	10 Oct 2018	Arrive Time	1118
D8-B	10 Oct 2018	Weather	Sunny
D8-B	10 Oct 2018	Wind Speed (kts)	4.6
D8-B	10 Oct 2018	Wind Dir	W
D8-B	10 Oct 2018	Animal Life	None
D8-B	10 Oct 2018	Floatables	None
D8-B	10 Oct 2018	Water Color	Green
D8-B	10 Oct 2018	Current Direction	N
D8-B	10 Oct 2018	Water Temp (C)	20
D8-B	10 Oct 2018	Wave Height Low (ft)	4
D8-B	10 Oct 2018	High Tide (ft)	6
D8-B	10 Oct 2018	High Tide Time	1015
D8-B	10 Oct 2018	Low Tide (ft)	-0.1

Station	Date	Parameter	Value
D8-B	10 Oct 2018	Low Tide Time	1652
D8-B	10 Oct 2018	Comments	Kelp; Seagrass; Water clear
D8-B	17 Oct 2018	Arrive Time	847
D8-B	17 Oct 2018	Weather	Sunny
D8-B	17 Oct 2018	Wind Speed (kts)	4.2
D8-B	17 Oct 2018	Wind Dir	SE
D8-B	17 Oct 2018	Animal Life	None
D8-B	17 Oct 2018	Floatables	None
D8-B	17 Oct 2018	Water Color	Green
D8-B	17 Oct 2018	Current Direction	N
D8-B	17 Oct 2018	Water Temp (C)	16
D8-B	17 Oct 2018	Wave Height Low (ft)	3
D8-B	17 Oct 2018	High Tide (ft)	3.9
D8-B	17 Oct 2018	High Tide Time	636
D8-B	17 Oct 2018	Low Tide (ft)	3
D8-B	17 Oct 2018	Low Tide Time	1132
D8-B	17 Oct 2018	Comments	Algae; Water clear
D8-B	24 Oct 2018	Arrive Time	948
D8-B	24 Oct 2018	Weather	Foggy
D8-B	24 Oct 2018	Wind Speed (kts)	1.3
D8-B	24 Oct 2018	Wind Dir	NE
D8-B	24 Oct 2018	Animal Life	1 Bird
D8-B	24 Oct 2018	Floatables	None
D8-B	24 Oct 2018	Water Color	Green
D8-B	24 Oct 2018	Current Direction	NE
D8-B	24 Oct 2018	Water Temp (C)	18
D8-B	24 Oct 2018	Wave Height Low (ft)	3
D8-B	24 Oct 2018	High Tide (ft)	5.8
D8-B	24 Oct 2018	High Tide Time	913
D8-B	24 Oct 2018	Low Tide (ft)	0
D8-B	24 Oct 2018	Low Tide Time	1549
D8-B	24 Oct 2018	Comments	Kelp; Water clear
D8-B	31 Oct 2018	Arrive Time	933
D8-B	31 Oct 2018	Weather	Sunny
D8-B	31 Oct 2018	Wind Speed (kts)	1.3
D8-B	31 Oct 2018	Wind Dir	N
D8-B	31 Oct 2018	Animal Life	None
D8-B	31 Oct 2018	Floatables	None
D8-B	31 Oct 2018	Water Color	Green
D8-B	31 Oct 2018	Current Direction	N
D8-B	31 Oct 2018	Water Temp (C)	16
D8-B	31 Oct 2018	Wave Height Low (ft)	4
D8-B	31 Oct 2018	High Tide (ft)	3.8
D8-B	31 Oct 2018	High Tide Time	445
D8-B	31 Oct 2018	Low Tide (ft)	3
D8-B	31 Oct 2018	Low Tide Time	924
D8-B	31 Oct 2018	Comments	Kelp; Seagrass; Algae; 1 Person; 4 Surfers; Water clear
D9	03 Oct 2018	Arrive Time	858
D9	03 Oct 2018	Weather	Partly Cloudy
D9	03 Oct 2018	Wind Speed (kts)	2.7
D9	03 Oct 2018	Wind Dir	N

Station	Date	Parameter	Value
D9	03 Oct 2018	Animal Life	None
D9	03 Oct 2018	Floatables	None
D9	03 Oct 2018	Water Color	Green
D9	03 Oct 2018	Current Direction	N
D9	03 Oct 2018	Water Temp (C)	20
D9	03 Oct 2018	Wave Height Low (ft)	1
D9	03 Oct 2018	High Tide (ft)	3.8
D9	03 Oct 2018	High Tide Time	613
D9	03 Oct 2018	Low Tide (ft)	2.7
D9	03 Oct 2018	Low Tide Time	1102
D9	03 Oct 2018	Comments	Algae; 3 Persons; 1 Surfer; 1 Boat; Water clear; Urine-like smells at staircase
D9	10 Oct 2018	Arrive Time	1103
D9	10 Oct 2018	Weather	Sunny
D9	10 Oct 2018	Wind Speed (kts)	4.1
D9	10 Oct 2018	Wind Dir	W
D9	10 Oct 2018	Animal Life	None
D9	10 Oct 2018	Floatables	None
D9	10 Oct 2018	Water Color	Green
D9	10 Oct 2018	Current Direction	N
D9	10 Oct 2018	Water Temp (C)	21
D9	10 Oct 2018	Wave Height Low (ft)	3
D9	10 Oct 2018	High Tide (ft)	6
D9	10 Oct 2018	High Tide Time	1015
D9	10 Oct 2018	Low Tide (ft)	-0.1
D9	10 Oct 2018	Low Tide Time	1652
D9	10 Oct 2018	Comments	Kelp; Seagrass; Water clear
D9	17 Oct 2018	Arrive Time	904
D9	17 Oct 2018	Weather	Sunny
D9	17 Oct 2018	Wind Speed (kts)	0.1
D9	17 Oct 2018	Wind Dir	N
D9	17 Oct 2018	Animal Life	None
D9	17 Oct 2018	Floatables	None
D9	17 Oct 2018	Water Color	Green
D9	17 Oct 2018	Current Direction	N
D9	17 Oct 2018	Water Temp (C)	18
D9	17 Oct 2018	Wave Height Low (ft)	2
D9	17 Oct 2018	High Tide (ft)	3.9
D9	17 Oct 2018	High Tide Time	636
D9	17 Oct 2018	Low Tide (ft)	3
D9	17 Oct 2018	Low Tide Time	1132
D9	17 Oct 2018	Comments	Kelp; Algae; 2 Persons; 2 Surfers; Water clear
D9	24 Oct 2018	Arrive Time	927
D9	24 Oct 2018	Weather	Foggy
D9	24 Oct 2018	Wind Speed (kts)	2.9
D9	24 Oct 2018	Wind Dir	NE
D9	24 Oct 2018	Animal Life	1 Dog
D9	24 Oct 2018	Floatables	None
D9	24 Oct 2018	Water Color	Green
D9	24 Oct 2018	Current Direction	NE
D9	24 Oct 2018	Water Temp (C)	18
D9	24 Oct 2018	Wave Height Low (ft)	3

Station	Date	Parameter	Value
D9	24 Oct 2018	High Tide (ft)	5.8
D9	24 Oct 2018	High Tide Time	913
D9	24 Oct 2018	Low Tide (ft)	0.8
D9	24 Oct 2018	Low Tide Time	309
D9	24 Oct 2018	Comments	1 Person; Water clear; Construction has started at bottom of stair-case; Access may become limited next week
D9	31 Oct 2018	Arrive Time	912
D9	31 Oct 2018	Weather	Sunny
D9	31 Oct 2018	Wind Speed (kts)	1
D9	31 Oct 2018	Wind Dir	N
D9	31 Oct 2018	Animal Life	None
D9	31 Oct 2018	Floatables	None
D9	31 Oct 2018	Water Color	Green
D9	31 Oct 2018	Current Direction	N
D9	31 Oct 2018	Water Temp (C)	0
D9	31 Oct 2018	Wave Height Low (ft)	1
D9	31 Oct 2018	High Tide (ft)	3.8
D9	31 Oct 2018	High Tide Time	445
D9	31 Oct 2018	Low Tide (ft)	3
D9	31 Oct 2018	Low Tide Time	924
D9	31 Oct 2018	Comments	Water clear; Site inaccessible do to construction
D10	03 Oct 2018	Arrive Time	924
D10	03 Oct 2018	Weather	Partly Cloudy
D10	03 Oct 2018	Wind Speed (kts)	3.6
D10	03 Oct 2018	Wind Dir	N
D10	03 Oct 2018	Animal Life	4 Birds
D10	03 Oct 2018	Floatables	None
D10	03 Oct 2018	Water Color	Green
D10	03 Oct 2018	Current Direction	N
D10	03 Oct 2018	Water Temp (C)	21
D10	03 Oct 2018	Wave Height Low (ft)	3
D10	03 Oct 2018	High Tide (ft)	3.8
D10	03 Oct 2018	High Tide Time	613
D10	03 Oct 2018	Low Tide (ft)	2.7
D10	03 Oct 2018	Low Tide Time	1102
D10	03 Oct 2018	Comments	Kelp; Seagrass; 1 Jogger; 21 Persons; 30 Surfers; Water clear
D10	10 Oct 2018	Arrive Time	1048
D10	10 Oct 2018	Weather	Sunny
D10	10 Oct 2018	Wind Speed (kts)	4.2
D10	10 Oct 2018	Wind Dir	W
D10	10 Oct 2018	Animal Life	None
D10	10 Oct 2018	Floatables	None
D10	10 Oct 2018	Water Color	Green
D10	10 Oct 2018	Current Direction	N
D10	10 Oct 2018	Water Temp (C)	20
D10	10 Oct 2018	Wave Height Low (ft)	5
D10	10 Oct 2018	High Tide (ft)	6
D10	10 Oct 2018	High Tide Time	1015
D10	10 Oct 2018	Low Tide (ft)	-0.1
D10	10 Oct 2018	Low Tide Time	1652
D10	10 Oct 2018	Comments	Kelp; Seagrass; 9 Persons; 12 Surfers; Water clear

Station	Date	Parameter	Value
D10	17 Oct 2018	Arrive Time	924
D10	17 Oct 2018	Weather	Sunny
D10	17 Oct 2018	Wind Speed (kts)	2.7
D10	17 Oct 2018	Wind Dir	SE
D10	17 Oct 2018	Animal Life	None
D10	17 Oct 2018	Floatables	None
D10	17 Oct 2018	Water Color	Green
D10	17 Oct 2018	Current Direction	N
D10	17 Oct 2018	Water Temp (C)	18
D10	17 Oct 2018	Wave Height Low (ft)	3
D10	17 Oct 2018	High Tide (ft)	3.9
D10	17 Oct 2018	High Tide Time	636
D10	17 Oct 2018	Low Tide (ft)	3
D10	17 Oct 2018	Low Tide Time	1132
D10	17 Oct 2018	Comments	Seagrass; 1 Jogger; 6 Persons; 13 Surfers; Water clear
D10	24 Oct 2018	Arrive Time	916
D10	24 Oct 2018	Weather	Foggy
D10	24 Oct 2018	Wind Speed (kts)	1.1
D10	24 Oct 2018	Wind Dir	S
D10	24 Oct 2018	Animal Life	60 Shorebirds
D10	24 Oct 2018	Floatables	None
D10	24 Oct 2018	Water Color	Green
D10	24 Oct 2018	Current Direction	S
D10	24 Oct 2018	Water Temp (C)	17
D10	24 Oct 2018	Wave Height Low (ft)	3
D10	24 Oct 2018	High Tide (ft)	5.8
D10	24 Oct 2018	High Tide Time	913
D10	24 Oct 2018	Low Tide (ft)	0.8
D10	24 Oct 2018	Low Tide Time	309
D10	24 Oct 2018	Comments	Kelp; Seagrass; 7 Persons; 20 Surfers; 2 Boats; Water clear
D10	31 Oct 2018	Arrive Time	902
D10	31 Oct 2018	Weather	Sunny
D10	31 Oct 2018	Wind Speed (kts)	2.3
D10	31 Oct 2018	Wind Dir	E
D10	31 Oct 2018	Animal Life	None
D10	31 Oct 2018	Floatables	None
D10	31 Oct 2018	Water Color	Green
D10	31 Oct 2018	Current Direction	N
D10	31 Oct 2018	Water Temp (C)	16
D10	31 Oct 2018	Wave Height Low (ft)	4
D10	31 Oct 2018	High Tide (ft)	3.8
D10	31 Oct 2018	High Tide Time	445
D10	31 Oct 2018	Low Tide (ft)	3
D10	31 Oct 2018	Low Tide Time	924
D10	31 Oct 2018	Comments	Kelp; Seagrass; 8 Persons; 7 Surfers; Water clear
D11	03 Oct 2018	Arrive Time	947
D11	03 Oct 2018	Weather	Partly Cloudy
D11	03 Oct 2018	Wind Speed (kts)	6
D11	03 Oct 2018	Wind Dir	N
D11	03 Oct 2018	Animal Life	2 Birds
D11	03 Oct 2018	Floatables	None
D11	03 Oct 2018	Water Color	Green

Station	Date	Parameter	Value
D11	03 Oct 2018	Current Direction	N
D11	03 Oct 2018	Water Temp (C)	20
D11	03 Oct 2018	Wave Height Low (ft)	3
D11	03 Oct 2018	High Tide (ft)	3.8
D11	03 Oct 2018	High Tide Time	613
D11	03 Oct 2018	Low Tide (ft)	2.7
D11	03 Oct 2018	Low Tide Time	1102
D11	03 Oct 2018	Comments	Kelp; Seagrass; 1 Jogger; 10 Persons; 36 Surfers; Water clear
D11	10 Oct 2018	Arrive Time	1026
D11	10 Oct 2018	Weather	Sunny
D11	10 Oct 2018	Wind Speed (kts)	3.1
D11	10 Oct 2018	Wind Dir	W
D11	10 Oct 2018	Animal Life	None
D11	10 Oct 2018	Floatables	None
D11	10 Oct 2018	Water Color	Green
D11	10 Oct 2018	Current Direction	N
D11	10 Oct 2018	Water Temp (C)	20
D11	10 Oct 2018	Wave Height Low (ft)	4
D11	10 Oct 2018	High Tide (ft)	6
D11	10 Oct 2018	High Tide Time	1015
D11	10 Oct 2018	Low Tide (ft)	0.6
D11	10 Oct 2018	Low Tide Time	410
D11	10 Oct 2018	Comments	Kelp; Seagrass; 5 Persons; 6 Surfers; Water clear
D11	17 Oct 2018	Arrive Time	944
D11	17 Oct 2018	Weather	Sunny
D11	17 Oct 2018	Wind Speed (kts)	2.3
D11	17 Oct 2018	Wind Dir	E
D11	17 Oct 2018	Animal Life	None
D11	17 Oct 2018	Floatables	None
D11	17 Oct 2018	Water Color	Green
D11	17 Oct 2018	Current Direction	N
D11	17 Oct 2018	Water Temp (C)	18
D11	17 Oct 2018	Wave Height Low (ft)	3
D11	17 Oct 2018	High Tide (ft)	3.9
D11	17 Oct 2018	High Tide Time	636
D11	17 Oct 2018	Low Tide (ft)	3
D11	17 Oct 2018	Low Tide Time	1132
D11	17 Oct 2018	Comments	Algae; 4 Persons; 17 Surfers; Water clear
D11	24 Oct 2018	Arrive Time	854
D11	24 Oct 2018	Weather	Foggy
D11	24 Oct 2018	Wind Speed (kts)	2.3
D11	24 Oct 2018	Wind Dir	W
D11	24 Oct 2018	Animal Life	3 Shorebirds; 49 Birds
D11	24 Oct 2018	Floatables	None
D11	24 Oct 2018	Water Color	Green
D11	24 Oct 2018	Current Direction	W
D11	24 Oct 2018	Water Temp (C)	17
D11	24 Oct 2018	Wave Height Low (ft)	2
D11	24 Oct 2018	High Tide (ft)	5.8
D11	24 Oct 2018	High Tide Time	913
D11	24 Oct 2018	Low Tide (ft)	0.8
D11	24 Oct 2018	Low Tide Time	309

Station	Date	Parameter	Value
D11	24 Oct 2018	Comments	Kelp; Seagrass; 8 Persons; 16 Surfers; Water clear
D11	31 Oct 2018	Arrive Time	840
D11	31 Oct 2018	Weather	Sunny
D11	31 Oct 2018	Wind Speed (kts)	5.3
D11	31 Oct 2018	Wind Dir	E
D11	31 Oct 2018	Animal Life	None
D11	31 Oct 2018	Floatables	None
D11	31 Oct 2018	Water Color	Green
D11	31 Oct 2018	Current Direction	N
D11	31 Oct 2018	Water Temp (C)	16
D11	31 Oct 2018	Wave Height Low (ft)	4
D11	31 Oct 2018	High Tide (ft)	3.8
D11	31 Oct 2018	High Tide Time	445
D11	31 Oct 2018	Low Tide (ft)	3
D11	31 Oct 2018	Low Tide Time	924
D11	31 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; 10 Surfers; Water clear
D12	03 Oct 2018	Arrive Time	1015
D12	03 Oct 2018	Weather	Partly Cloudy
D12	03 Oct 2018	Wind Speed (kts)	7.1
D12	03 Oct 2018	Wind Dir	N
D12	03 Oct 2018	Animal Life	25 Shorebirds; 50 Cormorants
D12	03 Oct 2018	Floatables	None
D12	03 Oct 2018	Water Color	Green
D12	03 Oct 2018	Current Direction	N
D12	03 Oct 2018	Water Temp (C)	20
D12	03 Oct 2018	Wave Height Low (ft)	1
D12	03 Oct 2018	High Tide (ft)	3.8
D12	03 Oct 2018	High Tide Time	613
D12	03 Oct 2018	Low Tide (ft)	2.7
D12	03 Oct 2018	Low Tide Time	1102
D12	03 Oct 2018	Comments	Kelp; Seagrass; 16 Persons; Water clear
D12	10 Oct 2018	Arrive Time	957
D12	10 Oct 2018	Weather	Sunny
D12	10 Oct 2018	Wind Speed (kts)	3.3
D12	10 Oct 2018	Wind Dir	W
D12	10 Oct 2018	Animal Life	None
D12	10 Oct 2018	Floatables	None
D12	10 Oct 2018	Water Color	Green
D12	10 Oct 2018	Current Direction	N
D12	10 Oct 2018	Water Temp (C)	20
D12	10 Oct 2018	Wave Height Low (ft)	5
D12	10 Oct 2018	High Tide (ft)	6
D12	10 Oct 2018	High Tide Time	1015
D12	10 Oct 2018	Low Tide (ft)	0.6
D12	10 Oct 2018	Low Tide Time	410
D12	10 Oct 2018	Comments	Kelp; Seagrass; Water clear
D12	17 Oct 2018	Arrive Time	1009
D12	17 Oct 2018	Weather	Sunny
D12	17 Oct 2018	Wind Speed (kts)	5.4
D12	17 Oct 2018	Wind Dir	W
D12	17 Oct 2018	Animal Life	None

Station	Date	Parameter	Value
D12	17 Oct 2018	Floatables	None
D12	17 Oct 2018	Water Color	Green
D12	17 Oct 2018	Current Direction	N
D12	17 Oct 2018	Water Temp (C)	20
D12	17 Oct 2018	Wave Height Low (ft)	3
D12	17 Oct 2018	High Tide (ft)	3.9
D12	17 Oct 2018	High Tide Time	636
D12	17 Oct 2018	Low Tide (ft)	3
D12	17 Oct 2018	Low Tide Time	1132
D12	17 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; 2 Swimmers; Water clear
D12	24 Oct 2018	Arrive Time	825
D12	24 Oct 2018	Weather	Foggy
D12	24 Oct 2018	Wind Speed (kts)	1.5
D12	24 Oct 2018	Wind Dir	W
D12	24 Oct 2018	Animal Life	12 Shorebirds; 11 Birds
D12	24 Oct 2018	Floatables	None
D12	24 Oct 2018	Water Color	Green
D12	24 Oct 2018	Current Direction	W
D12	24 Oct 2018	Water Temp (C)	17
D12	24 Oct 2018	Wave Height Low (ft)	2
D12	24 Oct 2018	High Tide (ft)	5.8
D12	24 Oct 2018	High Tide Time	913
D12	24 Oct 2018	Low Tide (ft)	0.8
D12	24 Oct 2018	Low Tide Time	309
D12	24 Oct 2018	Comments	Kelp; Seagrass; 4 Persons; 11 Surfers; Water clear
D12	31 Oct 2018	Arrive Time	806
D12	31 Oct 2018	Weather	Sunny
D12	31 Oct 2018	Wind Speed (kts)	1.1
D12	31 Oct 2018	Wind Dir	E
D12	31 Oct 2018	Animal Life	None
D12	31 Oct 2018	Floatables	None
D12	31 Oct 2018	Water Color	Green
D12	31 Oct 2018	Current Direction	N
D12	31 Oct 2018	Water Temp (C)	16
D12	31 Oct 2018	Wave Height Low (ft)	2
D12	31 Oct 2018	High Tide (ft)	3.8
D12	31 Oct 2018	High Tide Time	445
D12	31 Oct 2018	Low Tide (ft)	3
D12	31 Oct 2018	Low Tide Time	924
D12	31 Oct 2018	Comments	Kelp; Seagrass; 1 Person; Water clear

Kelp Stations

Table 3.1

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2018	6	24	4	12	6	8	8	4
02 Oct 2018	6	24	4	12	6	8	8	4
03 Oct 2018	6	24	4	12	6	8	8	4
04 Oct 2018	3*	31*	3*	10*	6*	5*	5*	3*
05 Oct 2018	3*	31*	3*	10*	6*	5*	5*	3*
06 Oct 2018	3*	31*	3*	10*	6*	5*	5*	3*
07 Oct 2018	3*	31*	3*	10*	6*	5*	5*	3*
08 Oct 2018	4	24	3	11	7	6	6	4
09 Oct 2018	4	24	3	11	7	6	6	4
10 Oct 2018	4*	31*	4*	9*	6*	5*	6*	4*
11 Oct 2018	4*	31*	4*	9*	6*	5*	6*	4*
12 Oct 2018	4*	31*	4*	9*	6*	5*	6*	4*
13 Oct 2018	4*	31*	4*	9*	6*	5*	6*	4*
14 Oct 2018	4*	31*	4*	9*	6*	5*	6*	4*
15 Oct 2018	5	27	5	11	8	4	5	4
16 Oct 2018	5	27	5	11	8	4	5	4
17 Oct 2018	5*	11*	6*	9*	6*	3*	5*	5*
18 Oct 2018	5*	11*	6*	9*	6*	3*	5*	5*
19 Oct 2018	5*	11*	6*	9*	6*	3*	5*	5*
20 Oct 2018	5*	11*	6*	9*	6*	3*	5*	5*
21 Oct 2018	5*	11*	6*	9*	6*	3*	5*	5*
22 Oct 2018	4	8	5	7	5	3	4	4
23 Oct 2018	4	8	5	7	5	3	4	4
24 Oct 2018	5*	8*	5*	9*	6*	3*	5*	5*
25 Oct 2018	5*	8*	5*	9*	6*	3*	5*	5*
26 Oct 2018	5*	8*	5*	9*	6*	3*	5*	5*
27 Oct 2018	5*	8*	5*	9*	6*	3*	5*	5*
28 Oct 2018	5*	8*	5*	9*	6*	3*	5*	5*
29 Oct 2018	4	8	5	7	7	3	4	4
30 Oct 2018	4	8	5	7	7	3	4	4
31 Oct 2018	5*	6*	7*	6*	9*	3*	3*	3*

* 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 Oct 2018	2	7	2	2	2	2	2	2
02 Oct 2018	2	7	2	2	2	2	2	2
03 Oct 2018	2	7	2	2	2	2	2	2
04 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
05 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
06 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
07 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
08 Oct 2018	2	7	2	2	2	2	2	2
09 Oct 2018	2	7	2	2	2	2	2	2
10 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
11 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
12 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
13 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
14 Oct 2018	2*	10*	2*	2*	2*	2*	2*	2*
15 Oct 2018	2	7	2	2	2	2	2	2
16 Oct 2018	2	7	2	2	2	2	2	2
17 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
18 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
19 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
20 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
21 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
22 Oct 2018	2	2	2	2	2	2	2	2
23 Oct 2018	2	2	2	2	2	2	2	2
24 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
25 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
26 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
27 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
28 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
29 Oct 2018	2	2	2	2	2	2	2	2
30 Oct 2018	2	2	2	2	2	2	2	2
31 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*

* Geometric mean calculated using n<5

Table 3.3

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2018	2	4	3	2	2	2	2	2
02 Oct 2018	2	4	3	2	2	2	2	2
03 Oct 2018	2	4	3	2	2	2	2	2
04 Oct 2018	2*	5*	3*	2*	2*	2*	2*	2*
05 Oct 2018	2*	5*	3*	2*	2*	2*	2*	2*
06 Oct 2018	2*	5*	3*	2*	2*	2*	2*	2*
07 Oct 2018	2*	5*	3*	2*	2*	2*	2*	2*
08 Oct 2018	2	4	3	2	2	2	2	2
09 Oct 2018	2	4	3	2	2	2	2	2
10 Oct 2018	2*	5*	2*	2*	2*	2*	2*	2*
11 Oct 2018	2*	5*	2*	2*	2*	2*	2*	2*
12 Oct 2018	2*	5*	2*	2*	2*	2*	2*	2*
13 Oct 2018	2*	5*	2*	2*	2*	2*	2*	2*
14 Oct 2018	2*	5*	2*	2*	2*	2*	2*	2*
15 Oct 2018	2	4	2	2	2	2	2	2
16 Oct 2018	2	4	2	2	2	2	2	2
17 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
18 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
19 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
20 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
21 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
22 Oct 2018	2	2	2	2	2	2	2	2
23 Oct 2018	2	2	2	2	2	2	2	2
24 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
25 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
26 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
27 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
28 Oct 2018	2*	2*	2*	2*	2*	2*	2*	2*
29 Oct 2018	2	2	2	2	3	2	2	2
30 Oct 2018	2	2	2	2	3	2	2	2
31 Oct 2018	2*	2*	2*	2*	3*	2*	2*	2*

