



Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall

(Point Loma Metropolitan Wastewater Treatment Plant)

NPDES Permit No. CA0107409

June 2015



City of San Diego
Ocean Monitoring Program
Public Utilities Department
Environmental Monitoring and Technical Services Division



THE CITY OF SAN DIEGO

July 31, 2015

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 June 2015 Monthly Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, Point Loma Wastewater Treatment Plant as required per Order No. R9-2009-0001, NPDES Permit No. CA0107409.

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Peter S. Vroom".

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

TDS:asb

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

Environmental Monitoring and Technical Services Division • Public Utilities

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Fecal Coliform Compliance Summary, Geometric Mean Standard

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Total Coliform Single Sample Maximum

Fecal Coliform Single Sample Maximum

Enterococcus Bacteria Single Sample Maximum

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INTRODUCTION

Monthly reports of water quality and ocean conditions for the San Diego coastal region surrounding the Point Loma Ocean Outfall are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2009-0001, NPDES Permit No. CA0107409 for the Point Loma Wastewater Treatment Plant (PLWTP), Point Loma Ocean Outfall (PLOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the PLWTP are presented in separate reports.

MATERIALS AND METHODS

Shore Stations

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

Kelp Bed Stations

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

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

Van Dorn bottles are used to collect seawater samples from discrete depths at the kelp bed stations. The bottles are arrayed at the required depths and messenger-tripped in series. Aliquots for ammonium and bacteriological analyses are then drawn from these bottles into sterile sample bottles for processing at the City's Toxicology Laboratory (ammonium) and Marine Microbiology Laboratory (bacteria), respectively. Water column profiles of temperature, transmissivity, dissolved oxygen, pH, salinity, density, chlorophyll *a* are generated using a Sea-Bird conductivity, temperature and depth instrument (CTD), which collects these data at a rate of

eight scans per second. These scans are then internally averaged to create water column profiles with data readings at a rate of one per meter. The CTD data are presented in both graphical and tabular form. Additionally, data for depths closest to those where bacteriological samples are collected are extracted from the CTD profiles and presented with the bacteriological data. However, it should be noted that the CTD measurements and bacteriological samples are taken from separate hydrocasts.

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 2009 COP compliance standards.

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

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

Bacteriological Reporting and Quality Assurance

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)^[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 2009 California Ocean Plan. The seven standards are defined as follows:

^[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.

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

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

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 2015 Quality Assurance Report, which will be completed in March 2016.

SUMMARY OF RESULTS

Shore Stations

- During June 