* Geometric mean calculated using n<5

Table 3.4

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

Date	A1	A6	A7	C4	C5	C6	C7	C8
01 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
15 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2018	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 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
15 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2018	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 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
15 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2018	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 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
15 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2018	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 Oct 2018	801	1	<2	<2	<2	1.00	19.3	83.77	8.1	33.64	8.1
A1	01 Oct 2018	801	12	<2	<2	<2	1.00	15.5	83.45	8.2	33.54	8.1
A1	01 Oct 2018	801	18	<2	<2	<2	1.00	14.4	85.09	7.7	33.52	8.1
A1	08 Oct 2018	759	1	2e	<2	<2	1.00	18.9	83.78	8.1	33.56	8.1
A1	08 Oct 2018	759	12	<20	<2	<2	0.10	16.9	81.10	8.1	33.53	8.1
A1	08 Oct 2018	759	18	10e	<2	<2	0.20	15.4	83.43	7.7	33.52	8.1
A1	15 Oct 2018	805	1	<20	<2	<2	0.10	18.4	76.88	8.0	33.48	8.1
A1	15 Oct 2018	805	12	<2	<2	<2	1.00	16.0	84.49	7.9	33.51	8.1
A1	15 Oct 2018	805	18	8e	<2	<2	0.25	15.6	84.81	7.6	33.52	8.1
A1	22 Oct 2018	826	1	<2	<2	<2	1.00	17.8	71.89	8.1	33.58	8.1
A1	22 Oct 2018	826	12	<2	<2	<2	1.00	16.3	80.05	7.4	33.55	8.0
A1	22 Oct 2018	826	18	2e	<2	<2	1.00	15.3	84.80	7.3	33.52	8.0
A1	29 Oct 2018	803	1	<2	<2	<2	1.00	17.8	84.52	7.9	33.61	8.2
A1	29 Oct 2018	803	12	<2	<2	<2	1.00	16.4	83.89	7.7	33.56	8.1
A1	29 Oct 2018	803	18	2e	2e	<2	1.00	14.6	84.86	7.2	33.52	8.1
A6	01 Oct 2018	840	1	<2	<2	<2	1.00	19.4	83.76	8.0	33.65	8.2
A6	01 Oct 2018	840	12	2e	<2	<2	1.00	15.9	85.25	7.7	33.77	8.1
A6	01 Oct 2018	840	18	46	4e	<2	0.09	13.7	86.00	7.5	33.70	8.0
A6	08 Oct 2018	830	1	<20	<2	<2	0.10	18.9	78.92	8.1	33.57	8.1
A6	08 Oct 2018	830	12	2e	<2	<2	1.00	15.4	84.46	8.2	33.51	8.1
A6	08 Oct 2018	830	18	2e	<2	2e	1.00	15.1	84.16	8.0	33.51	8.1
A6	15 Oct 2018	843	1	<20	<2	<2	0.10	18.7	76.87	7.8	33.57	8.1
A6	15 Oct 2018	843	12	<2	<2	<2	1.00	17.3	83.91	8.1	33.54	8.2
A6	15 Oct 2018	843	18	<20	2e	<2	0.10	16.4	84.84	7.8	33.53	8.1
A6	22 Oct 2018	902	1	<2	<2	<2	1.00	18.6	87.25	8.0	33.63	8.1
A6	22 Oct 2018	902	12	<2	<2	<2	1.00	16.3	81.91	7.9	33.53	8.1
A6	22 Oct 2018	902	18	<2	<2	<2	1.00	16.0	82.29	7.8	33.54	8.1
A6	29 Oct 2018	829	1	<2	<2	<2	1.00	17.7	84.98	7.8	33.60	8.1
A6	29 Oct 2018	829	12	6e	<2	<2	0.33	15.1	85.68	7.3	33.53	8.0
A6	29 Oct 2018	829	18	12e	<2	<2	0.17	14.2	85.64	7.0	33.52	8.0
A7	01 Oct 2018	822	1	<2	<2	<2	1.00	19.4	83.64	8.1	33.64	8.2
A7	01 Oct 2018	822	12	<2	<2	<2	1.00	15.5	84.79	7.8	33.54	8.1
A7	01 Oct 2018	822	18	2e	<2	<2	1.00	14.3	85.29	7.4	33.53	8.1
A7	08 Oct 2018	816	1	<2	<2	<2	1.00	18.9	82.45	8.1	33.56	8.1
A7	08 Oct 2018	816	12	<20	<2	<2	0.10	16.4	82.21	7.8	33.52	8.1
A7	08 Oct 2018	816	18	4e	<2	<2	0.50	15.0	84.62	7.8	33.51	8.1

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
A7	15 Oct 2018	829	1	<20	<2	<2	0.10	18.6	75.11	7.8	33.56	8.1
A7	15 Oct 2018	829	12	4e	<2	<2	0.50	16.2	84.77	7.8	33.53	8.1
A7	15 Oct 2018	829	18	4e	<2	<2	0.50	15.4	84.70	7.6	33.52	8.1
A7	22 Oct 2018	844	1	<2	<2	<2	1.00	18.4	85.44	8.3	33.62	8.1
A7	22 Oct 2018	844	12	4e	<2	<2	0.50	16.5	80.51	7.9	33.54	8.1
A7	22 Oct 2018	844	18	<2	<2	<2	1.00	15.9	81.65	7.5	33.54	8.0
A7	29 Oct 2018	815	1	<2	<2	<2	1.00	17.6	76.81	7.6	33.58	8.1
A7	29 Oct 2018	815	12	4e	<2	<2	0.50	16.0	84.20	7.4	33.54	8.1
A7	29 Oct 2018	815	18	22e	<2	<2	0.09	14.7	85.33	7.1	33.53	8.0
C4	01 Oct 2018	946	1	<2	<2	<2	1.00	19.0	79.63	7.9	33.64	8.2
C4	01 Oct 2018	946	3	<20	<2	<2	0.10	18.9	79.75	7.9	33.64	8.2
C4	01 Oct 2018	946	9	<20	<2	<2	0.10	15.5	71.80	6.6	33.56	8.1
C4	08 Oct 2018	948	1	<2	<2	<2	1.00	19.0	80.89	8.2	33.56	8.2
C4	08 Oct 2018	948	3	<20	<2	<2	0.10	19.0	80.84	8.2	33.56	8.2
C4	08 Oct 2018	948	9	<20	<2	<2	0.10	17.9	78.82	6.7	33.54	8.1
C4	15 Oct 2018	1005	1	<20	<2	<2	0.10	18.8	65.69	7.3	33.57	8.1
C4	15 Oct 2018	1005	3	<20	<2	<2	0.10	18.7	68.35	7.2	33.57	8.1
C4	15 Oct 2018	1005	9	<20	<2	<2	0.10	17.1	54.68	6.6	33.54	8.1
C4	22 Oct 2018	1029	1	<2	<2	<2	1.00	18.4	74.70	7.8	33.59	8.1
C4	22 Oct 2018	1029	3	<2	<2	<2	1.00	18.0	74.56	7.6	33.59	8.1
C4	22 Oct 2018	1029	9	<2	<2	<2	1.00	16.6	74.22	6.2	33.56	8.0
C4	29 Oct 2018	947	1	<2	<2	<2	1.00	17.5	78.84	7.8	33.58	8.1
C4	29 Oct 2018	947	3	<2	<2	<2	1.00	17.5	78.65	7.8	33.58	8.1
C4	29 Oct 2018	947	9	<2	<2	<2	1.00	16.0	80.27	6.9	33.55	8.1
C5	01 Oct 2018	937	1	<2	<2	<2	1.00	18.9	82.79	8.3	33.64	8.2
C5	01 Oct 2018	937	3	<2	<2	<2	1.00	18.9	83.21	8.3	33.64	8.2
C5	01 Oct 2018	937	9	2e	<2	<2	1.00	16.4	83.50	7.6	33.58	8.1
C5	08 Oct 2018	936	1	<20	<2	<2	0.10	19.1	71.94	7.4	33.57	8.1
C5	08 Oct 2018	936	3	<20	<2	<2	0.10	19.0	71.92	7.4	33.57	8.1
C5	08 Oct 2018	936	9	<20	<2	<2	0.10	18.4	75.79	7.1	33.56	8.1
C5	15 Oct 2018	950	1	20e	<2	4e	0.10	19.2	64.35	7.0	33.58	8.0
C5	15 Oct 2018	950	3	<20	<2	4e	0.10	19.0	63.30	7.1	33.58	8.1
C5	15 Oct 2018	950	9	<20	<2	<2	0.10	17.5	21.72	6.4	33.55	8.1
C5	22 Oct 2018	1011	1	<2	<2	<2	1.00	18.8	70.99	7.8	33.60	8.1
C5	22 Oct 2018	1011	3	<2	<2	<2	1.00	18.7	70.19	7.9	33.60	8.1
C5	22 Oct 2018	1011	9	<2	<2	<2	1.00	16.9	82.83	7.4	33.56	8.1
C5	29 Oct 2018	935	1	<2	<2	<2	1.00	17.9	60.60	6.6	33.58	8.0
C5	29 Oct 2018	935	3	<20	<2	<20	0.10	17.7	60.58	6.8	33.57	8.0
C5	29 Oct 2018	935	9	2e	<2	<2	1.00	16.7	74.39	6.7	33.55	8.0
C6	01 Oct 2018	925	1	<2	<2	<2	1.00	19.0	83.72	8.3	33.63	8.2
C6	01 Oct 2018	925	3	<2	<2	<2	1.00	19.0	83.81	8.3	33.64	8.2

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
C6	01 Oct 2018	925	9	<2	<2	<2	1.00	15.8	82.95	7.7	33.55	8.1
C6	08 Oct 2018	924	1	<20	<2	<2	0.10	19.2	73.48	7.7	33.59	8.1
C6	08 Oct 2018	924	3	<20	2e	<2	0.10	19.2	74.99	7.7	33.59	8.1
C6	08 Oct 2018	924	9	2e	<2	<2	1.00	17.9	80.62	7.4	33.55	8.1
C6	15 Oct 2018	939	1	<2	<2	<2	1.00	19.1	70.21	7.2	33.58	8.1
C6	15 Oct 2018	939	3	<2	<2	<2	1.00	18.9	72.16	7.7	33.57	8.2
C6	15 Oct 2018	939	9	<2	<2	<2	1.00	16.8	76.97	7.0	33.54	8.1
C6	22 Oct 2018	957	1	<2	<2	<2	1.00	18.7	83.67	8.2	33.62	8.1
C6	22 Oct 2018	957	3	<2	<2	<2	1.00	18.6	84.10	8.4	33.60	8.1
C6	22 Oct 2018	957	9	<2	<2	<2	1.00	17.2	82.14	7.2	33.56	8.1
C6	29 Oct 2018	923	1	<2	<2	<2	1.00	17.7	77.91	7.8	33.58	8.1
C6	29 Oct 2018	923	3	<2	<2	<2	1.00	17.7	77.30	7.8	33.58	8.1
C6	29 Oct 2018	923	9	2e	<2	<2	1.00	16.2	76.99	6.5	33.56	8.0
C7	01 Oct 2018	854	1	<2	<2	<2	1.00	19.3	83.25	8.2	33.65	8.2
C7	01 Oct 2018	854	12	2e	<2	<2	1.00	15.2	83.46	8.0	33.53	8.1
C7	01 Oct 2018	854	18	36e	<2	<2	0.06	13.6	85.08	7.2	33.51	8.0
C7	08 Oct 2018	848	1	<20	<2	<2	0.10	19.0	79.77	8.2	33.57	8.2
C7	08 Oct 2018	848	12	2e	<2	<2	1.00	15.9	83.36	8.0	33.51	8.1
C7	08 Oct 2018	848	18	18e	<2	<2	0.11	15.5	83.63	7.8	33.51	8.1
C7	15 Oct 2018	903	1	<2	<2	<2	1.00	18.4	80.04	7.6	33.56	8.1
C7	15 Oct 2018	903	12	<2	<2	<2	1.00	16.4	84.06	8.1	33.53	8.2
C7	15 Oct 2018	903	18	<2	<2	<2	1.00	15.7	84.73	7.7	33.53	8.1
C7	22 Oct 2018	921	1	<2	<2	<2	1.00	18.5	87.24	8.1	33.63	8.1
C7	22 Oct 2018	921	12	<2	<2	<2	1.00	16.7	84.29	8.0	33.55	8.1
C7	22 Oct 2018	921	18	2e	<2	<2	1.00	15.3	85.65	7.4	33.54	8.0
C7	29 Oct 2018	845	1	<2	<2	<2	1.00	18.0	83.34	7.8	33.61	8.1
C7	29 Oct 2018	845	12	<2	<2	<2	1.00	16.0	84.78	7.8	33.54	8.1
C7	29 Oct 2018	845	18	2e	<2	<2	1.00	15.0	83.95	7.0	33.53	8.0
C8	01 Oct 2018	907	1	<2	<2	<2	1.00	19.2	83.06	8.2	33.63	8.2
C8	01 Oct 2018	907	12	2e	<2	<2	1.00	14.8	83.21	7.9	33.52	8.1
C8	01 Oct 2018	907	18	26e	<2	<2	0.08	13.8	85.05	7.3	33.50	8.0
C8	08 Oct 2018	902	1	<20	<2	<2	0.10	19.0	81.05	8.3	33.57	8.2
C8	08 Oct 2018	902	12	<2	<2	<2	1.00	16.9	81.34	8.2	33.52	8.1
C8	08 Oct 2018	902	18	4e	2e	<2	0.50	15.7	82.77	8.0	33.51	8.1
C8	15 Oct 2018	917	1	<2	<2	<2	1.00	18.4	80.91	7.8	33.56	8.2
C8	15 Oct 2018	917	12	<2	<2	<2	1.00	16.9	83.59	8.2	33.53	8.2
C8	15 Oct 2018	917	18	4e	<2	2e	0.50	15.8	84.46	7.5	33.53	8.1
C8	22 Oct 2018	934	1	<2	<2	<2	1.00	18.6	86.84	8.1	33.63	8.1
C8	22 Oct 2018	934	12	<2	<2	<2	1.00	16.9	85.34	8.2	33.55	8.1
C8	22 Oct 2018	934	18	<2	<2	<2	1.00	15.3	84.21	7.7	33.52	8.1
C8	29 Oct 2018	858	1	<2	<2	<2	1.00	18.0	82.86	7.9	33.61	8.1

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH
C8	29 Oct 2018	858	12	2e	<2	<2	1.00	15.4	85.73	7.8	33.52	8.1
C8	29 Oct 2018	858	18	<2	<2	<2	1.00	14.8	84.80	7.1	33.53	8.0

ns = not sampled
ND = no data

Table 3.9

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

Station	Date	Parameter	Value
A1	01 Oct 2018	Depth (m)	18
A1	01 Oct 2018	Arrive Time	801
A1	01 Oct 2018	Depart Time	809
A1	01 Oct 2018	Air Temp (C)	20
A1	01 Oct 2018	Weather	Partly Cloudy
A1	01 Oct 2018	Visibility (mi)	5
A1	01 Oct 2018	Wind Speed (kts)	6
A1	01 Oct 2018	Wind Dir	W
A1	01 Oct 2018	Water Color	Green
A1	01 Oct 2018	Wave Ht Low (ft)	6
A1	01 Oct 2018	Wave Period (sec)	13
A1	01 Oct 2018	Sea State	Calm
A1	01 Oct 2018	High Tide (ft)	4.92
A1	01 Oct 2018	High Tide Time	1354
A1	01 Oct 2018	Low Tide (ft)	2.7
A1	01 Oct 2018	Low Tide Time	714
A1	01 Oct 2018	Comments	Kelp; Kelp debris
A1	08 Oct 2018	Depth (m)	20
A1	08 Oct 2018	Arrive Time	759
A1	08 Oct 2018	Depart Time	809
A1	08 Oct 2018	Air Temp (C)	18
A1	08 Oct 2018	Weather	Overcast
A1	08 Oct 2018	Visibility (mi)	5
A1	08 Oct 2018	Wind Speed (kts)	8
A1	08 Oct 2018	Wind Dir	E
A1	08 Oct 2018	Water Color	Brownish-Green
A1	08 Oct 2018	Wave Ht Low (ft)	3
A1	08 Oct 2018	Wave Period (sec)	9
A1	08 Oct 2018	Sea State	Light chop
A1	08 Oct 2018	High Tide (ft)	5.83
A1	08 Oct 2018	High Tide Time	909
A1	08 Oct 2018	Low Tide (ft)	0.06
A1	08 Oct 2018	Low Tide Time	1526
A1	08 Oct 2018	Comments	Kelp; Lobster floats
A1	15 Oct 2018	Depth (m)	19
A1	15 Oct 2018	Arrive Time	805
A1	15 Oct 2018	Depart Time	812
A1	15 Oct 2018	Air Temp (C)	18
A1	15 Oct 2018	Weather	Partly Cloudy
A1	15 Oct 2018	Visibility (mi)	5
A1	15 Oct 2018	Wind Speed (kts)	2
A1	15 Oct 2018	Wind Dir	E
A1	15 Oct 2018	Water Color	Greenish-Blue
A1	15 Oct 2018	Wave Ht Low (ft)	3
A1	15 Oct 2018	Wave Period (sec)	13
A1	15 Oct 2018	Sea State	Calm
A1	15 Oct 2018	High Tide (ft)	4.3
A1	15 Oct 2018	High Tide Time	1345
A1	15 Oct 2018	Low Tide (ft)	3.12

Station	Date	Parameter	Value
A1	15 Oct 2018	Low Tide Time	732
A1	15 Oct 2018	Comments	none
A1	22 Oct 2018	Depth (m)	20
A1	22 Oct 2018	Arrive Time	826
A1	22 Oct 2018	Depart Time	835
A1	22 Oct 2018	Air Temp (C)	18
A1	22 Oct 2018	Weather	Overcast
A1	22 Oct 2018	Visibility (mi)	7
A1	22 Oct 2018	Wind Speed (kts)	0
A1	22 Oct 2018	Wind Dir	
A1	22 Oct 2018	Water Color	Bluish-Green
A1	22 Oct 2018	Wave Ht Low (ft)	3
A1	22 Oct 2018	Wave Period (sec)	13
A1	22 Oct 2018	Sea State	Wind ripples
A1	22 Oct 2018	High Tide (ft)	5.31
A1	22 Oct 2018	High Tide Time	822
A1	22 Oct 2018	Low Tide (ft)	0.68
A1	22 Oct 2018	Low Tide Time	1440
A1	22 Oct 2018	Comments	Boats; Lobster floats
A1	29 Oct 2018	Depth (m)	18
A1	29 Oct 2018	Arrive Time	803
A1	29 Oct 2018	Depart Time	806
A1	29 Oct 2018	Air Temp (C)	17
A1	29 Oct 2018	Weather	Fog
A1	29 Oct 2018	Visibility (mi)	3
A1	29 Oct 2018	Wind Speed (kts)	3
A1	29 Oct 2018	Wind Dir	E
A1	29 Oct 2018	Water Color	Greenish-Blue
A1	29 Oct 2018	Wave Ht Low (ft)	2
A1	29 Oct 2018	Wave Period (sec)	16
A1	29 Oct 2018	Sea State	Calm
A1	29 Oct 2018	High Tide (ft)	3.49
A1	29 Oct 2018	High Tide Time	132
A1	29 Oct 2018	Low Tide (ft)	2.56
A1	29 Oct 2018	Low Tide Time	600
A1	29 Oct 2018	Comments	Kelp
A6	01 Oct 2018	Depth (m)	18
A6	01 Oct 2018	Arrive Time	840
A6	01 Oct 2018	Depart Time	841
A6	01 Oct 2018	Air Temp (C)	20
A6	01 Oct 2018	Weather	Partly Cloudy
A6	01 Oct 2018	Visibility (mi)	5
A6	01 Oct 2018	Wind Speed (kts)	13
A6	01 Oct 2018	Wind Dir	NW
A6	01 Oct 2018	Water Color	Green
A6	01 Oct 2018	Wave Ht Low (ft)	4
A6	01 Oct 2018	Wave Period (sec)	13
A6	01 Oct 2018	Sea State	Calm
A6	01 Oct 2018	High Tide (ft)	4.92
A6	01 Oct 2018	High Tide Time	1354
A6	01 Oct 2018	Low Tide (ft)	2.7
A6	01 Oct 2018	Low Tide Time	714

Station	Date	Parameter	Value
A6	01 Oct 2018	Comments	Kelp; Lobster floats
A6	08 Oct 2018	Depth (m)	24
A6	08 Oct 2018	Arrive Time	830
A6	08 Oct 2018	Depart Time	837
A6	08 Oct 2018	Air Temp (C)	18
A6	08 Oct 2018	Weather	Overcast
A6	08 Oct 2018	Visibility (mi)	5
A6	08 Oct 2018	Wind Speed (kts)	5
A6	08 Oct 2018	Wind Dir	SE
A6	08 Oct 2018	Water Color	Brownish-Green
A6	08 Oct 2018	Wave Ht Low (ft)	3
A6	08 Oct 2018	Wave Period (sec)	9
A6	08 Oct 2018	Sea State	Light chop
A6	08 Oct 2018	High Tide (ft)	5.83
A6	08 Oct 2018	High Tide Time	909
A6	08 Oct 2018	Low Tide (ft)	0.06
A6	08 Oct 2018	Low Tide Time	1526
A6	08 Oct 2018	Comments	Lobster floats
A6	15 Oct 2018	Depth (m)	19
A6	15 Oct 2018	Arrive Time	843
A6	15 Oct 2018	Depart Time	849
A6	15 Oct 2018	Air Temp (C)	18
A6	15 Oct 2018	Weather	Partly Cloudy
A6	15 Oct 2018	Visibility (mi)	8
A6	15 Oct 2018	Wind Speed (kts)	5
A6	15 Oct 2018	Wind Dir	E
A6	15 Oct 2018	Water Color	Greenish-Blue
A6	15 Oct 2018	Wave Ht Low (ft)	3
A6	15 Oct 2018	Wave Period (sec)	13
A6	15 Oct 2018	Sea State	Calm
A6	15 Oct 2018	High Tide (ft)	4.3
A6	15 Oct 2018	High Tide Time	1345
A6	15 Oct 2018	Low Tide (ft)	3.12
A6	15 Oct 2018	Low Tide Time	732
A6	15 Oct 2018	Comments	Kelp
A6	22 Oct 2018	Depth (m)	21
A6	22 Oct 2018	Arrive Time	902
A6	22 Oct 2018	Depart Time	908
A6	22 Oct 2018	Air Temp (C)	18
A6	22 Oct 2018	Weather	Overcast
A6	22 Oct 2018	Visibility (mi)	7
A6	22 Oct 2018	Wind Speed (kts)	3
A6	22 Oct 2018	Wind Dir	W
A6	22 Oct 2018	Water Color	Bluish-Green
A6	22 Oct 2018	Wave Ht Low (ft)	4
A6	22 Oct 2018	Wave Period (sec)	16
A6	22 Oct 2018	Sea State	Wind ripples
A6	22 Oct 2018	High Tide (ft)	5.31
A6	22 Oct 2018	High Tide Time	822
A6	22 Oct 2018	Low Tide (ft)	0.68
A6	22 Oct 2018	Low Tide Time	1440
A6	22 Oct 2018	Comments	Kelp; Lobster floats

Station	Date	Parameter	Value
A6	29 Oct 2018	Depth (m)	18
A6	29 Oct 2018	Arrive Time	829
A6	29 Oct 2018	Depart Time	833
A6	29 Oct 2018	Air Temp (C)	17
A6	29 Oct 2018	Weather	Continuous layer of clouds
A6	29 Oct 2018	Visibility (mi)	3
A6	29 Oct 2018	Wind Speed (kts)	6
A6	29 Oct 2018	Wind Dir	E
A6	29 Oct 2018	Water Color	Greenish-Blue
A6	29 Oct 2018	Wave Ht Low (ft)	2
A6	29 Oct 2018	Wave Period (sec)	16
A6	29 Oct 2018	Sea State	Calm
A6	29 Oct 2018	High Tide (ft)	3.49
A6	29 Oct 2018	High Tide Time	132
A6	29 Oct 2018	Low Tide (ft)	2.56
A6	29 Oct 2018	Low Tide Time	600
A6	29 Oct 2018	Comments	Kelp
A7	01 Oct 2018	Depth (m)	19
A7	01 Oct 2018	Arrive Time	822
A7	01 Oct 2018	Depart Time	826
A7	01 Oct 2018	Air Temp (C)	20
A7	01 Oct 2018	Weather	Partly Cloudy
A7	01 Oct 2018	Visibility (mi)	5
A7	01 Oct 2018	Wind Speed (kts)	11
A7	01 Oct 2018	Wind Dir	NW
A7	01 Oct 2018	Water Color	Green
A7	01 Oct 2018	Wave Ht Low (ft)	6
A7	01 Oct 2018	Wave Period (sec)	13
A7	01 Oct 2018	Sea State	Calm
A7	01 Oct 2018	High Tide (ft)	4.92
A7	01 Oct 2018	High Tide Time	1354
A7	01 Oct 2018	Low Tide (ft)	2.7
A7	01 Oct 2018	Low Tide Time	714
A7	01 Oct 2018	Comments	Kelp
A7	08 Oct 2018	Depth (m)	20
A7	08 Oct 2018	Arrive Time	816
A7	08 Oct 2018	Depart Time	821
A7	08 Oct 2018	Air Temp (C)	18
A7	08 Oct 2018	Weather	Overcast
A7	08 Oct 2018	Visibility (mi)	5
A7	08 Oct 2018	Wind Speed (kts)	9
A7	08 Oct 2018	Wind Dir	SE
A7	08 Oct 2018	Water Color	Brownish-Green
A7	08 Oct 2018	Wave Ht Low (ft)	3
A7	08 Oct 2018	Wave Period (sec)	9
A7	08 Oct 2018	Sea State	Light chop
A7	08 Oct 2018	High Tide (ft)	5.83
A7	08 Oct 2018	High Tide Time	909
A7	08 Oct 2018	Low Tide (ft)	0.06
A7	08 Oct 2018	Low Tide Time	1526
A7	08 Oct 2018	Comments	Boats; Lobster floats

Station	Date	Parameter	Value
A7	15 Oct 2018	Depth (m)	19
A7	15 Oct 2018	Arrive Time	829
A7	15 Oct 2018	Depart Time	833
A7	15 Oct 2018	Air Temp (C)	18
A7	15 Oct 2018	Weather	Partly Cloudy
A7	15 Oct 2018	Visibility (mi)	5
A7	15 Oct 2018	Wind Speed (kts)	1
A7	15 Oct 2018	Wind Dir	SE
A7	15 Oct 2018	Water Color	Greenish-Blue
A7	15 Oct 2018	Wave Ht Low (ft)	3
A7	15 Oct 2018	Wave Period (sec)	13
A7	15 Oct 2018	Sea State	Calm
A7	15 Oct 2018	High Tide (ft)	4.3
A7	15 Oct 2018	High Tide Time	1345
A7	15 Oct 2018	Low Tide (ft)	3.12
A7	15 Oct 2018	Low Tide Time	732
A7	15 Oct 2018	Comments	none
A7	22 Oct 2018	Depth (m)	20
A7	22 Oct 2018	Arrive Time	844
A7	22 Oct 2018	Depart Time	849
A7	22 Oct 2018	Air Temp (C)	18
A7	22 Oct 2018	Weather	Overcast
A7	22 Oct 2018	Visibility (mi)	7
A7	22 Oct 2018	Wind Speed (kts)	3
A7	22 Oct 2018	Wind Dir	NE
A7	22 Oct 2018	Water Color	Bluish-Green
A7	22 Oct 2018	Wave Ht Low (ft)	4
A7	22 Oct 2018	Wave Period (sec)	16
A7	22 Oct 2018	Sea State	Wind ripples
A7	22 Oct 2018	High Tide (ft)	5.31
A7	22 Oct 2018	High Tide Time	822
A7	22 Oct 2018	Low Tide (ft)	0.68
A7	22 Oct 2018	Low Tide Time	1440
A7	22 Oct 2018	Comments	Kelp; Lobster floats
A7	29 Oct 2018	Depth (m)	20
A7	29 Oct 2018	Arrive Time	815
A7	29 Oct 2018	Depart Time	818
A7	29 Oct 2018	Air Temp (C)	17
A7	29 Oct 2018	Weather	Fog
A7	29 Oct 2018	Visibility (mi)	3
A7	29 Oct 2018	Wind Speed (kts)	7
A7	29 Oct 2018	Wind Dir	E
A7	29 Oct 2018	Water Color	Greenish-Blue
A7	29 Oct 2018	Wave Ht Low (ft)	2
A7	29 Oct 2018	Wave Period (sec)	16
A7	29 Oct 2018	Sea State	Calm
A7	29 Oct 2018	High Tide (ft)	3.49
A7	29 Oct 2018	High Tide Time	132
A7	29 Oct 2018	Low Tide (ft)	2.56
A7	29 Oct 2018	Low Tide Time	600
A7	29 Oct 2018	Comments	Kelp
C4	01 Oct 2018	Depth (m)	11

Station	Date	Parameter	Value
C4	01 Oct 2018	Arrive Time	946
C4	01 Oct 2018	Depart Time	952
C4	01 Oct 2018	Air Temp (C)	20
C4	01 Oct 2018	Weather	Partly Cloudy
C4	01 Oct 2018	Visibility (mi)	5
C4	01 Oct 2018	Wind Speed (kts)	4
C4	01 Oct 2018	Wind Dir	W
C4	01 Oct 2018	Water Color	Green
C4	01 Oct 2018	Wave Ht Low (ft)	6
C4	01 Oct 2018	Wave Period (sec)	13
C4	01 Oct 2018	Sea State	Calm
C4	01 Oct 2018	High Tide (ft)	4.92
C4	01 Oct 2018	High Tide Time	1354
C4	01 Oct 2018	Low Tide (ft)	2.7
C4	01 Oct 2018	Low Tide Time	714
C4	01 Oct 2018	Comments	Kelp; Boats
C4	08 Oct 2018	Depth (m)	12
C4	08 Oct 2018	Arrive Time	948
C4	08 Oct 2018	Depart Time	952
C4	08 Oct 2018	Air Temp (C)	18
C4	08 Oct 2018	Weather	Partly Cloudy
C4	08 Oct 2018	Visibility (mi)	10
C4	08 Oct 2018	Wind Speed (kts)	5
C4	08 Oct 2018	Wind Dir	S
C4	08 Oct 2018	Water Color	Brownish-Green
C4	08 Oct 2018	Wave Ht Low (ft)	4
C4	08 Oct 2018	Wave Period (sec)	9
C4	08 Oct 2018	Sea State	Light chop
C4	08 Oct 2018	High Tide (ft)	5.83
C4	08 Oct 2018	High Tide Time	909
C4	08 Oct 2018	Low Tide (ft)	0.06
C4	08 Oct 2018	Low Tide Time	1526
C4	08 Oct 2018	Comments	Lobster floats; Boats
C4	15 Oct 2018	Depth (m)	9
C4	15 Oct 2018	Arrive Time	1005
C4	15 Oct 2018	Depart Time	1008
C4	15 Oct 2018	Air Temp (C)	18
C4	15 Oct 2018	Weather	Partly Cloudy
C4	15 Oct 2018	Visibility (mi)	6
C4	15 Oct 2018	Wind Speed (kts)	0
C4	15 Oct 2018	Wind Dir	
C4	15 Oct 2018	Water Color	Green
C4	15 Oct 2018	Wave Ht Low (ft)	3
C4	15 Oct 2018	Wave Period (sec)	13
C4	15 Oct 2018	Sea State	Calm
C4	15 Oct 2018	High Tide (ft)	4.3
C4	15 Oct 2018	High Tide Time	1345
C4	15 Oct 2018	Low Tide (ft)	3.12
C4	15 Oct 2018	Low Tide Time	732
C4	15 Oct 2018	Comments	Lobster floats
C4	22 Oct 2018	Depth (m)	11
C4	22 Oct 2018	Arrive Time	1029

Station	Date	Parameter	Value
C4	22 Oct 2018	Depart Time	1035
C4	22 Oct 2018	Air Temp (C)	18
C4	22 Oct 2018	Weather	Overcast
C4	22 Oct 2018	Visibility (mi)	9
C4	22 Oct 2018	Wind Speed (kts)	2
C4	22 Oct 2018	Wind Dir	NE
C4	22 Oct 2018	Water Color	Bluish-Green
C4	22 Oct 2018	Wave Ht Low (ft)	4
C4	22 Oct 2018	Wave Period (sec)	16
C4	22 Oct 2018	Sea State	Wind ripples
C4	22 Oct 2018	High Tide (ft)	5.31
C4	22 Oct 2018	High Tide Time	822
C4	22 Oct 2018	Low Tide (ft)	0.68
C4	22 Oct 2018	Low Tide Time	1440
C4	22 Oct 2018	Comments	Kelp; Lobster floats
C4	29 Oct 2018	Depth (m)	11
C4	29 Oct 2018	Arrive Time	947
C4	29 Oct 2018	Depart Time	950
C4	29 Oct 2018	Air Temp (C)	17
C4	29 Oct 2018	Weather	Continuous layer of clouds
C4	29 Oct 2018	Visibility (mi)	6
C4	29 Oct 2018	Wind Speed (kts)	5
C4	29 Oct 2018	Wind Dir	E
C4	29 Oct 2018	Water Color	Greenish-Blue
C4	29 Oct 2018	Wave Ht Low (ft)	2
C4	29 Oct 2018	Wave Period (sec)	16
C4	29 Oct 2018	Sea State	Calm
C4	29 Oct 2018	High Tide (ft)	3.49
C4	29 Oct 2018	High Tide Time	132
C4	29 Oct 2018	Low Tide (ft)	2.56
C4	29 Oct 2018	Low Tide Time	600
C4	29 Oct 2018	Comments	none
C5	01 Oct 2018	Depth (m)	11
C5	01 Oct 2018	Arrive Time	937
C5	01 Oct 2018	Depart Time	940
C5	01 Oct 2018	Air Temp (C)	20
C5	01 Oct 2018	Weather	Partly Cloudy
C5	01 Oct 2018	Visibility (mi)	5
C5	01 Oct 2018	Wind Speed (kts)	3
C5	01 Oct 2018	Wind Dir	W
C5	01 Oct 2018	Water Color	Green
C5	01 Oct 2018	Wave Ht Low (ft)	3
C5	01 Oct 2018	Wave Period (sec)	13
C5	01 Oct 2018	Sea State	Calm
C5	01 Oct 2018	High Tide (ft)	4.92
C5	01 Oct 2018	High Tide Time	1354
C5	01 Oct 2018	Low Tide (ft)	2.7
C5	01 Oct 2018	Low Tide Time	714
C5	01 Oct 2018	Comments	Kelp
C5	08 Oct 2018	Depth (m)	11
C5	08 Oct 2018	Arrive Time	936
C5	08 Oct 2018	Depart Time	940

Station	Date	Parameter	Value
C5	08 Oct 2018	Air Temp (C)	19
C5	08 Oct 2018	Weather	Partly Cloudy
C5	08 Oct 2018	Visibility (mi)	10
C5	08 Oct 2018	Wind Speed (kts)	3
C5	08 Oct 2018	Wind Dir	S
C5	08 Oct 2018	Water Color	Brownish-Green
C5	08 Oct 2018	Wave Ht Low (ft)	4
C5	08 Oct 2018	Wave Period (sec)	9
C5	08 Oct 2018	Sea State	Light chop
C5	08 Oct 2018	High Tide (ft)	5.83
C5	08 Oct 2018	High Tide Time	909
C5	08 Oct 2018	Low Tide (ft)	0.06
C5	08 Oct 2018	Low Tide Time	1526
C5	08 Oct 2018	Comments	Kelp; Lobster floats
C5	15 Oct 2018	Depth (m)	10
C5	15 Oct 2018	Arrive Time	950
C5	15 Oct 2018	Depart Time	955
C5	15 Oct 2018	Air Temp (C)	18
C5	15 Oct 2018	Weather	Partly Cloudy
C5	15 Oct 2018	Visibility (mi)	6
C5	15 Oct 2018	Wind Speed (kts)	0
C5	15 Oct 2018	Wind Dir	
C5	15 Oct 2018	Water Color	Greenish-Blue
C5	15 Oct 2018	Wave Ht Low (ft)	3
C5	15 Oct 2018	Wave Period (sec)	13
C5	15 Oct 2018	Sea State	Calm
C5	15 Oct 2018	High Tide (ft)	4.3
C5	15 Oct 2018	High Tide Time	1345
C5	15 Oct 2018	Low Tide (ft)	3.12
C5	15 Oct 2018	Low Tide Time	732
C5	15 Oct 2018	Comments	Kelp; Lobster floats
C5	22 Oct 2018	Depth (m)	12
C5	22 Oct 2018	Arrive Time	1011
C5	22 Oct 2018	Depart Time	1019
C5	22 Oct 2018	Air Temp (C)	18
C5	22 Oct 2018	Weather	Overcast
C5	22 Oct 2018	Visibility (mi)	9
C5	22 Oct 2018	Wind Speed (kts)	3
C5	22 Oct 2018	Wind Dir	NW
C5	22 Oct 2018	Water Color	Bluish-Green
C5	22 Oct 2018	Wave Ht Low (ft)	4
C5	22 Oct 2018	Wave Period (sec)	16
C5	22 Oct 2018	Sea State	Wind ripples
C5	22 Oct 2018	High Tide (ft)	5.31
C5	22 Oct 2018	High Tide Time	822
C5	22 Oct 2018	Low Tide (ft)	0.68
C5	22 Oct 2018	Low Tide Time	1440
C5	22 Oct 2018	Comments	Kelp debris; Lobster floats
C5	29 Oct 2018	Depth (m)	12
C5	29 Oct 2018	Arrive Time	935
C5	29 Oct 2018	Depart Time	938
C5	29 Oct 2018	Air Temp (C)	16

Station	Date	Parameter	Value
C5	29 Oct 2018	Weather	Continuous layer of clouds
C5	29 Oct 2018	Visibility (mi)	6
C5	29 Oct 2018	Wind Speed (kts)	4
C5	29 Oct 2018	Wind Dir	E
C5	29 Oct 2018	Water Color	Green
C5	29 Oct 2018	Wave Ht Low (ft)	2
C5	29 Oct 2018	Wave Period (sec)	16
C5	29 Oct 2018	Sea State	Calm
C5	29 Oct 2018	High Tide (ft)	3.49
C5	29 Oct 2018	High Tide Time	132
C5	29 Oct 2018	Low Tide (ft)	2.56
C5	29 Oct 2018	Low Tide Time	600
C5	29 Oct 2018	Comments	Kelp
C6	01 Oct 2018	Depth (m)	10
C6	01 Oct 2018	Arrive Time	925
C6	01 Oct 2018	Depart Time	928
C6	01 Oct 2018	Air Temp (C)	20
C6	01 Oct 2018	Weather	Partly Cloudy
C6	01 Oct 2018	Visibility (mi)	5
C6	01 Oct 2018	Wind Speed (kts)	4
C6	01 Oct 2018	Wind Dir	W
C6	01 Oct 2018	Water Color	Green
C6	01 Oct 2018	Wave Ht Low (ft)	3
C6	01 Oct 2018	Wave Period (sec)	13
C6	01 Oct 2018	Sea State	Calm
C6	01 Oct 2018	High Tide (ft)	4.92
C6	01 Oct 2018	High Tide Time	1354
C6	01 Oct 2018	Low Tide (ft)	2.7
C6	01 Oct 2018	Low Tide Time	714
C6	01 Oct 2018	Comments	Kelp; Seagrass
C6	08 Oct 2018	Depth (m)	12
C6	08 Oct 2018	Arrive Time	924
C6	08 Oct 2018	Depart Time	928
C6	08 Oct 2018	Air Temp (C)	19
C6	08 Oct 2018	Weather	Overcast
C6	08 Oct 2018	Visibility (mi)	5
C6	08 Oct 2018	Wind Speed (kts)	6
C6	08 Oct 2018	Wind Dir	SE
C6	08 Oct 2018	Water Color	Brownish-Green
C6	08 Oct 2018	Wave Ht Low (ft)	3
C6	08 Oct 2018	Wave Period (sec)	9
C6	08 Oct 2018	Sea State	Light chop
C6	08 Oct 2018	High Tide (ft)	5.83
C6	08 Oct 2018	High Tide Time	909
C6	08 Oct 2018	Low Tide (ft)	0.06
C6	08 Oct 2018	Low Tide Time	1526
C6	08 Oct 2018	Comments	Kelp; Lobster floats
C6	15 Oct 2018	Depth (m)	10
C6	15 Oct 2018	Arrive Time	939
C6	15 Oct 2018	Depart Time	941
C6	15 Oct 2018	Air Temp (C)	18
C6	15 Oct 2018	Weather	Partly Cloudy

Station	Date	Parameter	Value
C6	15 Oct 2018	Visibility (mi)	6
C6	15 Oct 2018	Wind Speed (kts)	3
C6	15 Oct 2018	Wind Dir	SW
C6	15 Oct 2018	Water Color	Greenish-Blue
C6	15 Oct 2018	Wave Ht Low (ft)	3
C6	15 Oct 2018	Wave Period (sec)	13
C6	15 Oct 2018	Sea State	Calm
C6	15 Oct 2018	High Tide (ft)	4.3
C6	15 Oct 2018	High Tide Time	1345
C6	15 Oct 2018	Low Tide (ft)	3.12
C6	15 Oct 2018	Low Tide Time	732
C6	15 Oct 2018	Comments	Lobster floats
C6	22 Oct 2018	Depth (m)	11
C6	22 Oct 2018	Arrive Time	957
C6	22 Oct 2018	Depart Time	1003
C6	22 Oct 2018	Air Temp (C)	18
C6	22 Oct 2018	Weather	Overcast
C6	22 Oct 2018	Visibility (mi)	9
C6	22 Oct 2018	Wind Speed (kts)	2
C6	22 Oct 2018	Wind Dir	SW
C6	22 Oct 2018	Water Color	Bluish-Green
C6	22 Oct 2018	Wave Ht Low (ft)	4
C6	22 Oct 2018	Wave Period (sec)	16
C6	22 Oct 2018	Sea State	Wind ripples
C6	22 Oct 2018	High Tide (ft)	5.31
C6	22 Oct 2018	High Tide Time	822
C6	22 Oct 2018	Low Tide (ft)	0.68
C6	22 Oct 2018	Low Tide Time	1440
C6	22 Oct 2018	Comments	Kelp; Lobster floats
C6	29 Oct 2018	Depth (m)	11
C6	29 Oct 2018	Arrive Time	923
C6	29 Oct 2018	Depart Time	925
C6	29 Oct 2018	Air Temp (C)	17
C6	29 Oct 2018	Weather	Continuous layer of clouds
C6	29 Oct 2018	Visibility (mi)	6
C6	29 Oct 2018	Wind Speed (kts)	4
C6	29 Oct 2018	Wind Dir	SE
C6	29 Oct 2018	Water Color	Green
C6	29 Oct 2018	Wave Ht Low (ft)	2
C6	29 Oct 2018	Wave Period (sec)	16
C6	29 Oct 2018	Sea State	Calm
C6	29 Oct 2018	High Tide (ft)	3.49
C6	29 Oct 2018	High Tide Time	132
C6	29 Oct 2018	Low Tide (ft)	2.56
C6	29 Oct 2018	Low Tide Time	600
C6	29 Oct 2018	Comments	Kelp; Kelp debris
C7	01 Oct 2018	Depth (m)	19
C7	01 Oct 2018	Arrive Time	854
C7	01 Oct 2018	Depart Time	856
C7	01 Oct 2018	Air Temp (C)	20
C7	01 Oct 2018	Weather	Partly Cloudy
C7	01 Oct 2018	Visibility (mi)	5

Station	Date	Parameter	Value
C7	01 Oct 2018	Wind Speed (kts)	8
C7	01 Oct 2018	Wind Dir	W
C7	01 Oct 2018	Water Color	Green
C7	01 Oct 2018	Wave Ht Low (ft)	4
C7	01 Oct 2018	Wave Period (sec)	13
C7	01 Oct 2018	Sea State	Calm
C7	01 Oct 2018	High Tide (ft)	4.92
C7	01 Oct 2018	High Tide Time	1354
C7	01 Oct 2018	Low Tide (ft)	2.7
C7	01 Oct 2018	Low Tide Time	714
C7	01 Oct 2018	Comments	Kelp; Lobster floats
C7	08 Oct 2018	Depth (m)	19
C7	08 Oct 2018	Arrive Time	848
C7	08 Oct 2018	Depart Time	852
C7	08 Oct 2018	Air Temp (C)	18
C7	08 Oct 2018	Weather	Overcast
C7	08 Oct 2018	Visibility (mi)	5
C7	08 Oct 2018	Wind Speed (kts)	0
C7	08 Oct 2018	Wind Dir	
C7	08 Oct 2018	Water Color	Brownish-Green
C7	08 Oct 2018	Wave Ht Low (ft)	3
C7	08 Oct 2018	Wave Period (sec)	9
C7	08 Oct 2018	Sea State	Light chop
C7	08 Oct 2018	High Tide (ft)	5.83
C7	08 Oct 2018	High Tide Time	909
C7	08 Oct 2018	Low Tide (ft)	0.06
C7	08 Oct 2018	Low Tide Time	1526
C7	08 Oct 2018	Comments	Kelp; Lobster floats
C7	15 Oct 2018	Depth (m)	18
C7	15 Oct 2018	Arrive Time	903
C7	15 Oct 2018	Depart Time	905
C7	15 Oct 2018	Air Temp (C)	18
C7	15 Oct 2018	Weather	Partly Cloudy
C7	15 Oct 2018	Visibility (mi)	8
C7	15 Oct 2018	Wind Speed (kts)	1
C7	15 Oct 2018	Wind Dir	W
C7	15 Oct 2018	Water Color	Greenish-Blue
C7	15 Oct 2018	Wave Ht Low (ft)	3
C7	15 Oct 2018	Wave Period (sec)	13
C7	15 Oct 2018	Sea State	Calm
C7	15 Oct 2018	High Tide (ft)	4.3
C7	15 Oct 2018	High Tide Time	1345
C7	15 Oct 2018	Low Tide (ft)	3.12
C7	15 Oct 2018	Low Tide Time	732
C7	15 Oct 2018	Comments	Lobster floats
C7	22 Oct 2018	Depth (m)	19
C7	22 Oct 2018	Arrive Time	921
C7	22 Oct 2018	Depart Time	926
C7	22 Oct 2018	Air Temp (C)	18
C7	22 Oct 2018	Weather	Overcast
C7	22 Oct 2018	Visibility (mi)	8
C7	22 Oct 2018	Wind Speed (kts)	0

Station	Date	Parameter	Value
C7	22 Oct 2018	Wind Dir	
C7	22 Oct 2018	Water Color	Blue
C7	22 Oct 2018	Wave Ht Low (ft)	4
C7	22 Oct 2018	Wave Period (sec)	16
C7	22 Oct 2018	Sea State	Wind ripples
C7	22 Oct 2018	High Tide (ft)	5.31
C7	22 Oct 2018	High Tide Time	822
C7	22 Oct 2018	Low Tide (ft)	0.68
C7	22 Oct 2018	Low Tide Time	1440
C7	22 Oct 2018	Comments	Lobster floats; Kelp debris
C7	29 Oct 2018	Depth (m)	19
C7	29 Oct 2018	Arrive Time	845
C7	29 Oct 2018	Depart Time	848
C7	29 Oct 2018	Air Temp (C)	17
C7	29 Oct 2018	Weather	Continuous layer of clouds
C7	29 Oct 2018	Visibility (mi)	3
C7	29 Oct 2018	Wind Speed (kts)	4
C7	29 Oct 2018	Wind Dir	E
C7	29 Oct 2018	Water Color	Greenish-Blue
C7	29 Oct 2018	Wave Ht Low (ft)	2
C7	29 Oct 2018	Wave Period (sec)	16
C7	29 Oct 2018	Sea State	Calm
C7	29 Oct 2018	High Tide (ft)	3.49
C7	29 Oct 2018	High Tide Time	132
C7	29 Oct 2018	Low Tide (ft)	2.56
C7	29 Oct 2018	Low Tide Time	600
C7	29 Oct 2018	Comments	Kelp
C8	01 Oct 2018	Depth (m)	19
C8	01 Oct 2018	Arrive Time	907
C8	01 Oct 2018	Depart Time	911
C8	01 Oct 2018	Air Temp (C)	20
C8	01 Oct 2018	Weather	Partly Cloudy
C8	01 Oct 2018	Visibility (mi)	5
C8	01 Oct 2018	Wind Speed (kts)	0
C8	01 Oct 2018	Wind Dir	
C8	01 Oct 2018	Water Color	Green
C8	01 Oct 2018	Wave Ht Low (ft)	4
C8	01 Oct 2018	Wave Period (sec)	13
C8	01 Oct 2018	Sea State	Calm
C8	01 Oct 2018	High Tide (ft)	4.92
C8	01 Oct 2018	High Tide Time	1354
C8	01 Oct 2018	Low Tide (ft)	2.7
C8	01 Oct 2018	Low Tide Time	714
C8	01 Oct 2018	Comments	Kelp debris; Kelp
C8	08 Oct 2018	Depth (m)	20
C8	08 Oct 2018	Arrive Time	902
C8	08 Oct 2018	Depart Time	905
C8	08 Oct 2018	Air Temp (C)	18
C8	08 Oct 2018	Weather	Overcast
C8	08 Oct 2018	Visibility (mi)	5
C8	08 Oct 2018	Wind Speed (kts)	7
C8	08 Oct 2018	Wind Dir	SE

Station	Date	Parameter	Value
C8	08 Oct 2018	Water Color	Brownish-Green
C8	08 Oct 2018	Wave Ht Low (ft)	3
C8	08 Oct 2018	Wave Period (sec)	9
C8	08 Oct 2018	Sea State	Light chop
C8	08 Oct 2018	High Tide (ft)	5.83
C8	08 Oct 2018	High Tide Time	909
C8	08 Oct 2018	Low Tide (ft)	0.06
C8	08 Oct 2018	Low Tide Time	1526
C8	08 Oct 2018	Comments	Kelp; Lobster floats
C8	15 Oct 2018	Depth (m)	20
C8	15 Oct 2018	Arrive Time	917
C8	15 Oct 2018	Depart Time	920
C8	15 Oct 2018	Air Temp (C)	19
C8	15 Oct 2018	Weather	Partly Cloudy
C8	15 Oct 2018	Visibility (mi)	6
C8	15 Oct 2018	Wind Speed (kts)	2
C8	15 Oct 2018	Wind Dir	NE
C8	15 Oct 2018	Water Color	Greenish-Blue
C8	15 Oct 2018	Wave Ht Low (ft)	3
C8	15 Oct 2018	Wave Period (sec)	13
C8	15 Oct 2018	Sea State	Calm
C8	15 Oct 2018	High Tide (ft)	4.3
C8	15 Oct 2018	High Tide Time	1345
C8	15 Oct 2018	Low Tide (ft)	3.12
C8	15 Oct 2018	Low Tide Time	732
C8	15 Oct 2018	Comments	Lobster floats
C8	22 Oct 2018	Depth (m)	21
C8	22 Oct 2018	Arrive Time	934
C8	22 Oct 2018	Depart Time	939
C8	22 Oct 2018	Air Temp (C)	18
C8	22 Oct 2018	Weather	Overcast
C8	22 Oct 2018	Visibility (mi)	8
C8	22 Oct 2018	Wind Speed (kts)	6
C8	22 Oct 2018	Wind Dir	N
C8	22 Oct 2018	Water Color	Blue
C8	22 Oct 2018	Wave Ht Low (ft)	4
C8	22 Oct 2018	Wave Period (sec)	16
C8	22 Oct 2018	Sea State	Wind ripples
C8	22 Oct 2018	High Tide (ft)	5.31
C8	22 Oct 2018	High Tide Time	822
C8	22 Oct 2018	Low Tide (ft)	0.68
C8	22 Oct 2018	Low Tide Time	1440
C8	22 Oct 2018	Comments	Lobster floats; Kelp debris
C8	29 Oct 2018	Depth (m)	21
C8	29 Oct 2018	Arrive Time	858
C8	29 Oct 2018	Depart Time	901
C8	29 Oct 2018	Air Temp (C)	17
C8	29 Oct 2018	Weather	Continuous layer of clouds
C8	29 Oct 2018	Visibility (mi)	5
C8	29 Oct 2018	Wind Speed (kts)	4
C8	29 Oct 2018	Wind Dir	SE
C8	29 Oct 2018	Water Color	Greenish-Blue

Station	Date	Parameter	Value
C8	29 Oct 2018	Wave Ht Low (ft)	2
C8	29 Oct 2018	Wave Period (sec)	16
C8	29 Oct 2018	Sea State	Calm
C8	29 Oct 2018	High Tide (ft)	3.49
C8	29 Oct 2018	High Tide Time	132
C8	29 Oct 2018	Low Tide (ft)	2.56
C8	29 Oct 2018	Low Tide Time	600
C8	29 Oct 2018	Comments	none

Table 3.10

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A1	01 Oct 2018	1	19.27	83.77	8.1	33.64	8.1	23.9	0.65
A1	01 Oct 2018	2	19.25	84.47	8.0	33.65	8.1	23.9	0.68
A1	01 Oct 2018	3	18.53	84.46	8.0	33.65	8.1	24.1	0.82
A1	01 Oct 2018	4	17.08	83.25	8.3	33.60	8.1	24.4	1.07
A1	01 Oct 2018	5	16.61	82.95	8.5	33.56	8.1	24.5	1.19
A1	01 Oct 2018	6	15.99	83.11	8.5	33.55	8.1	24.6	1.27
A1	01 Oct 2018	7	15.91	83.24	8.4	33.52	8.1	24.6	1.35
A1	01 Oct 2018	8	15.80	83.35	8.4	33.53	8.1	24.7	1.45
A1	01 Oct 2018	9	15.82	83.34	8.4	33.52	8.1	24.7	1.50
A1	01 Oct 2018	10	15.68	83.34	8.3	33.53	8.1	24.7	1.58
A1	01 Oct 2018	11	15.73	83.40	8.2	33.53	8.1	24.7	1.59
A1	01 Oct 2018	12	15.48	83.45	8.2	33.54	8.1	24.7	1.63
A1	01 Oct 2018	13	15.31	83.56	8.1	33.53	8.1	24.8	1.69
A1	01 Oct 2018	14	15.19	83.67	8.0	33.53	8.1	24.8	1.73
A1	01 Oct 2018	15	15.04	83.88	8.0	33.53	8.1	24.8	1.69
A1	01 Oct 2018	16	14.93	84.08	7.9	33.53	8.1	24.9	1.68
A1	01 Oct 2018	17	14.73	84.56	7.8	33.53	8.1	24.9	1.48
A1	01 Oct 2018	18	14.44	85.09	7.7	33.52	8.1	25.0	1.32
A1	01 Oct 2018	19	14.77	84.92	7.8	33.50	8.0	24.9	1.29
A1	08 Oct 2018	1	18.88	83.78	8.1	33.56	8.1	24.0	0.61
A1	08 Oct 2018	2	18.88	84.61	8.1	33.56	8.1	24.0	0.63
A1	08 Oct 2018	3	18.88	84.68	8.1	33.56	8.1	24.0	0.67
A1	08 Oct 2018	4	18.82	84.44	8.1	33.56	8.1	24.0	0.91
A1	08 Oct 2018	5	18.51	82.21	8.2	33.55	8.1	24.0	1.24
A1	08 Oct 2018	6	18.30	81.23	8.3	33.54	8.1	24.1	1.42
A1	08 Oct 2018	7	18.17	80.54	8.3	33.54	8.1	24.1	1.56
A1	08 Oct 2018	8	18.03	80.40	8.3	33.53	8.1	24.1	1.75
A1	08 Oct 2018	9	17.82	79.95	8.3	33.53	8.1	24.2	1.89
A1	08 Oct 2018	10	17.66	79.92	8.2	33.53	8.1	24.2	1.91
A1	08 Oct 2018	11	17.55	80.28	8.1	33.53	8.1	24.3	1.90
A1	08 Oct 2018	12	16.88	81.10	8.1	33.53	8.1	24.4	1.82
A1	08 Oct 2018	13	16.53	81.64	8.2	33.52	8.1	24.5	1.79
A1	08 Oct 2018	14	16.45	82.13	8.1	33.52	8.1	24.5	1.63
A1	08 Oct 2018	15	16.42	82.35	8.0	33.51	8.1	24.5	1.46
A1	08 Oct 2018	16	16.10	82.70	8.0	33.52	8.1	24.6	1.22
A1	08 Oct 2018	17	15.90	83.24	7.8	33.52	8.1	24.6	1.05
A1	08 Oct 2018	18	15.42	83.43	7.7	33.52	8.1	24.7	0.69
A1	08 Oct 2018	19	15.48	81.02	7.8	33.50	8.1	24.7	0.55
A1	15 Oct 2018	1	18.38	76.88	8.0	33.48	8.1	24.0	1.29
A1	15 Oct 2018	2	18.38	77.70	8.0	33.56	8.1	24.1	1.26
A1	15 Oct 2018	3	18.37	77.71	8.0	33.56	8.1	24.1	1.46
A1	15 Oct 2018	4	18.36	77.77	8.0	33.56	8.1	24.1	1.55
A1	15 Oct 2018	5	18.32	78.00	8.0	33.56	8.1	24.1	1.63
A1	15 Oct 2018	6	17.88	78.74	8.0	33.56	8.1	24.2	1.63
A1	15 Oct 2018	7	17.71	80.83	8.1	33.54	8.1	24.2	1.61
A1	15 Oct 2018	8	17.20	82.96	8.1	33.53	8.1	24.3	1.56
A1	15 Oct 2018	9	16.87	83.62	7.9	33.53	8.1	24.4	1.43
A1	15 Oct 2018	10	16.33	83.93	8.0	33.52	8.1	24.5	1.21

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A1	15 Oct 2018	11	16.12	84.44	7.8	33.52	8.1	24.6	1.13
A1	15 Oct 2018	12	16.03	84.49	7.9	33.51	8.1	24.6	1.13
A1	15 Oct 2018	13	15.74	84.92	7.8	33.52	8.1	24.7	1.01
A1	15 Oct 2018	14	15.80	84.72	7.8	33.52	8.1	24.7	0.97
A1	15 Oct 2018	15	15.70	84.67	7.7	33.52	8.1	24.7	0.98
A1	15 Oct 2018	16	15.72	84.72	7.7	33.52	8.1	24.7	1.01
A1	15 Oct 2018	17	15.68	84.69	7.7	33.52	8.1	24.7	0.95
A1	15 Oct 2018	18	15.65	84.81	7.6	33.52	8.1	24.7	0.89
A1	15 Oct 2018	19	15.56	84.63	7.6	33.53	8.1	24.7	0.76
A1	22 Oct 2018	1	17.84	71.89	8.1	33.58	8.1	24.2	1.77
A1	22 Oct 2018	2	17.84	76.36	8.0	33.58	8.1	24.2	1.86
A1	22 Oct 2018	3	17.77	77.49	8.0	33.58	8.1	24.2	1.96
A1	22 Oct 2018	4	17.58	77.83	8.0	33.58	8.1	24.3	1.99
A1	22 Oct 2018	5	17.54	78.76	8.0	33.58	8.1	24.3	1.99
A1	22 Oct 2018	6	17.51	79.84	8.0	33.58	8.1	24.3	1.94
A1	22 Oct 2018	7	17.48	80.23	8.0	33.58	8.1	24.3	1.90
A1	22 Oct 2018	8	17.46	80.35	8.0	33.58	8.1	24.3	1.91
A1	22 Oct 2018	9	17.36	80.18	7.8	33.56	8.1	24.3	1.92
A1	22 Oct 2018	10	16.72	79.99	7.8	33.55	8.1	24.5	2.10
A1	22 Oct 2018	11	16.77	80.23	7.7	33.53	8.0	24.4	2.19
A1	22 Oct 2018	12	16.30	80.05	7.4	33.55	8.0	24.6	1.89
A1	22 Oct 2018	13	16.00	79.91	7.3	33.53	8.0	24.6	1.48
A1	22 Oct 2018	14	15.92	80.27	7.2	33.52	8.0	24.6	1.22
A1	22 Oct 2018	15	15.68	81.18	7.2	33.53	8.0	24.7	1.12
A1	22 Oct 2018	16	15.45	82.69	7.3	33.52	8.0	24.7	1.03
A1	22 Oct 2018	17	15.37	84.49	7.3	33.52	8.0	24.8	0.88
A1	22 Oct 2018	18	15.31	84.80	7.3	33.52	8.0	24.8	0.84
A1	22 Oct 2018	19	15.11	84.95	7.3	33.52	8.0	24.8	0.83
A1	22 Oct 2018	20	14.95	84.96	7.4	33.52	8.0	24.8	0.88
A1	29 Oct 2018	1	17.81	84.52	7.9	33.61	8.2	24.3	0.98
A1	29 Oct 2018	2	17.78	84.05	7.8	33.60	8.1	24.3	1.05
A1	29 Oct 2018	3	17.53	84.08	7.8	33.59	8.1	24.3	1.13
A1	29 Oct 2018	4	17.33	83.87	7.8	33.59	8.1	24.4	1.20
A1	29 Oct 2018	5	17.23	83.82	7.9	33.58	8.1	24.4	1.23
A1	29 Oct 2018	6	17.14	83.86	7.9	33.58	8.1	24.4	1.26
A1	29 Oct 2018	7	17.08	83.90	7.9	33.58	8.1	24.4	1.27
A1	29 Oct 2018	8	17.09	83.89	7.9	33.57	8.1	24.4	1.28
A1	29 Oct 2018	9	17.07	83.75	7.8	33.57	8.1	24.4	1.26
A1	29 Oct 2018	10	17.02	83.62	7.8	33.57	8.1	24.4	1.28
A1	29 Oct 2018	11	16.82	83.76	7.8	33.57	8.1	24.5	1.19
A1	29 Oct 2018	12	16.42	83.89	7.7	33.56	8.1	24.5	1.11
A1	29 Oct 2018	13	15.98	84.09	7.6	33.55	8.1	24.6	0.99
A1	29 Oct 2018	14	15.50	84.17	7.5	33.54	8.1	24.7	0.85
A1	29 Oct 2018	15	15.24	84.17	7.4	33.53	8.1	24.8	0.73
A1	29 Oct 2018	16	14.90	84.29	7.3	33.53	8.1	24.9	0.63
A1	29 Oct 2018	17	14.61	84.73	7.2	33.52	8.1	24.9	0.57
A1	29 Oct 2018	18	14.55	84.86	7.2	33.52	8.1	24.9	0.53
A1	29 Oct 2018	19	14.56	84.85	7.1	33.52	8.1	24.9	0.50
A6	01 Oct 2018	1	19.37	83.76	8.0	33.65	8.2	23.9	0.82
A6	01 Oct 2018	2	19.22	83.65	8.0	33.63	8.2	23.9	1.00
A6	01 Oct 2018	3	19.12	83.77	8.0	33.64	8.2	24.0	1.04
A6	01 Oct 2018	4	19.05	84.11	8.0	33.63	8.2	24.0	1.03

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	01 Oct 2018	5	19.03	84.39	8.0	33.63	8.2	24.0	0.93
A6	01 Oct 2018	6	19.01	84.59	8.0	33.64	8.2	24.0	0.90
A6	01 Oct 2018	7	18.90	84.60	7.9	33.66	8.2	24.0	0.88
A6	01 Oct 2018	8	18.36	84.24	7.9	33.76	8.2	24.2	0.89
A6	01 Oct 2018	9	17.72	83.86	7.9	33.73	8.1	24.4	0.85
A6	01 Oct 2018	10	17.19	83.98	7.9	33.77	8.1	24.5	0.90
A6	01 Oct 2018	11	16.61	84.66	7.8	33.72	8.1	24.6	0.98
A6	01 Oct 2018	12	15.94	85.25	7.7	33.77	8.1	24.8	1.02
A6	01 Oct 2018	13	15.41	85.74	7.7	33.71	8.1	24.9	1.09
A6	01 Oct 2018	14	15.01	85.66	7.5	33.72	8.1	25.0	1.06
A6	01 Oct 2018	15	14.68	85.12	7.5	33.66	8.1	25.0	0.97
A6	01 Oct 2018	16	14.53	85.12	7.5	33.64	8.1	25.0	0.85
A6	01 Oct 2018	17	14.25	85.63	7.4	33.67	8.1	25.1	0.76
A6	01 Oct 2018	18	13.70	86.00	7.5	33.70	8.0	25.2	0.92
A6	08 Oct 2018	1	18.93	78.92	8.1	33.57	8.1	23.9	1.13
A6	08 Oct 2018	2	18.93	81.27	8.1	33.57	8.1	23.9	1.11
A6	08 Oct 2018	3	18.91	81.42	8.1	33.57	8.2	23.9	1.22
A6	08 Oct 2018	4	18.90	81.68	8.2	33.56	8.2	23.9	1.29
A6	08 Oct 2018	5	18.89	81.78	8.2	33.56	8.2	24.0	1.36
A6	08 Oct 2018	6	18.88	81.82	8.2	33.56	8.2	24.0	1.37
A6	08 Oct 2018	7	18.63	81.58	8.1	33.56	8.2	24.0	1.46
A6	08 Oct 2018	8	18.35	81.66	8.1	33.56	8.1	24.1	1.52
A6	08 Oct 2018	9	17.70	81.50	8.0	33.56	8.1	24.2	1.60
A6	08 Oct 2018	10	16.89	82.09	7.8	33.55	8.1	24.4	1.44
A6	08 Oct 2018	11	15.76	83.36	7.9	33.55	8.1	24.7	1.13
A6	08 Oct 2018	12	15.37	84.46	8.2	33.51	8.1	24.7	1.01
A6	08 Oct 2018	13	15.50	84.90	8.1	33.50	8.1	24.7	1.01
A6	08 Oct 2018	14	15.25	84.70	8.1	33.50	8.1	24.8	0.91
A6	08 Oct 2018	15	15.22	84.82	8.0	33.50	8.1	24.8	0.88
A6	08 Oct 2018	16	15.15	84.78	8.0	33.51	8.1	24.8	0.90
A6	08 Oct 2018	17	15.14	84.30	8.0	33.51	8.1	24.8	0.86
A6	08 Oct 2018	18	15.14	84.16	8.0	33.51	8.1	24.8	0.96
A6	08 Oct 2018	19	15.14	84.16	8.0	33.51	8.1	24.8	0.90
A6	08 Oct 2018	20	15.14	84.17	8.0	33.51	8.1	24.8	0.84
A6	15 Oct 2018	1	18.73	76.87	7.8	33.57	8.1	24.0	0.80
A6	15 Oct 2018	2	18.42	78.01	7.9	33.57	8.2	24.1	0.89
A6	15 Oct 2018	3	18.19	81.22	8.1	33.56	8.2	24.1	1.00
A6	15 Oct 2018	4	18.18	82.83	8.1	33.55	8.2	24.1	1.07
A6	15 Oct 2018	5	18.14	83.00	8.1	33.55	8.2	24.1	1.08
A6	15 Oct 2018	6	18.00	83.13	8.1	33.55	8.2	24.2	1.07
A6	15 Oct 2018	7	17.92	83.55	8.1	33.55	8.2	24.2	1.13
A6	15 Oct 2018	8	17.92	83.61	8.1	33.55	8.2	24.2	1.11
A6	15 Oct 2018	9	17.90	83.42	8.1	33.55	8.2	24.2	1.15
A6	15 Oct 2018	10	17.85	83.39	8.1	33.55	8.2	24.2	1.17
A6	15 Oct 2018	11	17.51	83.71	8.1	33.55	8.2	24.3	1.22
A6	15 Oct 2018	12	17.32	83.91	8.1	33.54	8.2	24.3	1.26
A6	15 Oct 2018	13	17.00	84.18	8.0	33.54	8.2	24.4	1.30
A6	15 Oct 2018	14	16.69	84.37	8.1	33.53	8.2	24.5	1.34
A6	15 Oct 2018	15	16.57	84.47	8.1	33.53	8.2	24.5	1.38
A6	15 Oct 2018	16	16.53	84.46	8.0	33.53	8.2	24.5	1.35
A6	15 Oct 2018	17	16.47	84.64	8.0	33.53	8.1	24.5	1.20
A6	15 Oct 2018	18	16.35	84.84	7.8	33.53	8.1	24.5	0.97
A6	15 Oct 2018	19	16.05	85.11	7.7	33.53	8.1	24.6	0.85

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A6	15 Oct 2018	20	15.77	85.22	7.7	33.53	8.1	24.7	0.74
A6	22 Oct 2018	1	18.60	87.25	8.0	33.63	8.1	24.1	0.41
A6	22 Oct 2018	2	18.60	87.26	8.0	33.64	8.1	24.1	0.44
A6	22 Oct 2018	3	18.60	87.46	8.0	33.64	8.1	24.1	0.43
A6	22 Oct 2018	4	18.59	87.42	8.0	33.64	8.1	24.1	0.44
A6	22 Oct 2018	5	18.54	87.43	7.9	33.64	8.1	24.1	0.48
A6	22 Oct 2018	6	18.24	87.31	8.0	33.63	8.1	24.2	0.69
A6	22 Oct 2018	7	17.96	86.23	8.0	33.61	8.1	24.2	1.02
A6	22 Oct 2018	8	17.54	84.51	8.0	33.59	8.1	24.3	1.41
A6	22 Oct 2018	9	17.13	83.80	7.9	33.57	8.1	24.4	1.69
A6	22 Oct 2018	10	16.49	82.58	8.0	33.55	8.1	24.5	2.20
A6	22 Oct 2018	11	16.46	82.07	8.0	33.54	8.1	24.5	2.46
A6	22 Oct 2018	12	16.32	81.91	7.9	33.53	8.1	24.5	2.49
A6	22 Oct 2018	13	16.24	81.92	7.9	33.53	8.1	24.6	2.47
A6	22 Oct 2018	14	16.21	82.02	7.9	33.53	8.1	24.6	2.41
A6	22 Oct 2018	15	16.16	82.13	7.9	33.53	8.1	24.6	2.35
A6	22 Oct 2018	16	16.13	82.10	7.8	33.53	8.1	24.6	2.34
A6	22 Oct 2018	17	16.10	82.16	7.8	33.53	8.1	24.6	2.26
A6	22 Oct 2018	18	16.03	82.29	7.8	33.54	8.1	24.6	2.21
A6	22 Oct 2018	19	15.95	82.51	7.7	33.54	8.1	24.6	2.05
A6	22 Oct 2018	20	15.88	83.02	7.6	33.54	8.1	24.6	1.87
A6	22 Oct 2018	21	15.74	83.59	7.5	33.54	8.1	24.7	1.59
A6	29 Oct 2018	1	17.73	84.98	7.8	33.60	8.1	24.3	0.80
A6	29 Oct 2018	2	17.70	84.84	7.8	33.60	8.1	24.3	0.78
A6	29 Oct 2018	3	17.65	84.77	7.8	33.60	8.1	24.3	0.81
A6	29 Oct 2018	4	17.49	84.69	7.7	33.60	8.1	24.3	0.84
A6	29 Oct 2018	5	17.26	84.36	7.8	33.58	8.1	24.4	0.86
A6	29 Oct 2018	6	16.92	84.35	7.6	33.59	8.1	24.4	0.87
A6	29 Oct 2018	7	16.45	84.96	7.4	33.57	8.1	24.5	0.87
A6	29 Oct 2018	8	16.14	85.16	7.6	33.55	8.1	24.6	0.77
A6	29 Oct 2018	9	16.03	85.15	7.3	33.55	8.1	24.6	0.70
A6	29 Oct 2018	10	15.71	85.30	7.3	33.55	8.0	24.7	0.60
A6	29 Oct 2018	11	15.58	85.43	7.2	33.54	8.0	24.7	0.56
A6	29 Oct 2018	12	15.13	85.68	7.3	33.53	8.0	24.8	0.59
A6	29 Oct 2018	13	14.99	85.75	7.2	33.53	8.0	24.8	0.64
A6	29 Oct 2018	14	14.71	85.83	7.1	33.53	8.0	24.9	0.57
A6	29 Oct 2018	15	14.52	86.01	7.1	33.53	8.0	24.9	0.55
A6	29 Oct 2018	16	14.23	86.09	7.0	33.53	8.0	25.0	0.56
A6	29 Oct 2018	17	14.19	86.02	7.0	33.52	8.0	25.0	0.57
A6	29 Oct 2018	18	14.18	85.64	7.0	33.52	8.0	25.0	0.53
A6	29 Oct 2018	19	14.18	85.35	7.0	33.52	8.0	25.0	0.52
A6	29 Oct 2018	20	14.19	85.42	7.0	33.52	8.0	25.0	0.53
A7	01 Oct 2018	1	19.36	83.64	8.1	33.64	8.2	23.9	0.82
A7	01 Oct 2018	2	19.10	83.76	7.9	33.64	8.2	24.0	0.88
A7	01 Oct 2018	3	17.90	83.25	8.0	33.62	8.1	24.2	1.14
A7	01 Oct 2018	4	16.30	82.81	8.3	33.58	8.1	24.6	1.42
A7	01 Oct 2018	5	15.84	82.69	8.5	33.53	8.1	24.7	1.60
A7	01 Oct 2018	6	15.84	83.03	8.5	33.52	8.1	24.6	1.67
A7	01 Oct 2018	7	15.80	83.03	8.4	33.52	8.1	24.7	1.70
A7	01 Oct 2018	8	15.76	83.14	8.3	33.52	8.1	24.7	1.72
A7	01 Oct 2018	9	15.74	83.33	8.3	33.52	8.1	24.7	1.71
A7	01 Oct 2018	10	15.73	83.31	8.2	33.53	8.1	24.7	1.64

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	01 Oct 2018	11	15.62	84.02	8.0	33.54	8.1	24.7	1.43
A7	01 Oct 2018	12	15.49	84.79	7.8	33.54	8.1	24.7	1.14
A7	01 Oct 2018	13	15.33	85.16	7.8	33.54	8.1	24.8	0.98
A7	01 Oct 2018	14	15.26	85.33	7.7	33.54	8.1	24.8	0.83
A7	01 Oct 2018	15	15.22	85.44	7.6	33.53	8.1	24.8	0.76
A7	01 Oct 2018	16	14.95	85.36	7.6	33.53	8.1	24.9	0.73
A7	01 Oct 2018	17	14.63	85.32	7.5	33.53	8.1	24.9	0.70
A7	01 Oct 2018	18	14.34	85.29	7.4	33.53	8.1	25.0	0.74
A7	01 Oct 2018	19	13.99	85.49	7.4	33.52	8.0	25.0	0.73
A7	01 Oct 2018	20	13.99	85.01	7.4	33.51	8.0	25.0	0.83
A7	08 Oct 2018	1	18.86	82.45	8.1	33.56	8.1	24.0	1.04
A7	08 Oct 2018	2	18.86	82.53	8.1	33.56	8.1	24.0	1.05
A7	08 Oct 2018	3	18.86	82.57	8.1	33.56	8.1	24.0	1.09
A7	08 Oct 2018	4	18.85	82.51	8.1	33.56	8.1	24.0	1.21
A7	08 Oct 2018	5	18.64	81.99	8.1	33.55	8.1	24.0	1.39
A7	08 Oct 2018	6	18.34	81.24	8.1	33.55	8.1	24.1	1.52
A7	08 Oct 2018	7	17.96	81.50	8.2	33.54	8.1	24.2	1.55
A7	08 Oct 2018	8	17.77	81.22	8.1	33.54	8.1	24.2	1.62
A7	08 Oct 2018	9	17.52	81.27	8.1	33.54	8.1	24.3	1.71
A7	08 Oct 2018	10	17.12	81.70	8.0	33.53	8.1	24.4	1.63
A7	08 Oct 2018	11	16.76	81.86	7.9	33.53	8.1	24.4	1.25
A7	08 Oct 2018	12	16.45	82.21	7.8	33.52	8.1	24.5	1.00
A7	08 Oct 2018	13	15.72	83.21	7.8	33.52	8.1	24.7	0.80
A7	08 Oct 2018	14	15.25	84.59	7.9	33.50	8.1	24.8	0.67
A7	08 Oct 2018	15	15.12	84.67	7.8	33.51	8.1	24.8	0.65
A7	08 Oct 2018	16	15.08	84.75	7.8	33.50	8.1	24.8	0.65
A7	08 Oct 2018	17	15.06	84.67	7.8	33.51	8.1	24.8	0.62
A7	08 Oct 2018	18	15.04	84.62	7.8	33.51	8.1	24.8	0.62
A7	08 Oct 2018	19	15.02	84.37	7.8	33.51	8.1	24.8	0.57
A7	15 Oct 2018	1	18.61	75.11	7.8	33.56	8.1	24.0	0.83
A7	15 Oct 2018	2	18.53	76.41	8.0	33.56	8.1	24.0	0.90
A7	15 Oct 2018	3	18.54	80.05	7.9	33.56	8.1	24.0	0.95
A7	15 Oct 2018	4	18.03	82.34	8.0	33.56	8.2	24.2	1.02
A7	15 Oct 2018	5	17.48	83.76	7.9	33.53	8.2	24.3	1.04
A7	15 Oct 2018	6	16.97	83.96	7.9	33.53	8.1	24.4	1.01
A7	15 Oct 2018	7	16.69	84.41	7.9	33.53	8.1	24.5	0.99
A7	15 Oct 2018	8	16.75	84.05	7.9	33.52	8.1	24.4	1.02
A7	15 Oct 2018	9	16.61	84.32	7.9	33.52	8.1	24.5	1.10
A7	15 Oct 2018	10	16.50	84.38	7.9	33.53	8.1	24.5	1.15
A7	15 Oct 2018	11	16.47	84.49	7.8	33.52	8.1	24.5	1.17
A7	15 Oct 2018	12	16.25	84.77	7.8	33.53	8.1	24.6	0.97
A7	15 Oct 2018	13	16.18	84.86	7.7	33.53	8.1	24.6	0.85
A7	15 Oct 2018	14	16.01	84.92	7.7	33.53	8.1	24.6	0.84
A7	15 Oct 2018	15	15.88	84.96	7.6	33.52	8.1	24.6	0.77
A7	15 Oct 2018	16	15.48	84.83	7.6	33.52	8.1	24.7	0.70
A7	15 Oct 2018	17	15.57	84.84	7.6	33.52	8.1	24.7	0.73
A7	15 Oct 2018	18	15.44	84.70	7.6	33.52	8.1	24.7	0.79
A7	15 Oct 2018	19	15.44	84.84	7.6	33.52	8.1	24.7	0.75
A7	22 Oct 2018	1	18.45	85.44	8.3	33.62	8.1	24.1	0.76
A7	22 Oct 2018	2	18.45	85.39	8.3	33.62	8.1	24.1	0.80
A7	22 Oct 2018	3	18.45	85.38	8.3	33.62	8.1	24.1	0.86
A7	22 Oct 2018	4	18.45	85.36	8.3	33.62	8.1	24.1	0.86

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
A7	22 Oct 2018	5	18.42	85.22	8.2	33.62	8.1	24.1	0.90
A7	22 Oct 2018	6	18.19	84.84	8.1	33.62	8.1	24.2	1.02
A7	22 Oct 2018	7	17.79	83.98	8.1	33.60	8.1	24.2	1.30
A7	22 Oct 2018	8	17.59	82.68	8.0	33.58	8.1	24.3	1.54
A7	22 Oct 2018	9	17.19	81.19	7.9	33.57	8.1	24.4	1.82
A7	22 Oct 2018	10	16.75	80.72	7.8	33.55	8.1	24.5	2.20
A7	22 Oct 2018	11	16.60	80.36	7.8	33.55	8.1	24.5	2.45
A7	22 Oct 2018	12	16.53	80.51	7.9	33.54	8.1	24.5	2.45
A7	22 Oct 2018	13	16.50	80.87	7.9	33.54	8.1	24.5	2.50
A7	22 Oct 2018	14	16.48	80.99	7.9	33.54	8.1	24.5	2.52
A7	22 Oct 2018	15	16.40	80.89	7.7	33.54	8.1	24.5	2.42
A7	22 Oct 2018	16	16.30	81.11	7.7	33.54	8.1	24.6	2.28
A7	22 Oct 2018	17	16.31	81.31	7.6	33.54	8.1	24.6	2.19
A7	22 Oct 2018	18	15.93	81.65	7.5	33.54	8.0	24.6	2.01
A7	22 Oct 2018	19	15.56	83.27	7.5	33.53	8.0	24.7	1.66
A7	22 Oct 2018	20	15.26	84.35	7.4	33.53	8.0	24.8	1.34
A7	22 Oct 2018	21	15.23	84.31	7.5	33.52	8.0	24.8	1.17
A7	29 Oct 2018	1	17.56	76.81	7.6	33.58	8.1	24.3	0.89
A7	29 Oct 2018	2	17.61	77.29	7.7	33.59	8.1	24.3	0.89
A7	29 Oct 2018	3	17.60	79.17	7.6	33.59	8.1	24.3	0.90
A7	29 Oct 2018	4	17.55	79.08	7.5	33.59	8.1	24.3	0.92
A7	29 Oct 2018	5	17.50	78.89	7.4	33.59	8.1	24.3	0.90
A7	29 Oct 2018	6	17.38	80.07	7.4	33.60	8.1	24.3	1.52
A7	29 Oct 2018	7	17.15	80.56	7.4	33.58	8.0	24.4	1.18
A7	29 Oct 2018	8	16.68	80.82	7.4	33.56	8.0	24.5	0.89
A7	29 Oct 2018	9	16.32	81.85	7.5	33.55	8.1	24.6	0.81
A7	29 Oct 2018	10	16.32	83.78	7.5	33.55	8.1	24.6	0.78
A7	29 Oct 2018	11	16.11	84.08	7.5	33.55	8.1	24.6	0.79
A7	29 Oct 2018	12	16.00	84.20	7.4	33.54	8.1	24.6	0.75
A7	29 Oct 2018	13	15.66	84.25	7.4	33.54	8.0	24.7	0.77
A7	29 Oct 2018	14	15.51	84.28	7.4	33.53	8.0	24.7	0.76
A7	29 Oct 2018	15	15.50	85.13	7.3	33.53	8.0	24.7	0.78
A7	29 Oct 2018	16	15.18	85.29	7.3	33.53	8.0	24.8	0.75
A7	29 Oct 2018	17	14.96	85.34	7.2	33.52	8.0	24.8	0.66
A7	29 Oct 2018	18	14.70	85.33	7.1	33.53	8.0	24.9	0.55
A7	29 Oct 2018	19	14.59	85.08	7.0	33.53	8.0	24.9	0.47
C4	01 Oct 2018	1	19.03	79.63	7.9	33.64	8.2	24.0	0.54
C4	01 Oct 2018	2	18.97	79.64	7.9	33.64	8.2	24.0	0.59
C4	01 Oct 2018	3	18.90	79.75	7.9	33.64	8.2	24.0	0.65
C4	01 Oct 2018	4	18.86	79.73	7.8	33.64	8.2	24.0	0.64
C4	01 Oct 2018	5	18.59	77.55	7.7	33.63	8.2	24.1	0.65
C4	01 Oct 2018	6	18.15	69.67	7.4	33.62	8.1	24.2	0.62
C4	01 Oct 2018	7	17.70	73.06	7.1	33.61	8.1	24.3	0.56
C4	01 Oct 2018	8	16.84	73.71	6.7	33.57	8.1	24.5	0.45
C4	01 Oct 2018	9	15.52	71.80	6.6	33.56	8.1	24.7	0.41
C4	01 Oct 2018	10	14.87	65.61	6.5	33.53	8.1	24.9	0.41
C4	01 Oct 2018	11	14.72	56.87	6.7	33.51	8.0	24.9	0.40
C4	08 Oct 2018	1	19.00	80.89	8.2	33.56	8.2	23.9	0.74
C4	08 Oct 2018	2	19.01	80.82	8.2	33.56	8.2	23.9	0.78
C4	08 Oct 2018	3	18.99	80.84	8.2	33.56	8.2	23.9	0.86
C4	08 Oct 2018	4	18.94	80.78	8.2	33.56	8.2	23.9	1.07
C4	08 Oct 2018	5	18.88	80.76	8.1	33.55	8.2	23.9	1.22

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C4	08 Oct 2018	6	18.73	80.71	8.0	33.55	8.2	24.0	1.40
C4	08 Oct 2018	7	18.56	80.47	7.7	33.55	8.2	24.0	1.52
C4	08 Oct 2018	8	18.20	80.05	7.3	33.55	8.1	24.1	1.45
C4	08 Oct 2018	9	17.86	78.82	6.7	33.54	8.1	24.2	1.13
C4	08 Oct 2018	10	17.55	71.60	6.4	33.54	8.1	24.3	0.73
C4	08 Oct 2018	11	17.52	60.30	6.3	33.53	8.0	24.3	0.54
C4	08 Oct 2018	12	17.52	60.18	6.3	33.53	8.0	24.3	0.51
C4	15 Oct 2018	1	18.79	65.69	7.3	33.57	8.1	24.0	0.91
C4	15 Oct 2018	2	18.79	67.69	7.2	33.57	8.1	24.0	1.02
C4	15 Oct 2018	3	18.74	68.35	7.2	33.57	8.1	24.0	1.10
C4	15 Oct 2018	4	18.60	68.64	7.0	33.57	8.1	24.0	1.10
C4	15 Oct 2018	5	18.44	69.27	6.8	33.56	8.1	24.1	0.97
C4	15 Oct 2018	6	18.22	69.80	6.7	33.56	8.1	24.1	0.83
C4	15 Oct 2018	7	17.89	70.06	6.6	33.55	8.1	24.2	0.71
C4	15 Oct 2018	8	17.50	65.50	6.6	33.55	8.1	24.3	0.62
C4	15 Oct 2018	9	17.11	54.68	6.6	33.54	8.1	24.4	0.62
C4	15 Oct 2018	10	16.91	35.87	6.7	33.53	8.1	24.4	0.74
C4	22 Oct 2018	1	18.43	74.70	7.8	33.59	8.1	24.1	0.84
C4	22 Oct 2018	2	18.28	74.68	7.7	33.59	8.1	24.1	0.97
C4	22 Oct 2018	3	18.00	74.56	7.6	33.59	8.1	24.2	1.12
C4	22 Oct 2018	4	17.79	74.19	7.4	33.58	8.1	24.2	1.20
C4	22 Oct 2018	5	17.63	73.95	7.1	33.58	8.1	24.3	1.12
C4	22 Oct 2018	6	17.50	73.75	6.9	33.57	8.0	24.3	1.06
C4	22 Oct 2018	7	17.30	73.51	6.7	33.57	8.0	24.3	0.95
C4	22 Oct 2018	8	17.02	73.87	6.4	33.57	8.0	24.4	0.87
C4	22 Oct 2018	9	16.63	74.22	6.2	33.56	8.0	24.5	0.72
C4	22 Oct 2018	10	16.30	73.51	6.0	33.55	8.0	24.6	0.60
C4	22 Oct 2018	11	16.22	71.20	6.0	33.55	8.0	24.6	0.52
C4	29 Oct 2018	1	17.54	78.84	7.8	33.58	8.1	24.3	1.20
C4	29 Oct 2018	2	17.54	78.66	7.8	33.58	8.1	24.3	1.21
C4	29 Oct 2018	3	17.53	78.65	7.8	33.58	8.1	24.3	1.27
C4	29 Oct 2018	4	17.52	78.55	7.8	33.58	8.1	24.3	1.35
C4	29 Oct 2018	5	17.47	78.54	7.7	33.58	8.1	24.3	1.38
C4	29 Oct 2018	6	17.28	78.67	7.7	33.58	8.1	24.4	1.24
C4	29 Oct 2018	7	16.94	79.35	7.7	33.58	8.1	24.4	1.13
C4	29 Oct 2018	8	16.53	80.42	7.5	33.57	8.1	24.5	0.98
C4	29 Oct 2018	9	16.00	80.27	6.9	33.55	8.1	24.6	0.75
C4	29 Oct 2018	10	15.61	70.65	6.4	33.53	8.0	24.7	0.50
C4	29 Oct 2018	11	15.59	63.21	6.3	33.52	8.0	24.7	0.42
C5	01 Oct 2018	1	18.90	82.79	8.3	33.64	8.2	24.0	0.86
C5	01 Oct 2018	2	18.90	83.23	8.3	33.64	8.2	24.0	0.89
C5	01 Oct 2018	3	18.88	83.21	8.3	33.64	8.2	24.0	0.98
C5	01 Oct 2018	4	18.83	82.85	8.3	33.64	8.2	24.0	1.13
C5	01 Oct 2018	5	18.67	82.74	8.2	33.63	8.2	24.1	1.28
C5	01 Oct 2018	6	18.40	82.73	8.1	33.63	8.2	24.1	1.44
C5	01 Oct 2018	7	17.98	82.93	7.8	33.62	8.2	24.2	1.22
C5	01 Oct 2018	8	17.11	83.42	7.8	33.60	8.1	24.4	0.92
C5	01 Oct 2018	9	16.37	83.50	7.6	33.58	8.1	24.6	0.68
C5	01 Oct 2018	10	15.76	83.15	7.6	33.55	8.1	24.7	0.49
C5	01 Oct 2018	11	15.38	79.67	7.6	33.53	8.1	24.8	0.56

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C5	08 Oct 2018	1	19.06	71.94	7.4	33.57	8.1	23.9	0.79
C5	08 Oct 2018	2	19.05	71.78	7.4	33.57	8.1	23.9	0.82
C5	08 Oct 2018	3	19.02	71.92	7.4	33.57	8.1	23.9	1.06
C5	08 Oct 2018	4	18.99	71.40	7.4	33.57	8.1	23.9	1.37
C5	08 Oct 2018	5	18.97	70.68	7.4	33.57	8.1	23.9	1.41
C5	08 Oct 2018	6	18.95	71.50	7.3	33.57	8.1	23.9	1.35
C5	08 Oct 2018	7	18.94	71.90	7.2	33.57	8.1	23.9	1.24
C5	08 Oct 2018	8	18.69	72.85	7.1	33.57	8.1	24.0	0.86
C5	08 Oct 2018	9	18.36	75.79	7.1	33.56	8.1	24.1	0.65
C5	08 Oct 2018	10	17.91	78.72	6.9	33.56	8.1	24.2	0.53
C5	08 Oct 2018	11	17.55	76.42	6.4	33.56	8.1	24.3	0.41
C5	15 Oct 2018	1	19.24	64.35	7.0	33.58	8.0	23.9	0.48
C5	15 Oct 2018	2	19.10	64.19	7.1	33.59	8.0	23.9	0.63
C5	15 Oct 2018	3	19.04	63.30	7.1	33.58	8.1	23.9	0.75
C5	15 Oct 2018	4	18.86	66.08	7.0	33.58	8.1	24.0	0.73
C5	15 Oct 2018	5	18.60	69.78	6.8	33.57	8.1	24.0	0.69
C5	15 Oct 2018	6	18.20	72.04	6.8	33.57	8.1	24.1	0.65
C5	15 Oct 2018	7	17.91	71.66	6.9	33.56	8.1	24.2	0.65
C5	15 Oct 2018	8	17.53	43.18	6.5	33.55	8.1	24.3	0.79
C5	15 Oct 2018	9	17.48	21.72	6.4	33.55	8.1	24.3	1.21
C5	22 Oct 2018	1	18.75	70.99	7.8	33.60	8.1	24.0	0.71
C5	22 Oct 2018	2	18.74	71.48	7.8	33.60	8.1	24.0	0.84
C5	22 Oct 2018	3	18.70	70.19	7.9	33.60	8.1	24.0	0.95
C5	22 Oct 2018	4	18.67	71.15	7.8	33.60	8.1	24.0	0.96
C5	22 Oct 2018	5	18.04	77.88	7.6	33.60	8.1	24.2	0.93
C5	22 Oct 2018	6	17.53	81.60	7.3	33.58	8.1	24.3	0.85
C5	22 Oct 2018	7	17.17	81.70	7.4	33.57	8.1	24.4	1.00
C5	22 Oct 2018	8	17.09	82.21	7.5	33.56	8.1	24.4	1.28
C5	22 Oct 2018	9	16.95	82.83	7.4	33.56	8.1	24.4	1.33
C5	22 Oct 2018	10	16.85	83.60	7.2	33.56	8.1	24.4	1.04
C5	22 Oct 2018	11	16.74	80.72	7.0	33.55	8.0	24.5	0.80
C5	29 Oct 2018	1	17.85	60.60	6.6	33.58	8.0	24.2	0.61
C5	29 Oct 2018	2	17.85	60.49	6.6	33.58	8.0	24.2	0.65
C5	29 Oct 2018	3	17.68	60.58	6.8	33.57	8.0	24.3	0.68
C5	29 Oct 2018	4	17.58	64.60	6.9	33.57	8.0	24.3	0.64
C5	29 Oct 2018	5	17.51	67.29	6.8	33.57	8.0	24.3	0.59
C5	29 Oct 2018	6	17.35	68.15	6.7	33.57	8.0	24.3	0.58
C5	29 Oct 2018	7	17.13	70.72	6.6	33.56	8.0	24.4	0.54
C5	29 Oct 2018	8	16.77	73.65	6.7	33.56	8.0	24.5	0.48
C5	29 Oct 2018	9	16.70	74.39	6.7	33.55	8.0	24.5	0.47
C5	29 Oct 2018	10	16.27	74.58	6.5	33.55	8.0	24.6	0.45
C5	29 Oct 2018	11	15.93	71.35	6.5	33.54	8.0	24.6	0.52
C6	01 Oct 2018	1	18.99	83.72	8.3	33.63	8.2	24.0	0.86
C6	01 Oct 2018	2	19.01	83.84	8.3	33.64	8.2	24.0	0.94
C6	01 Oct 2018	3	19.00	83.81	8.3	33.64	8.2	24.0	0.98
C6	01 Oct 2018	4	18.99	83.77	8.3	33.64	8.2	24.0	0.97
C6	01 Oct 2018	5	18.95	83.65	8.2	33.64	8.2	24.0	1.03
C6	01 Oct 2018	6	18.67	83.48	8.0	33.63	8.2	24.1	1.30
C6	01 Oct 2018	7	17.53	82.24	7.8	33.61	8.2	24.3	1.19
C6	01 Oct 2018	8	16.60	83.51	7.7	33.58	8.1	24.5	0.75
C6	01 Oct 2018	9	15.84	82.95	7.7	33.55	8.1	24.7	0.51

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C6	01 Oct 2018	10	15.67	79.96	7.9	33.52	8.1	24.7	0.39
C6	08 Oct 2018	1	19.25	73.48	7.7	33.59	8.1	23.9	0.72
C6	08 Oct 2018	2	19.24	74.81	7.7	33.59	8.1	23.9	0.81
C6	08 Oct 2018	3	19.20	74.99	7.7	33.59	8.1	23.9	0.91
C6	08 Oct 2018	4	19.07	75.22	7.9	33.58	8.2	23.9	1.19
C6	08 Oct 2018	5	18.87	76.23	7.9	33.57	8.2	24.0	1.44
C6	08 Oct 2018	6	18.63	77.10	7.9	33.57	8.2	24.0	1.54
C6	08 Oct 2018	7	18.39	78.04	7.8	33.56	8.2	24.1	1.43
C6	08 Oct 2018	8	18.14	79.19	7.7	33.55	8.1	24.1	1.10
C6	08 Oct 2018	9	17.95	80.62	7.4	33.55	8.1	24.2	0.86
C6	08 Oct 2018	10	17.58	79.67	7.1	33.55	8.1	24.3	0.63
C6	08 Oct 2018	11	17.18	77.23	6.9	33.54	8.1	24.4	0.42
C6	15 Oct 2018	1	19.15	70.21	7.2	33.58	8.1	23.9	0.60
C6	15 Oct 2018	2	19.01	69.98	7.5	33.58	8.1	23.9	0.69
C6	15 Oct 2018	3	18.88	72.16	7.7	33.57	8.2	24.0	0.79
C6	15 Oct 2018	4	18.55	74.02	7.6	33.56	8.1	24.0	0.84
C6	15 Oct 2018	5	18.18	74.17	7.4	33.56	8.1	24.1	0.72
C6	15 Oct 2018	6	17.71	76.10	7.2	33.55	8.1	24.2	0.46
C6	15 Oct 2018	7	17.40	76.93	6.9	33.55	8.1	24.3	0.35
C6	15 Oct 2018	8	17.13	77.04	6.8	33.54	8.1	24.4	0.29
C6	15 Oct 2018	9	16.77	76.97	7.0	33.54	8.1	24.4	0.23
C6	15 Oct 2018	10	16.73	76.73	7.1	33.53	8.1	24.4	0.23
C6	22 Oct 2018	1	18.74	83.67	8.2	33.62	8.1	24.0	0.47
C6	22 Oct 2018	2	18.65	83.67	8.3	33.61	8.1	24.0	0.50
C6	22 Oct 2018	3	18.55	84.10	8.4	33.60	8.1	24.1	0.55
C6	22 Oct 2018	4	18.38	84.65	8.4	33.60	8.2	24.1	0.65
C6	22 Oct 2018	5	18.09	84.48	8.1	33.59	8.1	24.2	0.78
C6	22 Oct 2018	6	17.75	83.53	7.8	33.58	8.1	24.2	0.79
C6	22 Oct 2018	7	17.54	82.52	7.6	33.57	8.1	24.3	0.77
C6	22 Oct 2018	8	17.29	82.43	7.4	33.57	8.1	24.3	0.68
C6	22 Oct 2018	9	17.18	82.14	7.2	33.56	8.1	24.4	0.56
C6	22 Oct 2018	10	17.09	79.51	7.0	33.55	8.0	24.4	0.46
C6	29 Oct 2018	1	17.68	77.91	7.8	33.58	8.1	24.3	1.08
C6	29 Oct 2018	2	17.68	77.19	7.8	33.58	8.1	24.3	1.15
C6	29 Oct 2018	3	17.67	77.30	7.8	33.58	8.1	24.3	1.18
C6	29 Oct 2018	4	17.67	77.43	7.7	33.58	8.1	24.3	1.19
C6	29 Oct 2018	5	17.63	78.12	7.6	33.58	8.1	24.3	1.15
C6	29 Oct 2018	6	17.48	77.96	7.4	33.57	8.1	24.3	0.97
C6	29 Oct 2018	7	17.36	78.48	7.2	33.57	8.1	24.3	0.83
C6	29 Oct 2018	8	17.00	77.97	6.8	33.55	8.0	24.4	0.67
C6	29 Oct 2018	9	16.22	76.99	6.5	33.56	8.0	24.6	0.54
C6	29 Oct 2018	10	16.08	74.55	6.4	33.54	8.0	24.6	0.44
C7	01 Oct 2018	1	19.32	83.25	8.2	33.65	8.2	23.9	0.77
C7	01 Oct 2018	2	19.28	83.39	8.2	33.65	8.2	23.9	0.83
C7	01 Oct 2018	3	19.04	83.14	8.2	33.65	8.2	24.0	1.04
C7	01 Oct 2018	4	18.96	82.59	8.2	33.64	8.2	24.0	1.19
C7	01 Oct 2018	5	18.88	82.59	8.2	33.64	8.2	24.0	1.30
C7	01 Oct 2018	6	18.68	82.67	8.2	33.63	8.2	24.1	1.30
C7	01 Oct 2018	7	18.40	82.53	8.1	33.63	8.2	24.1	1.37
C7	01 Oct 2018	8	17.80	82.45	8.1	33.61	8.2	24.3	1.50

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	01 Oct 2018	9	16.73	82.50	8.2	33.59	8.1	24.5	1.78
C7	01 Oct 2018	10	16.10	82.53	8.2	33.56	8.1	24.6	1.97
C7	01 Oct 2018	11	15.58	83.22	8.1	33.55	8.1	24.7	1.93
C7	01 Oct 2018	12	15.15	83.46	8.0	33.53	8.1	24.8	1.81
C7	01 Oct 2018	13	14.70	84.11	7.8	33.52	8.1	24.9	1.52
C7	01 Oct 2018	14	14.26	84.73	7.6	33.51	8.1	25.0	1.13
C7	01 Oct 2018	15	13.89	85.29	7.5	33.51	8.1	25.1	0.96
C7	01 Oct 2018	16	13.80	85.23	7.4	33.50	8.0	25.1	0.79
C7	01 Oct 2018	17	13.75	85.40	7.3	33.50	8.0	25.1	0.74
C7	01 Oct 2018	18	13.65	85.08	7.2	33.51	8.0	25.1	0.74
C7	01 Oct 2018	19	13.66	84.54	7.2	33.51	8.0	25.1	0.72
C7	08 Oct 2018	1	19.02	79.77	8.2	33.57	8.2	23.9	0.92
C7	08 Oct 2018	2	18.99	80.29	8.2	33.57	8.2	23.9	1.01
C7	08 Oct 2018	3	18.90	80.38	8.2	33.57	8.2	24.0	1.12
C7	08 Oct 2018	4	18.40	80.49	8.1	33.55	8.2	24.1	1.28
C7	08 Oct 2018	5	17.99	80.88	8.2	33.54	8.2	24.2	1.33
C7	08 Oct 2018	6	17.65	81.72	8.2	33.53	8.1	24.2	1.43
C7	08 Oct 2018	7	17.26	81.92	8.2	33.52	8.1	24.3	1.64
C7	08 Oct 2018	8	16.82	81.38	8.3	33.52	8.1	24.4	1.73
C7	08 Oct 2018	9	16.69	81.61	8.2	33.51	8.1	24.4	1.69
C7	08 Oct 2018	10	16.32	81.95	8.1	33.51	8.1	24.5	1.36
C7	08 Oct 2018	11	16.07	82.80	8.1	33.51	8.1	24.6	1.13
C7	08 Oct 2018	12	15.91	83.36	8.0	33.51	8.1	24.6	1.04
C7	08 Oct 2018	13	15.64	83.78	8.0	33.51	8.1	24.7	0.85
C7	08 Oct 2018	14	15.55	83.95	7.9	33.51	8.1	24.7	0.72
C7	08 Oct 2018	15	15.53	83.69	7.9	33.51	8.1	24.7	0.67
C7	08 Oct 2018	16	15.53	84.00	7.9	33.51	8.1	24.7	0.63
C7	08 Oct 2018	17	15.54	83.70	7.9	33.51	8.1	24.7	0.61
C7	08 Oct 2018	18	15.54	83.63	7.8	33.51	8.1	24.7	0.57
C7	08 Oct 2018	19	15.54	83.77	7.8	33.52	8.1	24.7	0.51
C7	15 Oct 2018	1	18.41	80.04	7.6	33.56	8.1	24.1	0.55
C7	15 Oct 2018	2	18.15	80.10	7.7	33.56	8.1	24.1	0.61
C7	15 Oct 2018	3	17.32	80.90	8.0	33.55	8.2	24.3	0.79
C7	15 Oct 2018	4	17.31	82.76	8.0	33.54	8.2	24.3	0.91
C7	15 Oct 2018	5	16.86	83.49	8.1	33.53	8.2	24.4	1.08
C7	15 Oct 2018	6	16.83	83.81	8.1	33.53	8.2	24.4	1.19
C7	15 Oct 2018	7	16.77	83.93	8.1	33.53	8.2	24.4	1.25
C7	15 Oct 2018	8	16.66	83.88	8.1	33.53	8.2	24.5	1.34
C7	15 Oct 2018	9	16.63	83.87	8.1	33.53	8.2	24.5	1.36
C7	15 Oct 2018	10	16.61	84.13	8.1	33.53	8.2	24.5	1.43
C7	15 Oct 2018	11	16.54	84.04	8.1	33.53	8.2	24.5	1.45
C7	15 Oct 2018	12	16.45	84.06	8.1	33.53	8.2	24.5	1.42
C7	15 Oct 2018	13	16.38	84.20	8.0	33.53	8.2	24.5	1.49
C7	15 Oct 2018	14	16.26	84.24	7.9	33.53	8.2	24.6	1.56
C7	15 Oct 2018	15	16.04	84.34	7.8	33.53	8.1	24.6	1.19
C7	15 Oct 2018	16	15.87	84.55	7.8	33.53	8.1	24.6	1.08
C7	15 Oct 2018	17	15.74	84.73	7.7	33.53	8.1	24.7	0.95
C7	15 Oct 2018	18	15.67	84.73	7.7	33.53	8.1	24.7	0.77
C7	22 Oct 2018	1	18.51	87.24	8.1	33.63	8.1	24.1	0.43
C7	22 Oct 2018	2	18.44	87.14	8.1	33.63	8.1	24.1	0.53
C7	22 Oct 2018	3	18.35	86.91	8.1	33.62	8.1	24.1	0.62
C7	22 Oct 2018	4	18.25	86.88	8.2	33.62	8.1	24.1	0.59

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C7	22 Oct 2018	5	18.10	86.87	8.2	33.61	8.1	24.2	0.56
C7	22 Oct 2018	6	17.82	86.63	8.1	33.60	8.1	24.2	0.65
C7	22 Oct 2018	7	17.69	86.01	8.1	33.59	8.1	24.3	0.80
C7	22 Oct 2018	8	17.65	85.65	8.1	33.59	8.1	24.3	0.97
C7	22 Oct 2018	9	17.40	85.11	8.0	33.59	8.1	24.3	1.14
C7	22 Oct 2018	10	17.08	84.57	7.9	33.57	8.1	24.4	1.33
C7	22 Oct 2018	11	16.72	84.17	8.0	33.56	8.1	24.5	1.51
C7	22 Oct 2018	12	16.68	84.29	8.0	33.55	8.1	24.5	1.59
C7	22 Oct 2018	13	16.63	84.13	8.0	33.55	8.1	24.5	1.64
C7	22 Oct 2018	14	16.48	83.87	7.9	33.55	8.1	24.5	1.70
C7	22 Oct 2018	15	16.26	83.90	7.8	33.55	8.1	24.6	1.69
C7	22 Oct 2018	16	16.08	84.73	7.7	33.54	8.1	24.6	1.57
C7	22 Oct 2018	17	15.78	85.05	7.5	33.54	8.1	24.7	1.33
C7	22 Oct 2018	18	15.30	85.65	7.4	33.54	8.0	24.8	1.00
C7	22 Oct 2018	19	15.22	85.66	7.4	33.52	8.0	24.8	0.79
C7	29 Oct 2018	1	18.00	83.34	7.8	33.61	8.1	24.2	1.02
C7	29 Oct 2018	2	17.97	82.71	7.8	33.61	8.1	24.2	1.10
C7	29 Oct 2018	3	17.82	82.88	7.8	33.60	8.1	24.2	1.21
C7	29 Oct 2018	4	17.66	82.26	7.8	33.59	8.1	24.3	1.27
C7	29 Oct 2018	5	17.53	82.47	7.8	33.59	8.1	24.3	1.33
C7	29 Oct 2018	6	17.39	82.74	7.8	33.58	8.1	24.3	1.37
C7	29 Oct 2018	7	17.20	82.68	7.8	33.58	8.1	24.4	1.32
C7	29 Oct 2018	8	16.97	83.10	7.7	33.57	8.1	24.4	1.29
C7	29 Oct 2018	9	16.69	83.77	7.7	33.56	8.1	24.5	1.33
C7	29 Oct 2018	10	16.34	84.22	7.8	33.55	8.1	24.6	1.42
C7	29 Oct 2018	11	16.11	84.68	7.8	33.54	8.1	24.6	1.48
C7	29 Oct 2018	12	15.96	84.78	7.8	33.54	8.1	24.6	1.41
C7	29 Oct 2018	13	15.91	84.95	7.7	33.53	8.1	24.6	1.35
C7	29 Oct 2018	14	15.86	84.73	7.6	33.54	8.1	24.7	1.33
C7	29 Oct 2018	15	15.80	84.99	7.6	33.54	8.1	24.7	1.22
C7	29 Oct 2018	16	15.72	85.11	7.4	33.54	8.1	24.7	1.05
C7	29 Oct 2018	17	15.50	85.21	7.2	33.54	8.1	24.7	0.83
C7	29 Oct 2018	18	15.03	83.95	7.0	33.53	8.0	24.8	0.54
C7	29 Oct 2018	19	15.12	83.20	7.0	33.52	8.0	24.8	0.46
C8	01 Oct 2018	1	19.16	83.06	8.2	33.63	8.2	23.9	0.79
C8	01 Oct 2018	2	19.21	83.18	8.1	33.64	8.2	23.9	0.83
C8	01 Oct 2018	3	18.72	83.18	8.2	33.63	8.2	24.0	0.95
C8	01 Oct 2018	4	18.26	82.99	8.4	33.61	8.2	24.1	1.06
C8	01 Oct 2018	5	17.87	82.66	8.5	33.59	8.2	24.2	1.16
C8	01 Oct 2018	6	17.76	82.47	8.5	33.58	8.1	24.2	1.23
C8	01 Oct 2018	7	17.69	82.51	8.5	33.58	8.1	24.3	1.29
C8	01 Oct 2018	8	17.65	82.52	8.4	33.58	8.1	24.3	1.30
C8	01 Oct 2018	9	17.28	82.55	8.2	33.58	8.1	24.4	1.48
C8	01 Oct 2018	10	16.55	82.17	8.1	33.56	8.1	24.5	1.90
C8	01 Oct 2018	11	15.60	82.15	8.0	33.54	8.1	24.7	1.98
C8	01 Oct 2018	12	14.77	83.21	7.9	33.52	8.1	24.9	1.66
C8	01 Oct 2018	13	14.44	84.44	7.7	33.51	8.1	24.9	1.28
C8	01 Oct 2018	14	14.17	84.62	7.6	33.50	8.1	25.0	1.07
C8	01 Oct 2018	15	14.04	84.66	7.5	33.50	8.1	25.0	0.94
C8	01 Oct 2018	16	13.93	85.03	7.5	33.50	8.0	25.0	0.82
C8	01 Oct 2018	17	13.86	85.02	7.4	33.50	8.0	25.1	0.80
C8	01 Oct 2018	18	13.85	85.05	7.3	33.50	8.0	25.1	0.78
C8	01 Oct 2018	19	13.86	85.05	7.4	33.51	8.0	25.1	0.70

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	01 Oct 2018	20	13.89	84.77	7.3	33.51	8.0	25.1	0.74
C8	08 Oct 2018	1	18.98	81.05	8.3	33.57	8.2	23.9	0.87
C8	08 Oct 2018	2	18.96	81.34	8.3	33.57	8.2	23.9	0.97
C8	08 Oct 2018	3	18.92	81.47	8.2	33.57	8.2	23.9	1.15
C8	08 Oct 2018	4	18.77	81.14	8.1	33.56	8.2	24.0	1.38
C8	08 Oct 2018	5	18.68	80.56	8.0	33.56	8.2	24.0	1.63
C8	08 Oct 2018	6	18.55	80.07	8.0	33.56	8.2	24.0	1.74
C8	08 Oct 2018	7	18.36	81.06	8.1	33.55	8.2	24.1	1.57
C8	08 Oct 2018	8	17.84	81.18	8.2	33.55	8.2	24.2	1.53
C8	08 Oct 2018	9	17.58	81.40	8.2	33.53	8.1	24.2	1.53
C8	08 Oct 2018	10	17.18	81.38	8.2	33.53	8.1	24.3	1.53
C8	08 Oct 2018	11	16.95	81.45	8.3	33.52	8.1	24.4	1.59
C8	08 Oct 2018	12	16.87	81.34	8.2	33.52	8.1	24.4	1.67
C8	08 Oct 2018	13	16.54	81.76	8.1	33.52	8.1	24.5	1.64
C8	08 Oct 2018	14	16.18	82.57	8.1	33.52	8.1	24.6	1.37
C8	08 Oct 2018	15	15.96	82.63	8.0	33.51	8.1	24.6	1.15
C8	08 Oct 2018	16	15.82	82.83	8.0	33.51	8.1	24.6	0.98
C8	08 Oct 2018	17	15.72	82.98	8.0	33.51	8.1	24.7	0.83
C8	08 Oct 2018	18	15.72	82.77	8.0	33.51	8.1	24.7	0.77
C8	08 Oct 2018	19	15.72	82.32	8.0	33.51	8.1	24.7	0.74
C8	08 Oct 2018	20	15.72	82.61	8.0	33.51	8.1	24.7	0.70
C8	15 Oct 2018	1	18.37	80.91	7.8	33.56	8.2	24.1	0.73
C8	15 Oct 2018	2	18.22	81.57	7.8	33.56	8.2	24.1	0.85
C8	15 Oct 2018	3	17.87	82.22	8.0	33.56	8.2	24.2	0.94
C8	15 Oct 2018	4	17.62	84.07	8.2	33.55	8.2	24.3	0.97
C8	15 Oct 2018	5	17.50	84.52	8.3	33.54	8.2	24.3	0.95
C8	15 Oct 2018	6	17.16	84.62	8.3	33.54	8.2	24.4	0.98
C8	15 Oct 2018	7	17.08	84.31	8.3	33.53	8.2	24.4	1.09
C8	15 Oct 2018	8	16.96	83.87	8.3	33.53	8.2	24.4	1.32
C8	15 Oct 2018	9	16.96	83.85	8.3	33.53	8.2	24.4	1.41
C8	15 Oct 2018	10	16.95	83.76	8.2	33.53	8.2	24.4	1.51
C8	15 Oct 2018	11	16.95	83.79	8.2	33.53	8.2	24.4	1.58
C8	15 Oct 2018	12	16.94	83.59	8.2	33.53	8.2	24.4	1.63
C8	15 Oct 2018	13	16.96	83.61	8.2	33.53	8.2	24.4	1.60
C8	15 Oct 2018	14	16.94	83.37	8.1	33.53	8.2	24.4	1.59
C8	15 Oct 2018	15	16.85	83.76	8.0	33.54	8.2	24.4	1.44
C8	15 Oct 2018	16	16.47	84.36	7.8	33.54	8.2	24.5	1.17
C8	15 Oct 2018	17	16.05	84.50	7.6	33.54	8.1	24.6	0.92
C8	15 Oct 2018	18	15.77	84.46	7.5	33.53	8.1	24.7	0.69
C8	15 Oct 2018	19	15.66	83.22	7.4	33.53	8.1	24.7	0.48
C8	22 Oct 2018	1	18.61	86.84	8.1	33.63	8.1	24.1	0.47
C8	22 Oct 2018	2	18.60	86.89	8.1	33.63	8.1	24.1	0.51
C8	22 Oct 2018	3	18.59	86.89	8.1	33.63	8.1	24.1	0.54
C8	22 Oct 2018	4	18.50	86.89	8.1	33.63	8.1	24.1	0.62
C8	22 Oct 2018	5	18.28	86.62	8.1	33.62	8.1	24.1	0.73
C8	22 Oct 2018	6	18.12	86.31	8.2	33.61	8.1	24.2	0.86
C8	22 Oct 2018	7	18.00	86.14	8.2	33.60	8.1	24.2	0.91
C8	22 Oct 2018	8	17.90	86.18	8.2	33.59	8.1	24.2	0.84
C8	22 Oct 2018	9	17.85	86.45	8.2	33.59	8.1	24.2	0.78
C8	22 Oct 2018	10	17.82	86.66	8.2	33.58	8.1	24.2	0.78
C8	22 Oct 2018	11	17.22	85.76	8.3	33.57	8.1	24.4	1.03
C8	22 Oct 2018	12	16.93	85.34	8.2	33.55	8.1	24.4	1.29

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
C8	22 Oct 2018	13	16.46	85.16	8.2	33.54	8.1	24.5	1.42
C8	22 Oct 2018	14	16.24	85.00	8.1	33.53	8.1	24.6	1.57
C8	22 Oct 2018	15	15.95	84.44	8.0	33.53	8.1	24.6	1.78
C8	22 Oct 2018	16	15.84	84.05	7.8	33.52	8.1	24.6	1.85
C8	22 Oct 2018	17	15.56	84.10	7.8	33.52	8.1	24.7	1.84
C8	22 Oct 2018	18	15.34	84.21	7.7	33.52	8.1	24.8	1.77
C8	22 Oct 2018	19	15.25	84.66	7.6	33.51	8.1	24.8	1.51
C8	22 Oct 2018	20	14.93	85.26	7.5	33.52	8.0	24.8	1.12
C8	29 Oct 2018	1	17.99	82.86	7.9	33.61	8.1	24.2	1.01
C8	29 Oct 2018	2	17.97	82.94	7.8	33.61	8.1	24.2	1.08
C8	29 Oct 2018	3	17.84	82.89	7.7	33.60	8.1	24.2	1.18
C8	29 Oct 2018	4	17.39	82.68	7.8	33.59	8.1	24.3	1.25
C8	29 Oct 2018	5	17.09	82.70	7.8	33.58	8.1	24.4	1.35
C8	29 Oct 2018	6	16.60	83.07	7.8	33.56	8.1	24.5	1.46
C8	29 Oct 2018	7	16.40	83.58	7.8	33.55	8.1	24.5	1.52
C8	29 Oct 2018	8	16.15	84.28	7.8	33.55	8.1	24.6	1.55
C8	29 Oct 2018	9	16.01	84.49	7.8	33.54	8.1	24.6	1.54
C8	29 Oct 2018	10	15.72	85.08	7.8	33.53	8.1	24.7	1.53
C8	29 Oct 2018	11	15.47	85.38	7.8	33.52	8.1	24.7	1.46
C8	29 Oct 2018	12	15.36	85.73	7.8	33.52	8.1	24.8	1.46
C8	29 Oct 2018	13	15.26	85.98	7.8	33.51	8.1	24.8	1.43
C8	29 Oct 2018	14	15.14	86.20	7.7	33.51	8.1	24.8	1.38
C8	29 Oct 2018	15	15.13	86.11	7.6	33.51	8.1	24.8	1.27
C8	29 Oct 2018	16	15.11	86.05	7.5	33.52	8.1	24.8	1.14
C8	29 Oct 2018	17	15.04	85.83	7.2	33.52	8.0	24.8	0.88
C8	29 Oct 2018	18	14.85	84.80	7.1	33.53	8.0	24.9	0.69
C8	29 Oct 2018	19	14.72	83.87	7.0	33.53	8.0	24.9	0.57
C8	29 Oct 2018	20	14.68	83.44	7.0	33.52	8.0	24.9	0.55

NA = not available

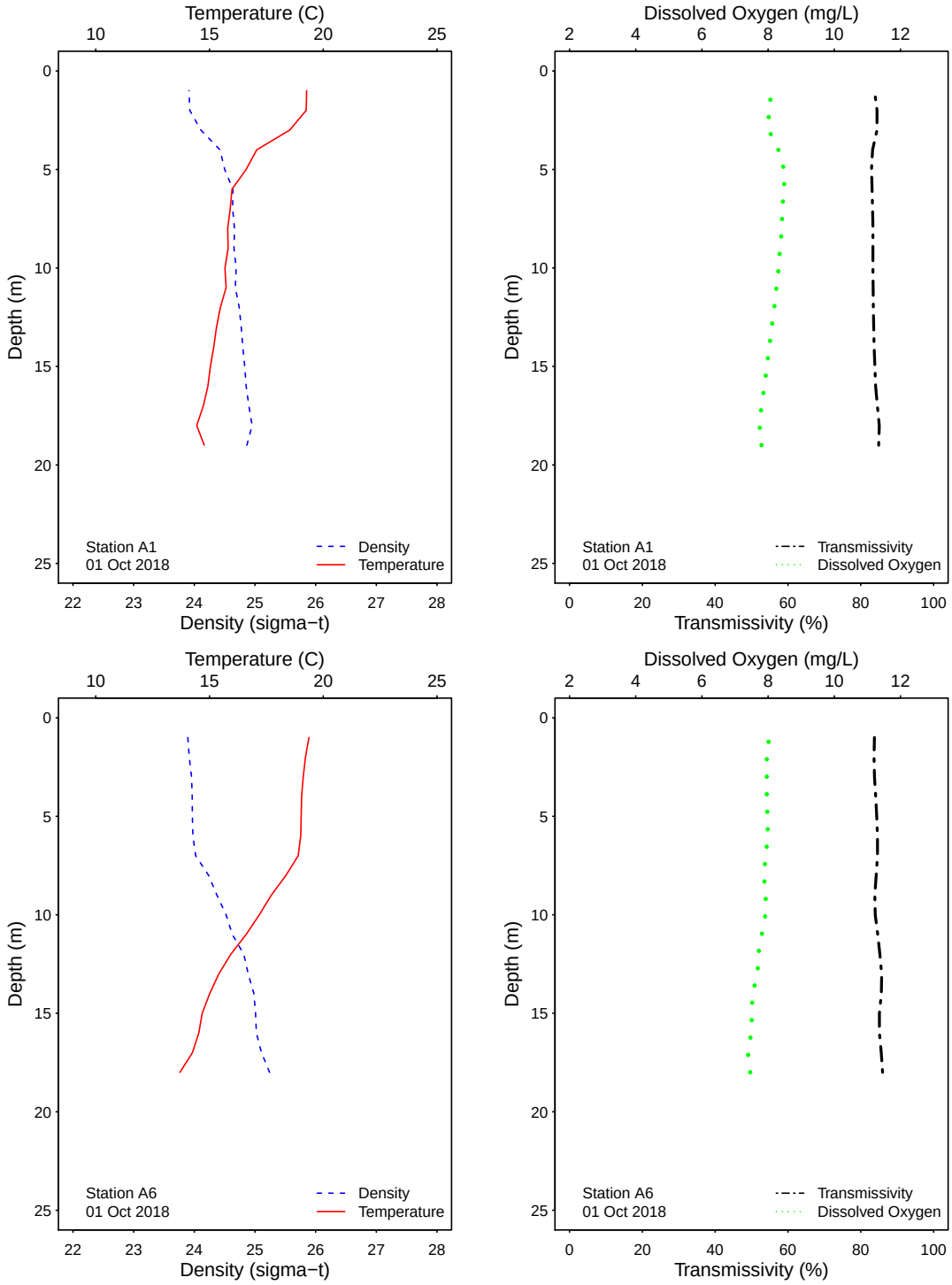


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

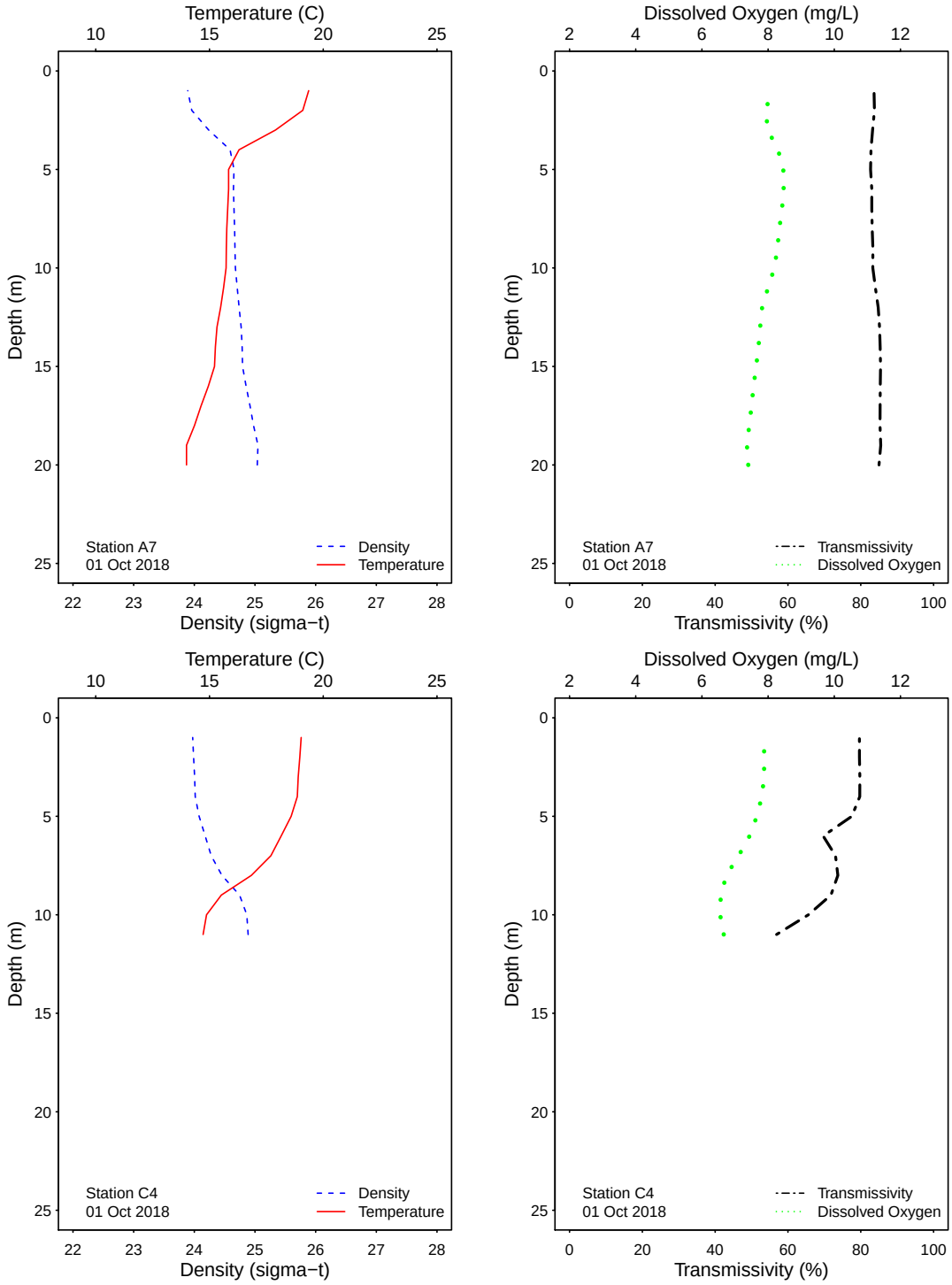


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

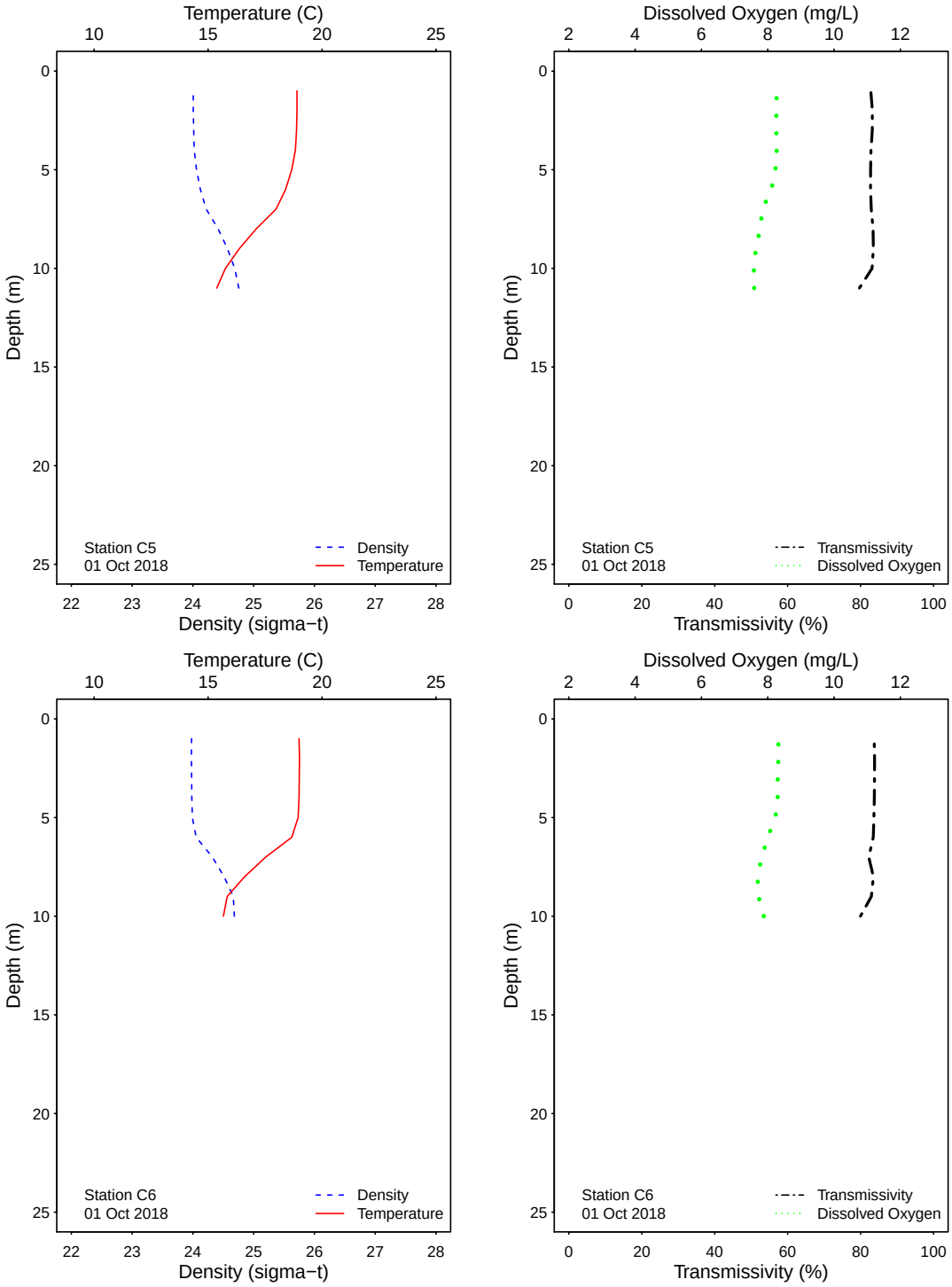


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

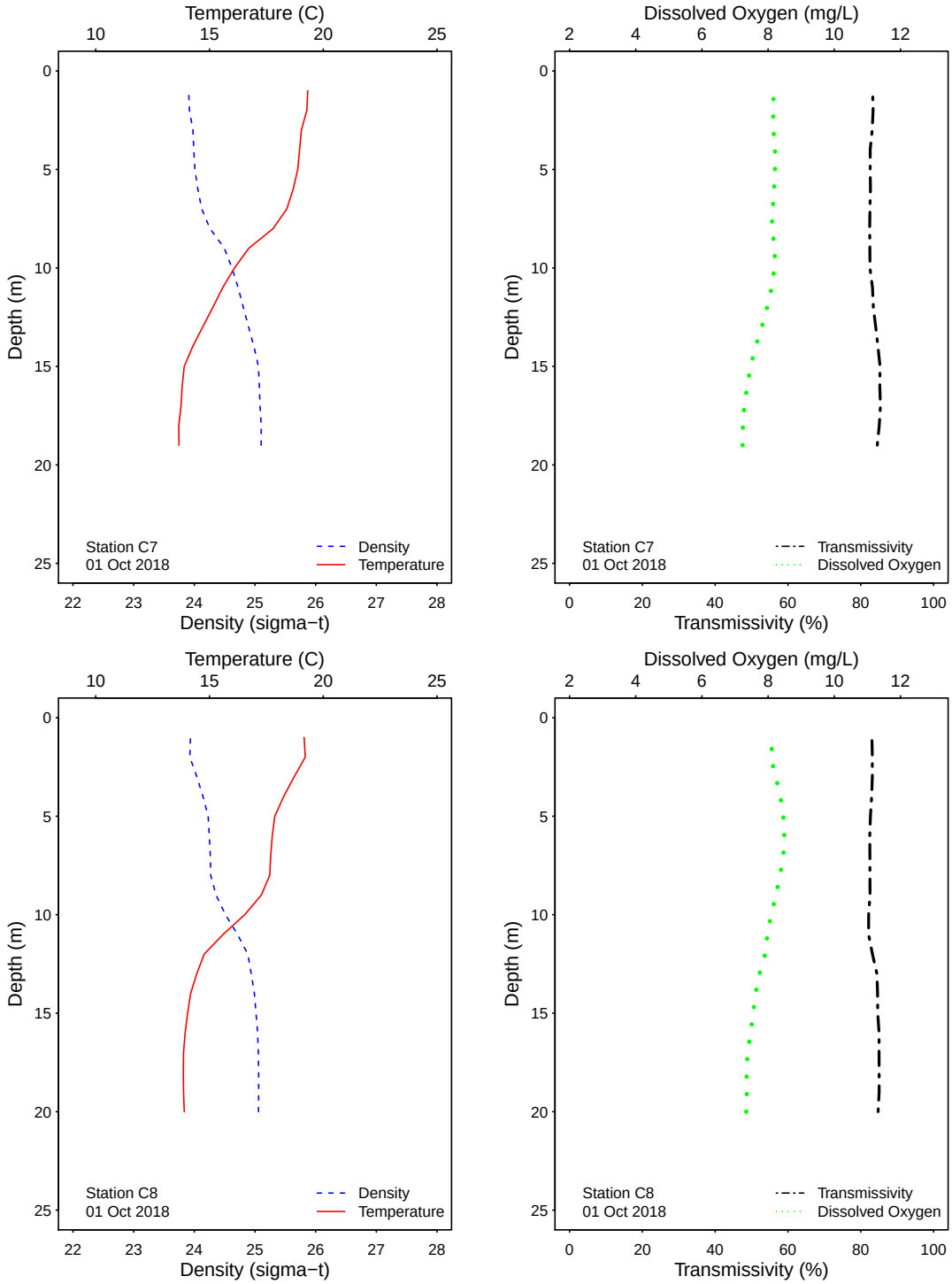


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

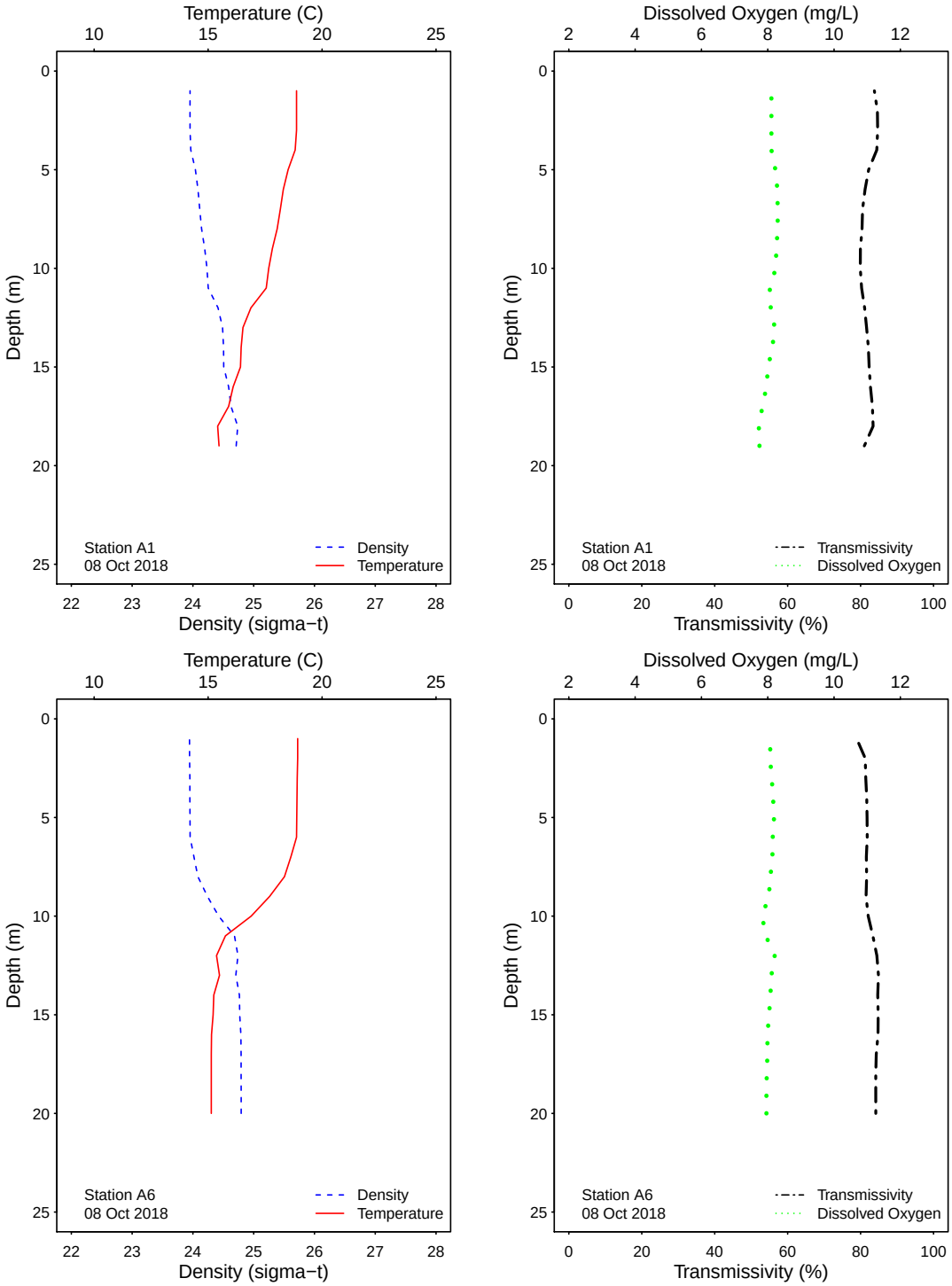


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

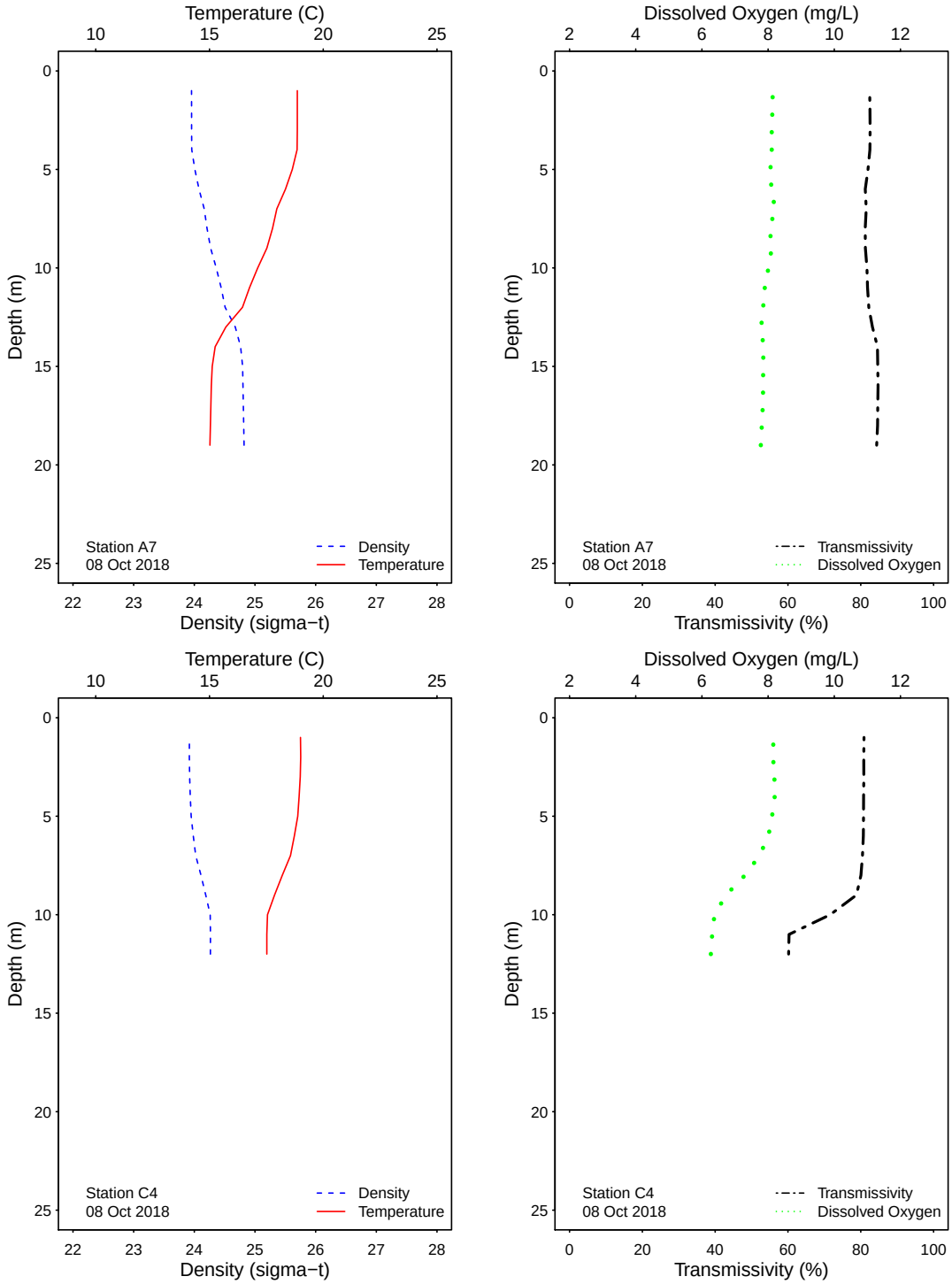


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

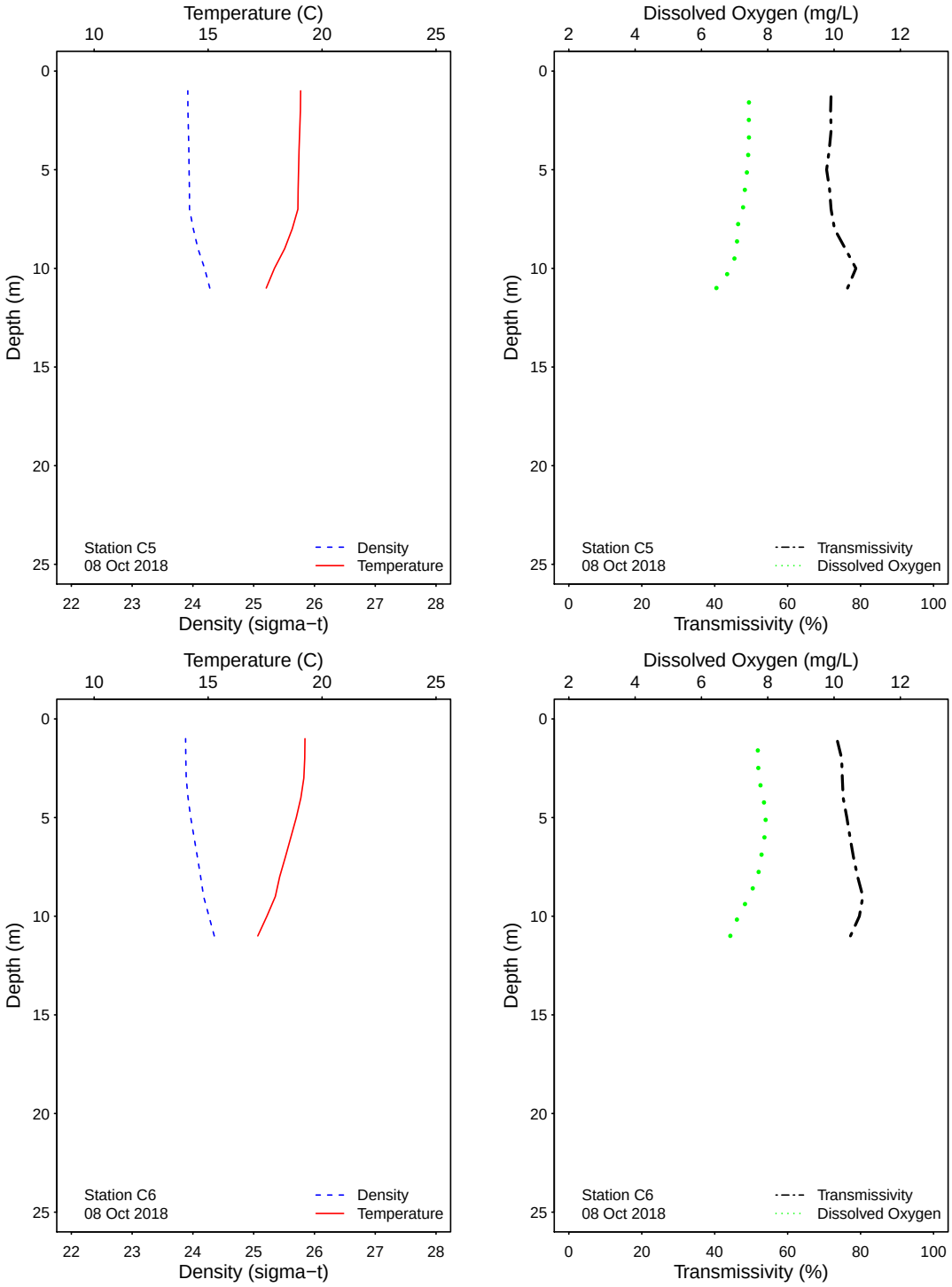


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

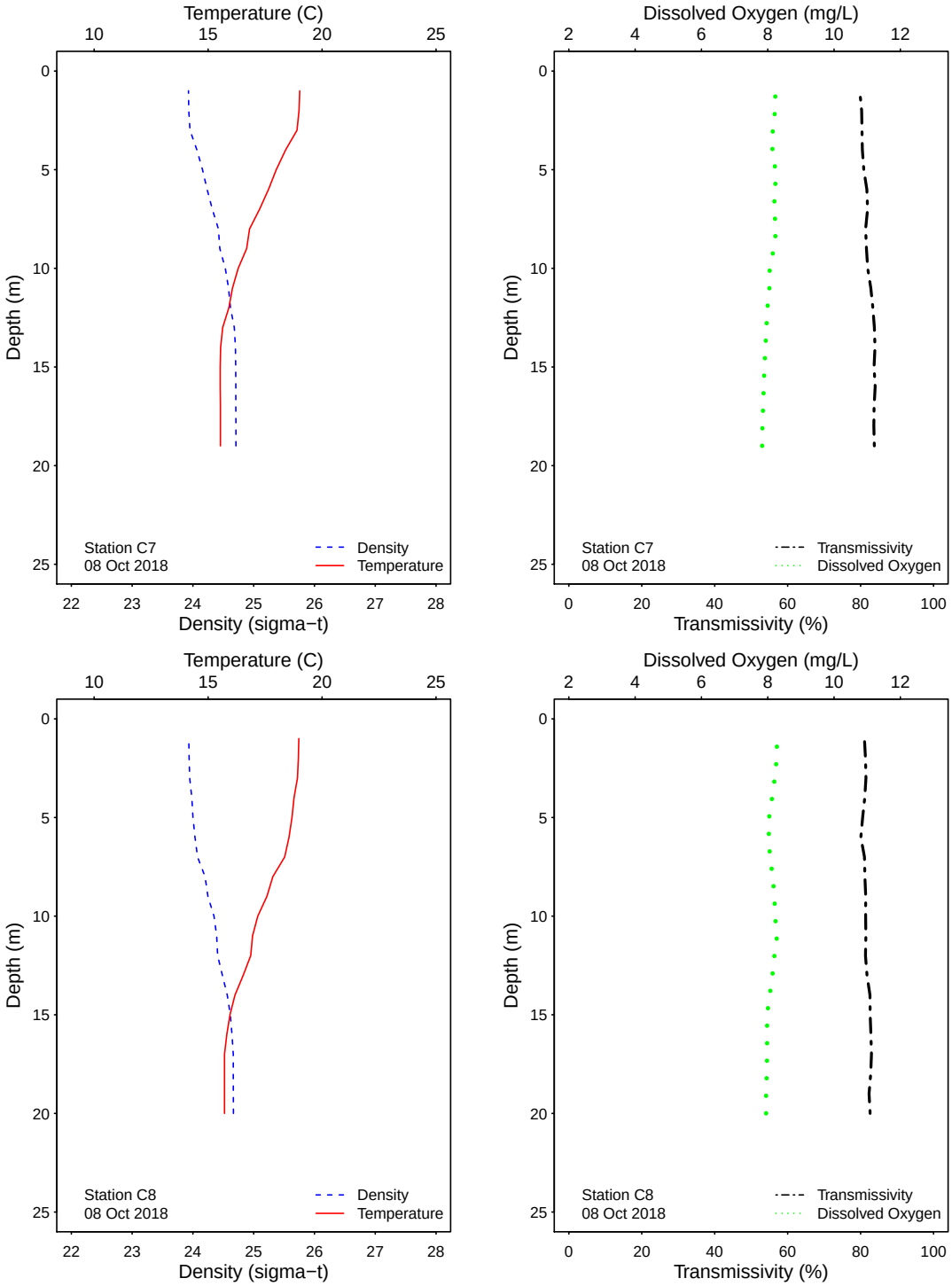


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

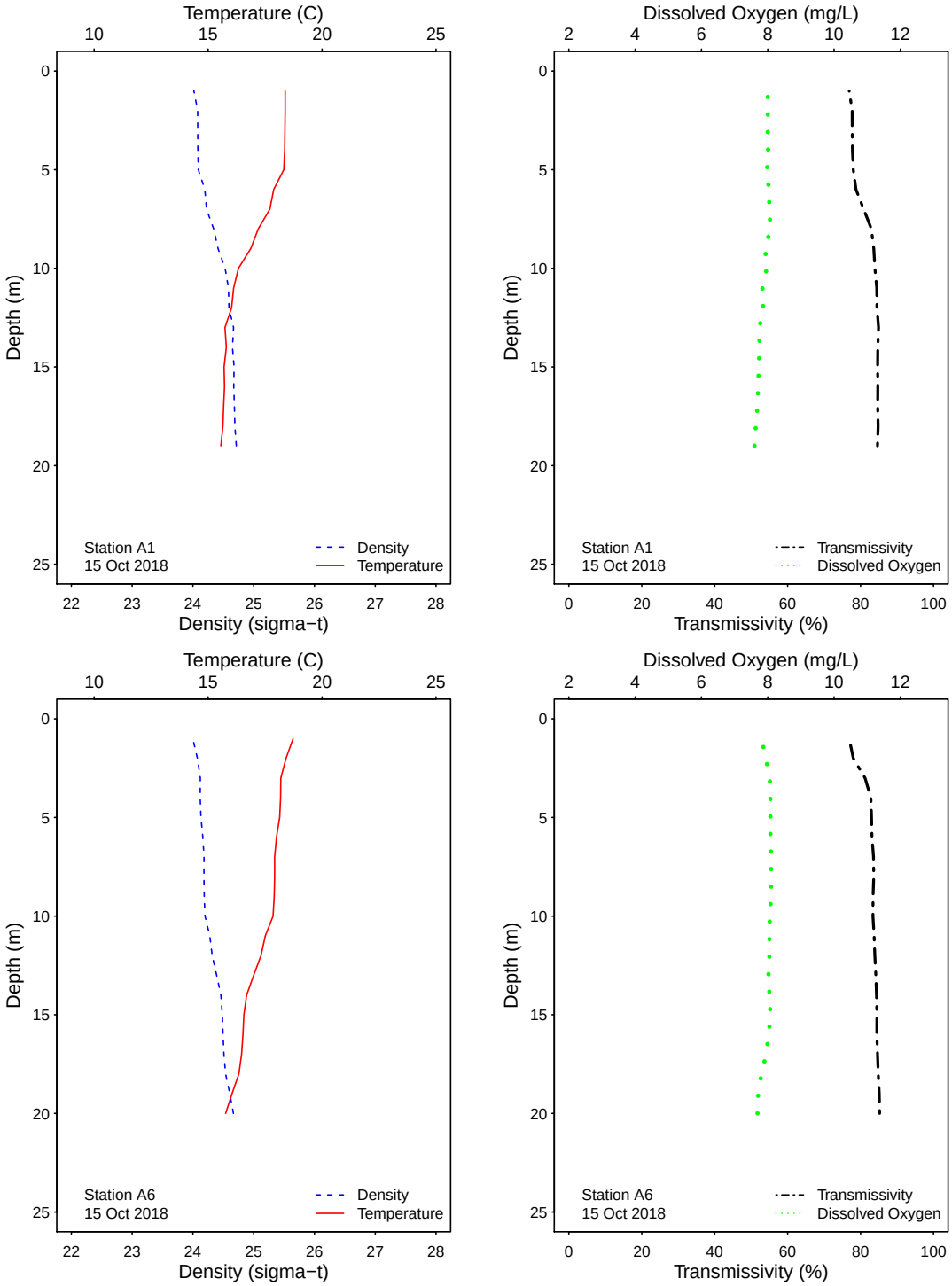


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

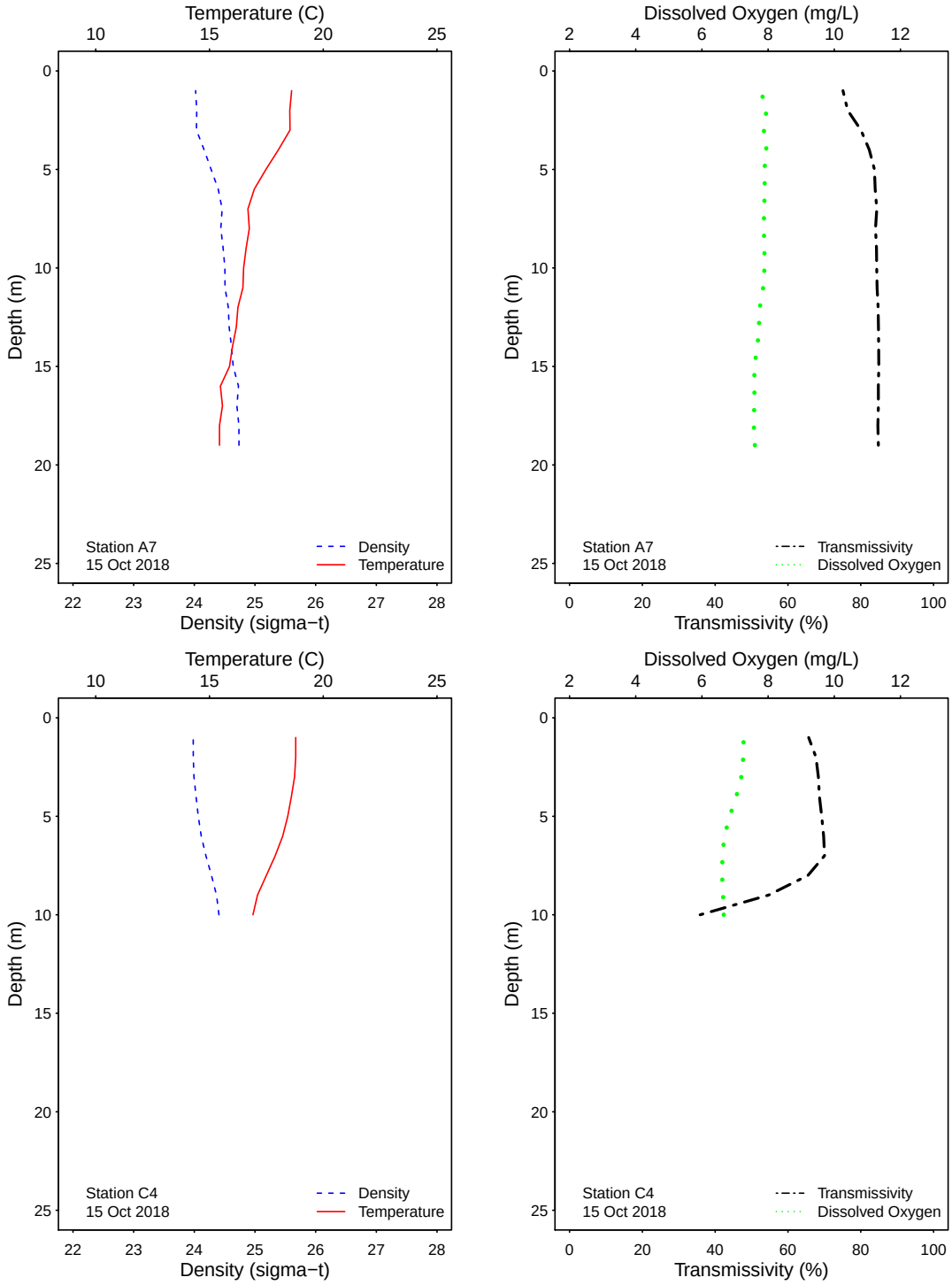
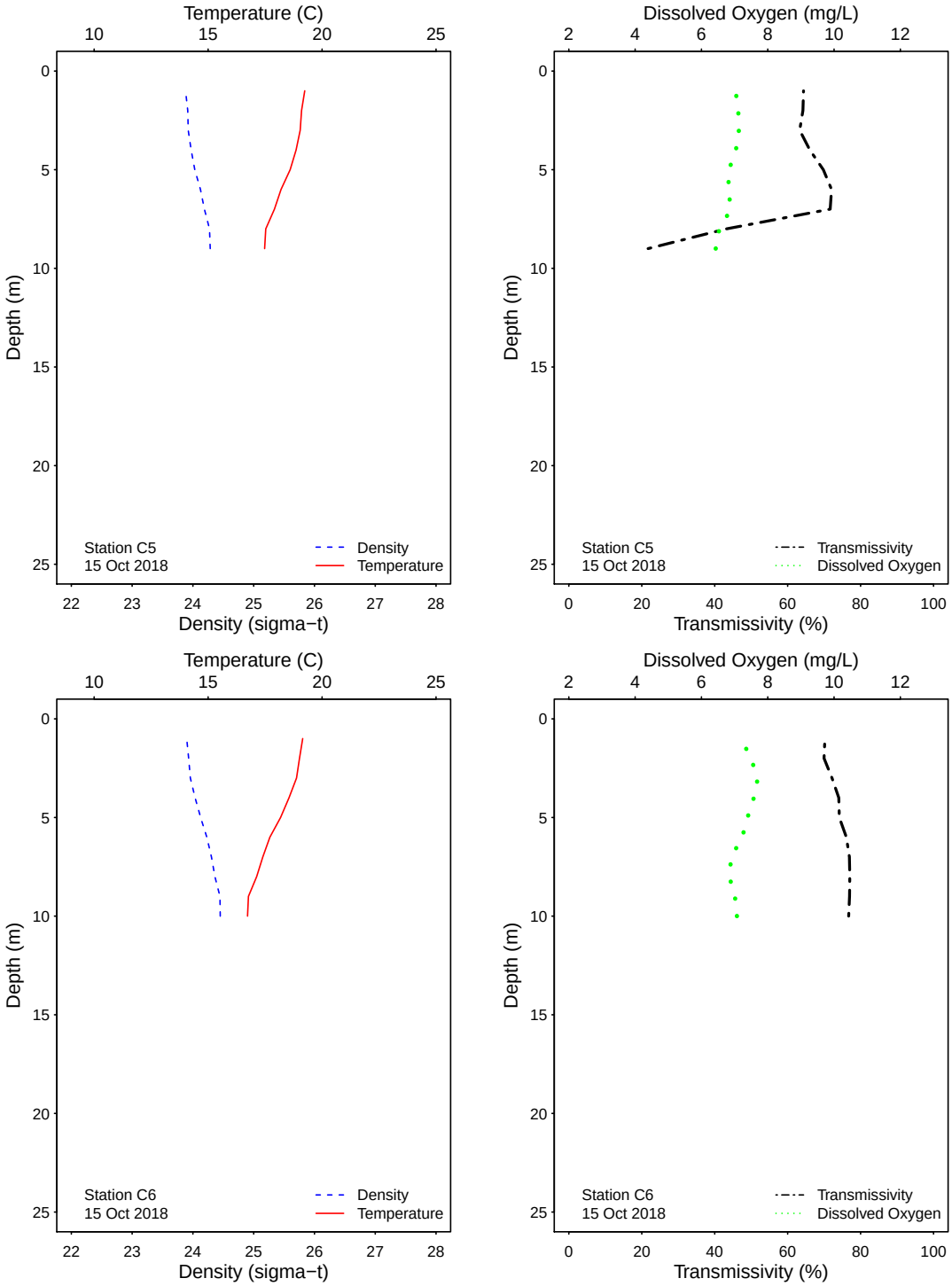


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.



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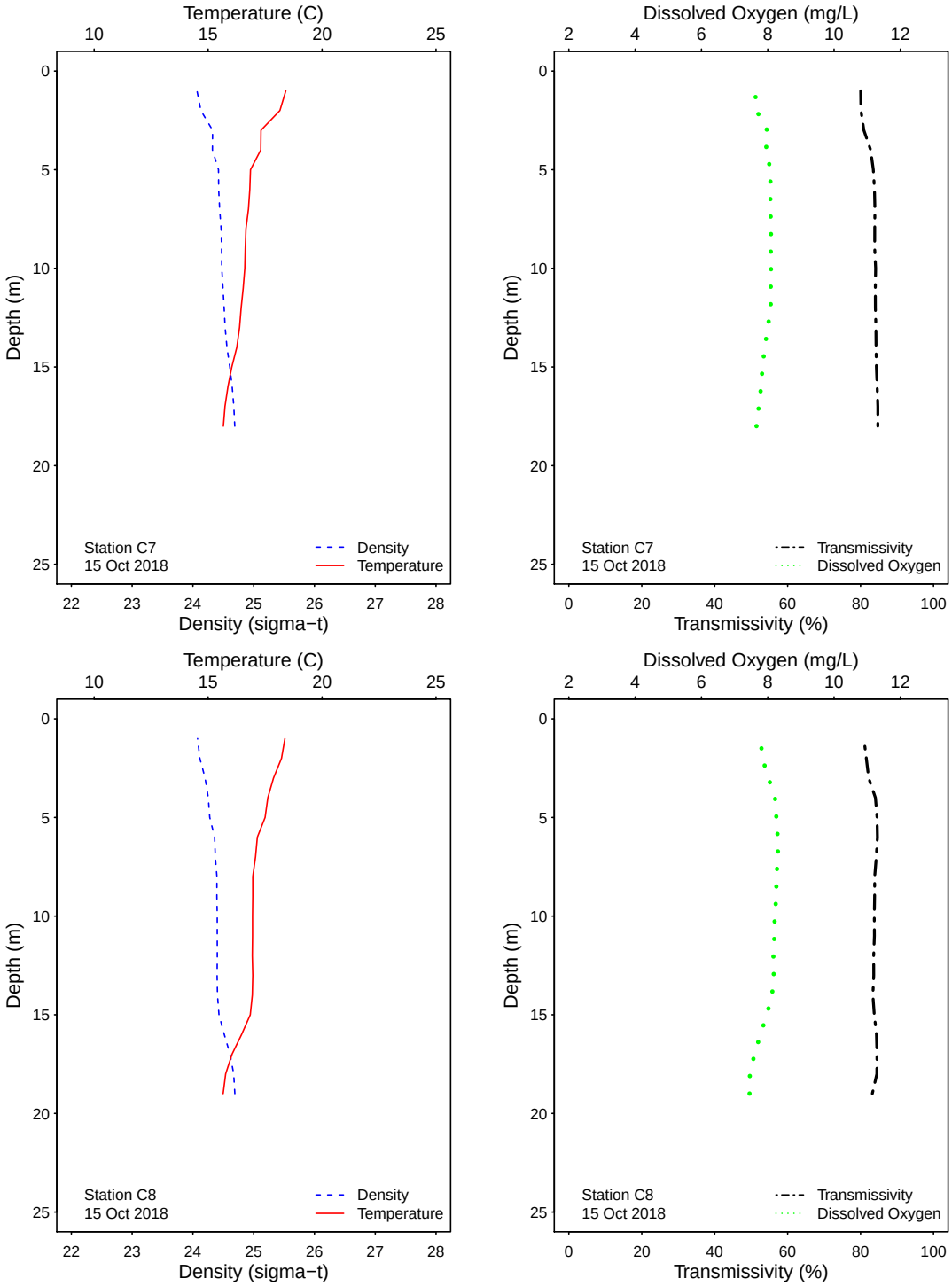
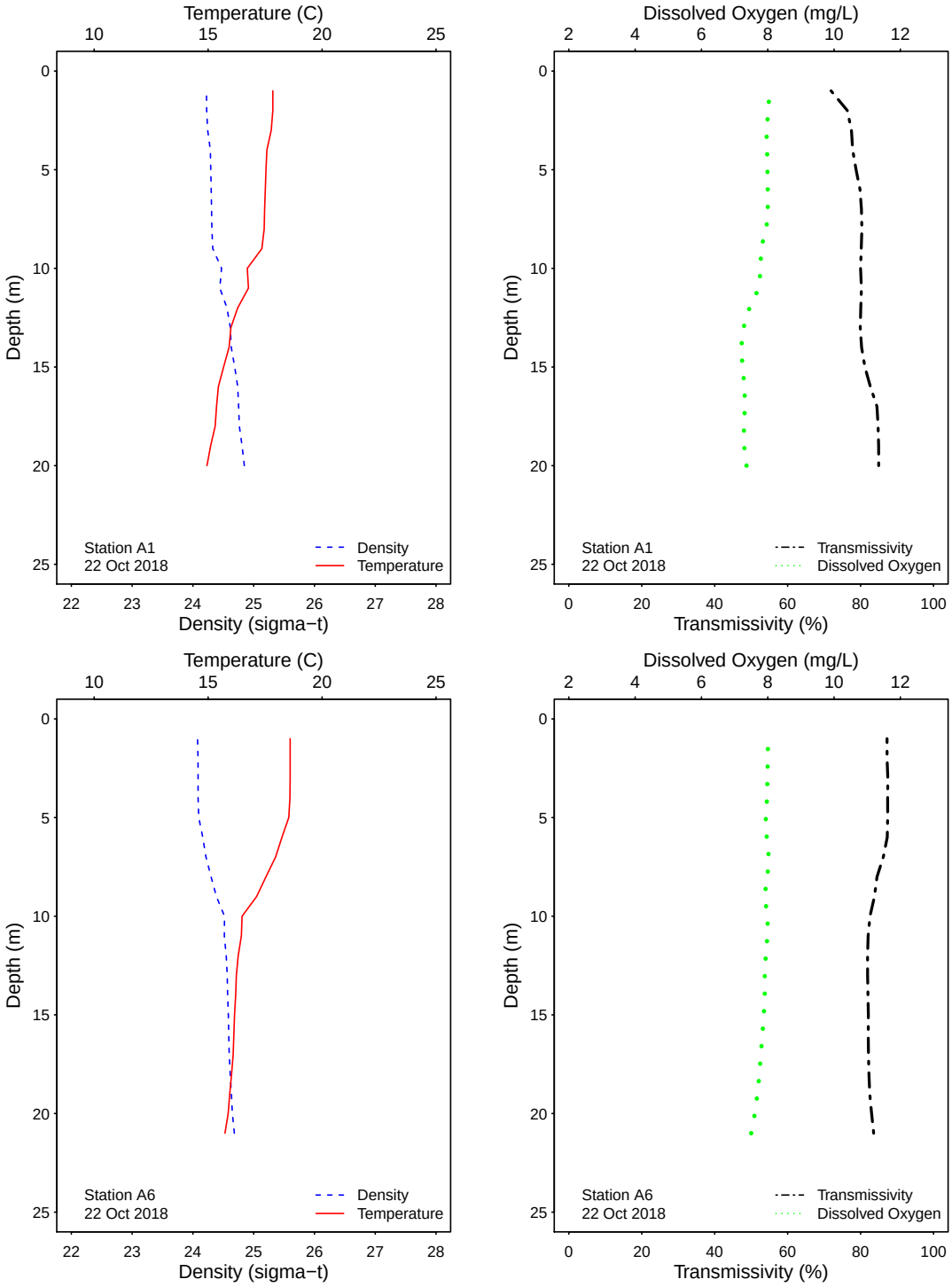


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.



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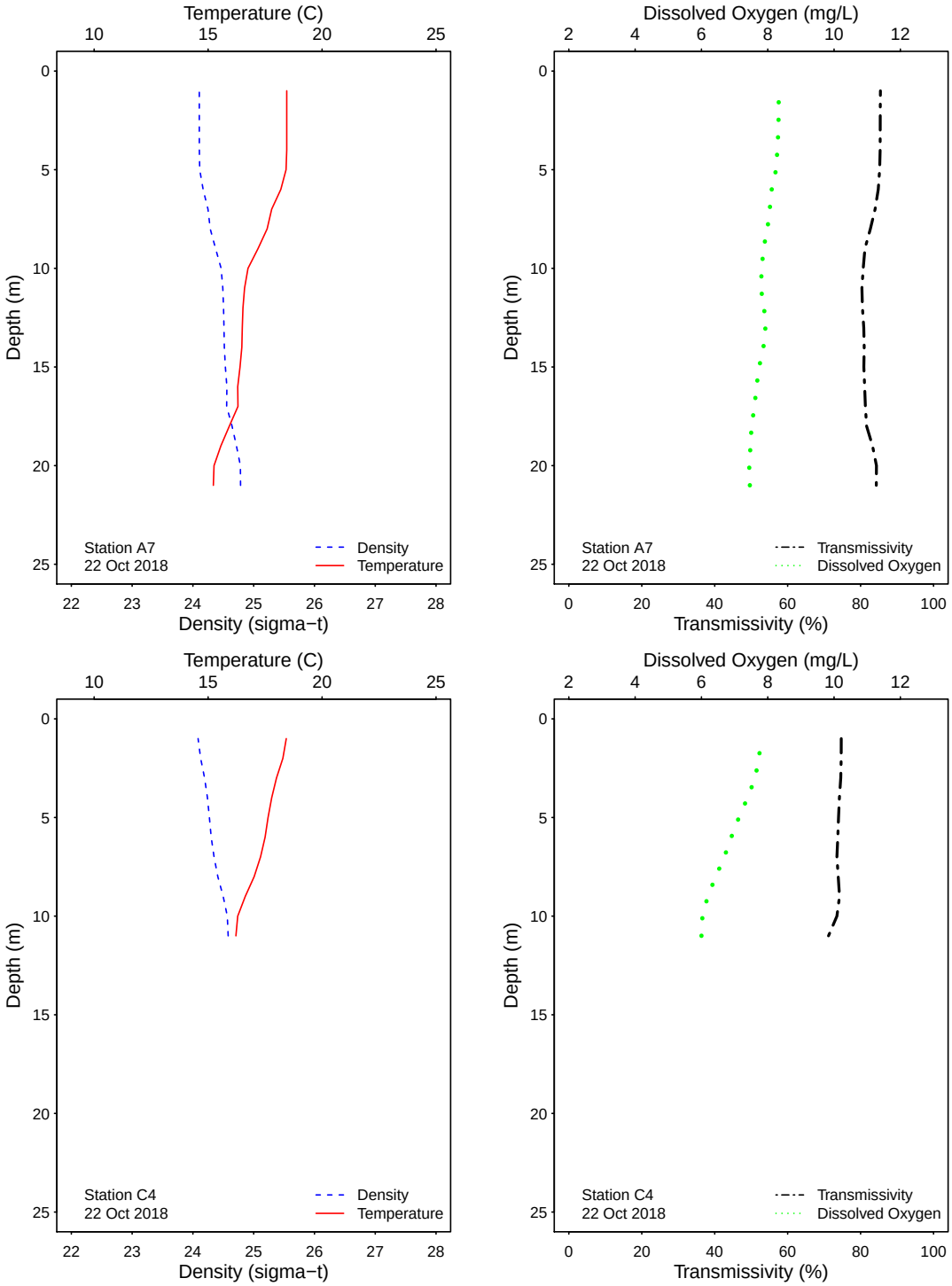


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

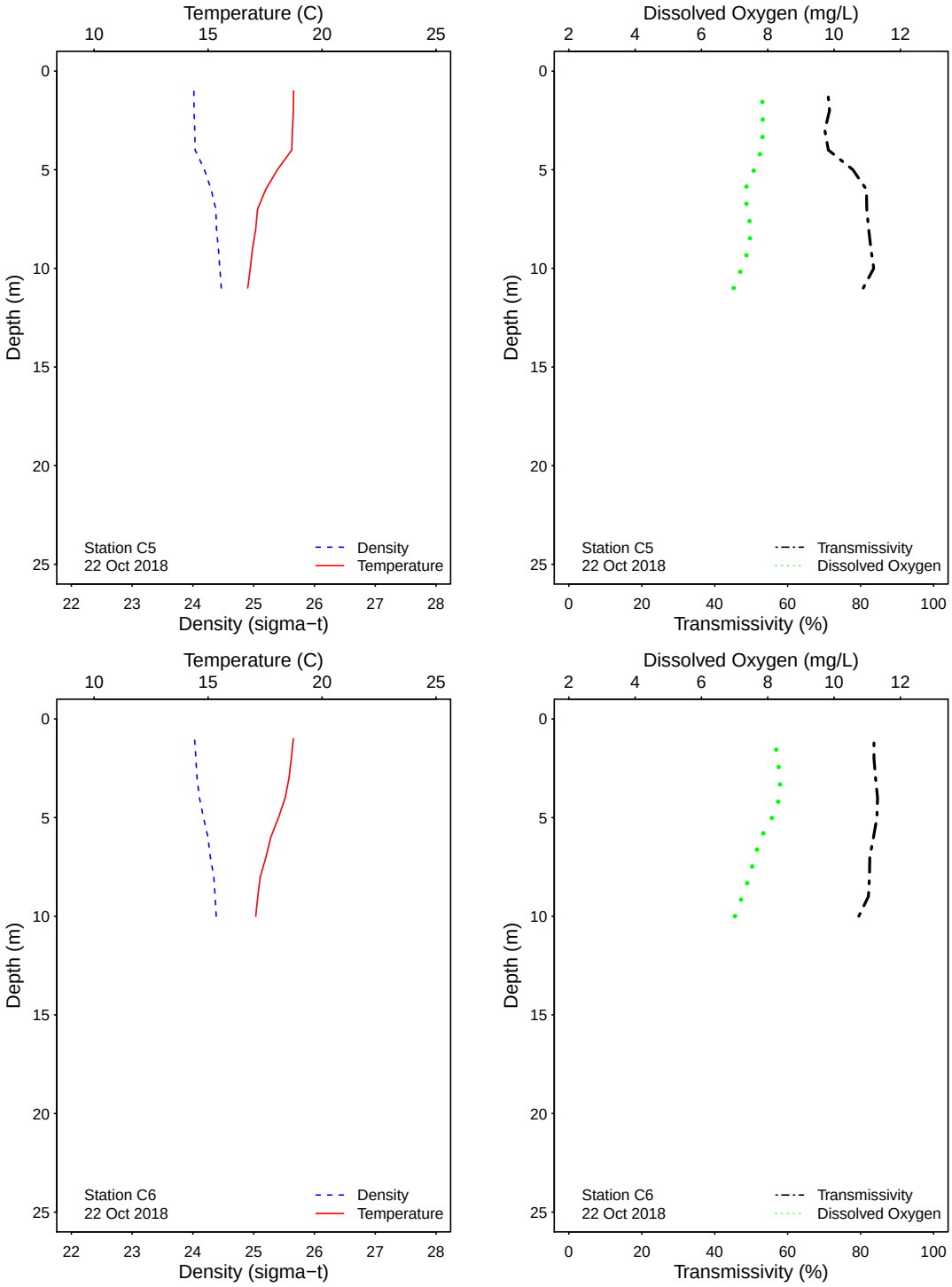


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

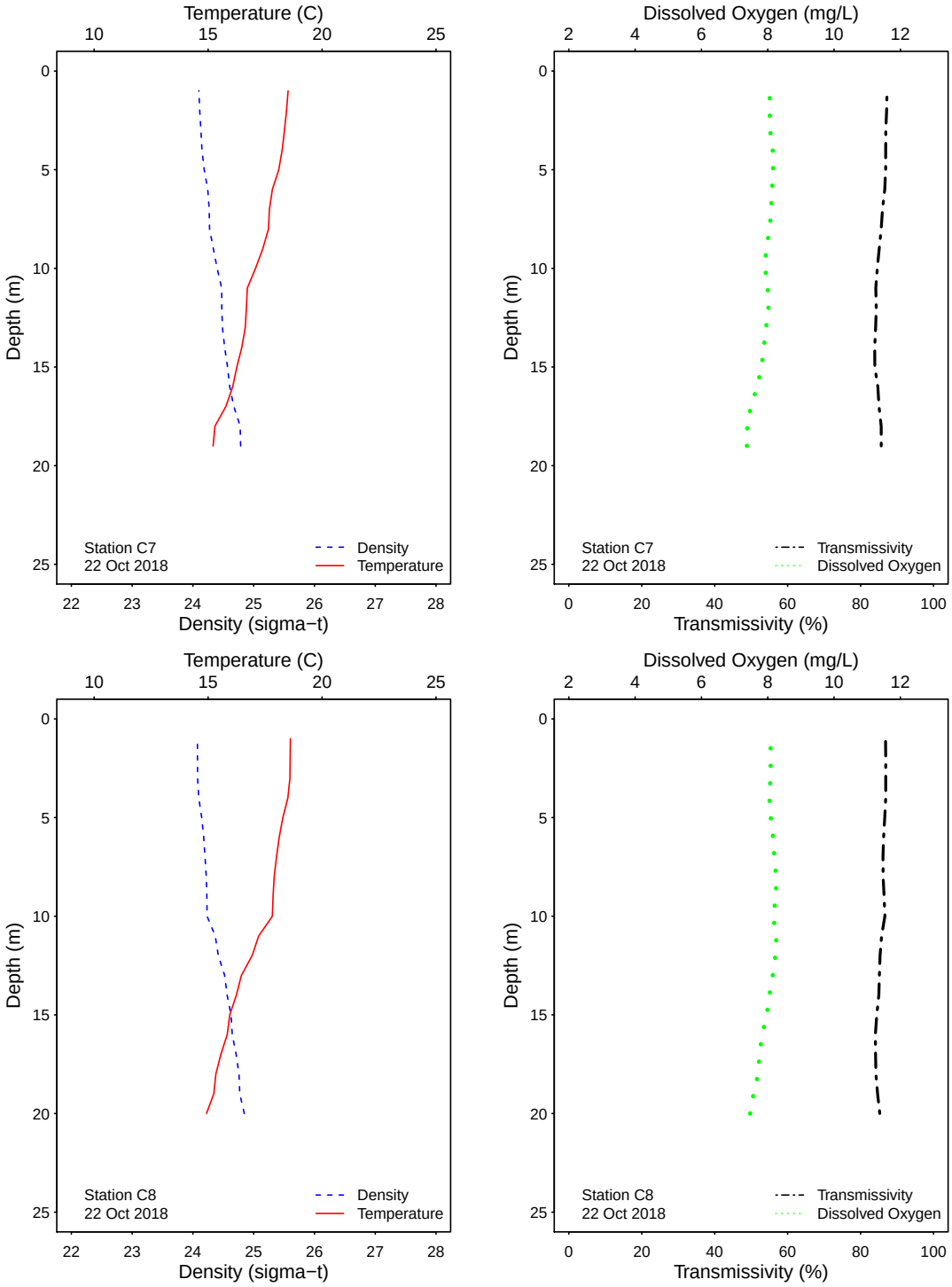


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

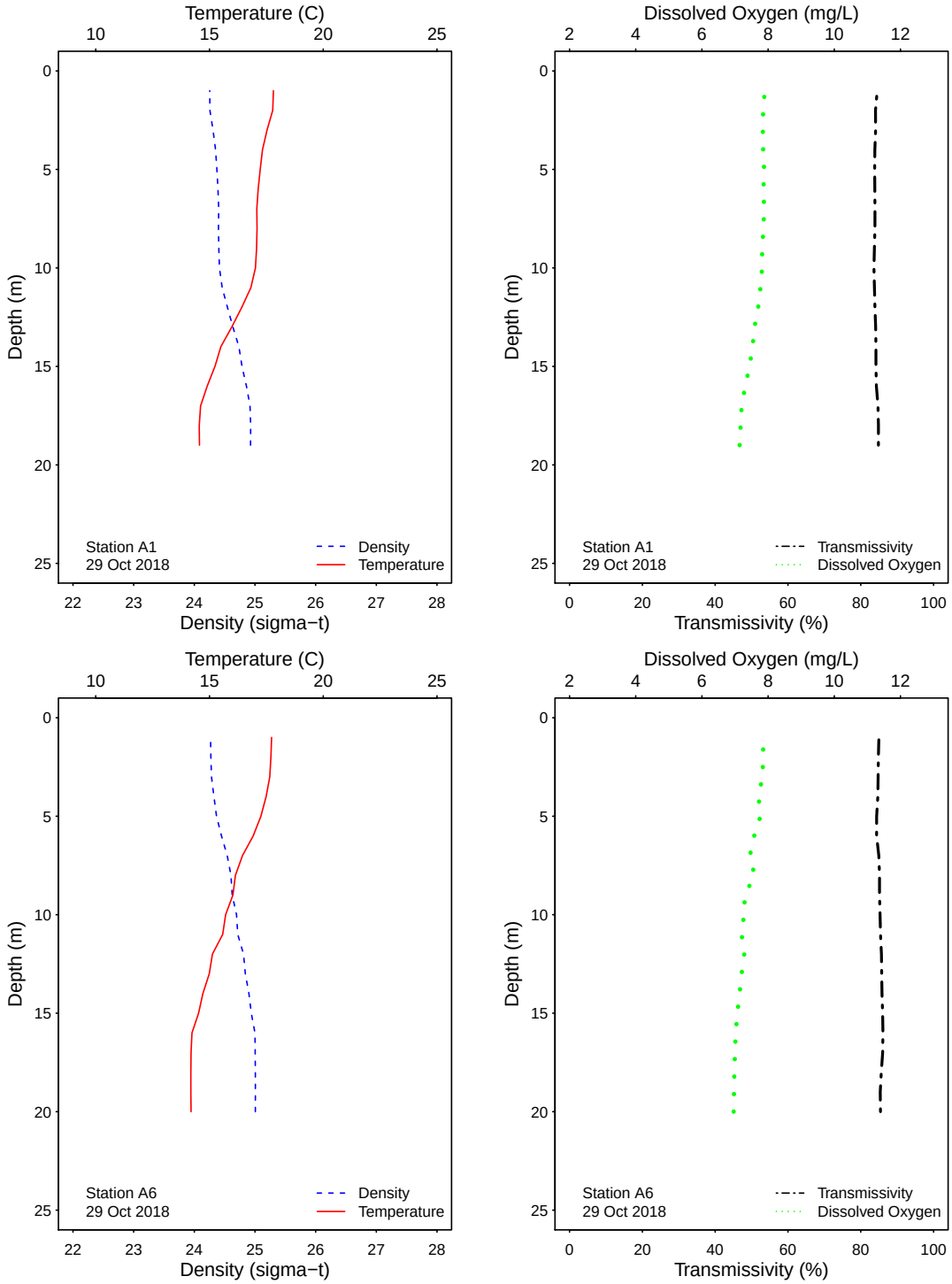
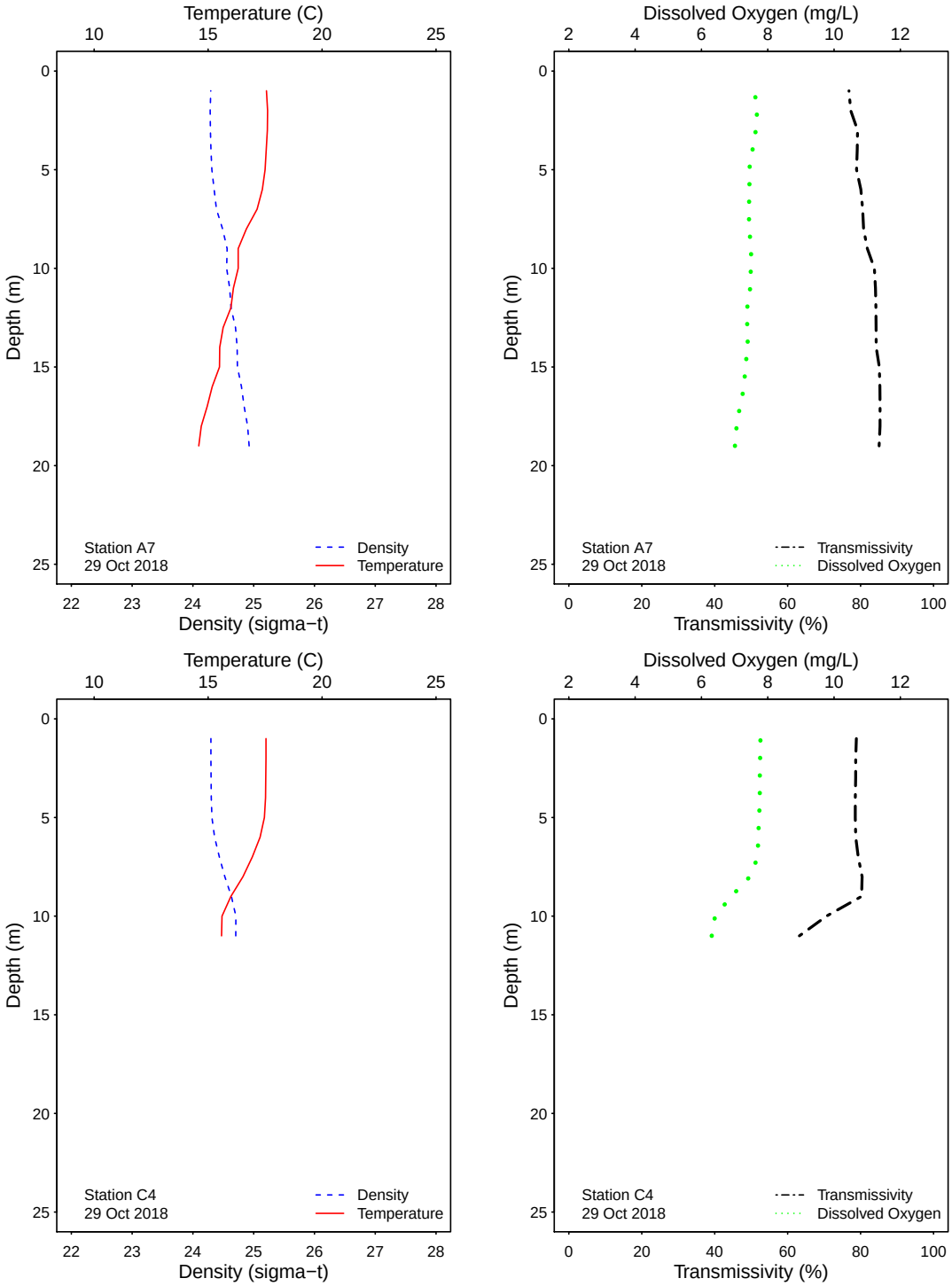


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.



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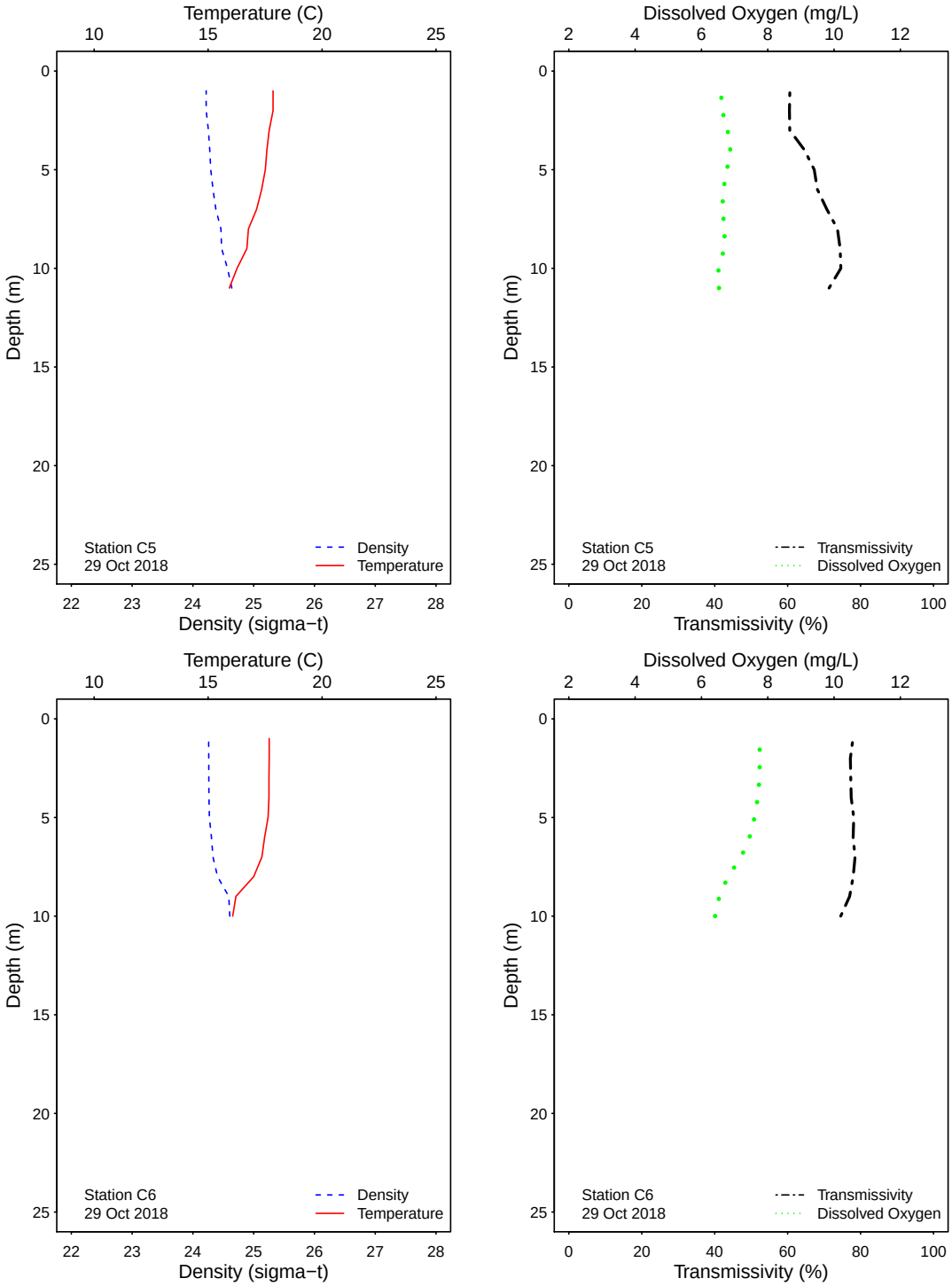

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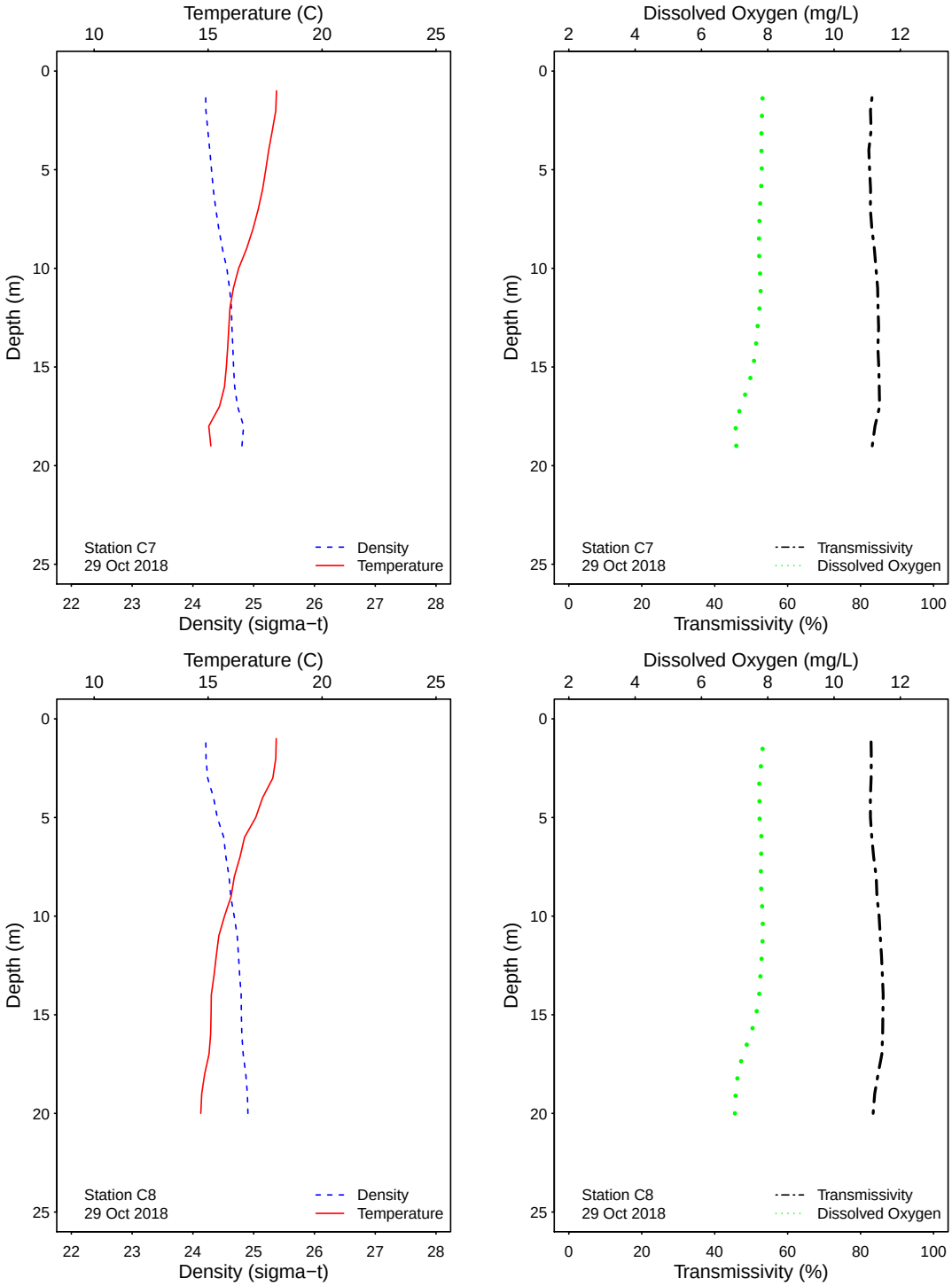

Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

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 Oct 2018	18	AE	LAB DUPLICATE	2e	<2	<2
A7	08 Oct 2018	18	LMA	LAB DUPLICATE	6e	2e	<2
A7	15 Oct 2018	18	AE	LAB DUPLICATE	4e	<2	<2
A7	22 Oct 2018	18	JLT	LAB DUPLICATE	<2	<2	<2
A7	29 Oct 2018	18	AE	LAB DUPLICATE	10e	<2	<2
C7	01 Oct 2018	18	AE	LAB DUPLICATE	30e	4e	<2
C7	08 Oct 2018	18	AR	LAB DUPLICATE	4e	10e	<2
C7	15 Oct 2018	18	AE	LAB DUPLICATE	<20	<2	<2
C7	22 Oct 2018	18	JLT	LAB DUPLICATE	2e	<2	<2
C7	29 Oct 2018	18	AE	LAB DUPLICATE	4e	<2	<2
C8	01 Oct 2018	12	AE	LAB DUPLICATE	2e	2e	<2
C8	08 Oct 2018	12	AR	LAB DUPLICATE	<2	<2	<2
C8	15 Oct 2018	12	AE	LAB DUPLICATE	<2	<2	ns
C8	22 Oct 2018	12	JLT	LAB DUPLICATE	<2	<2	<2
C8	29 Oct 2018	12	JT	LAB DUPLICATE	<2	<2	<2
D12	03 Oct 2018		JT	FIELD DUPLICATE	<2	<2	4e
D12	03 Oct 2018		JT	LAB DUPLICATE	<2	2e	2e
D12	10 Oct 2018		LMA	FIELD DUPLICATE	40e	2e	4e
D12	10 Oct 2018		LMA	LAB DUPLICATE	<20	4e	20e
D12	17 Oct 2018		AE	FIELD DUPLICATE	<20	<2	<2
D12	17 Oct 2018		AE	LAB DUPLICATE	<20	<2	<2
D12	24 Oct 2018		AE	FIELD DUPLICATE	<20	<2	2e
D12	24 Oct 2018		AE	LAB DUPLICATE	<20	<2	<2
D12	31 Oct 2018		AE	FIELD DUPLICATE	<20	<2	2e
D12	31 Oct 2018		AE	LAB DUPLICATE	20e	<2	<2

ns = not sampled
ND = no data

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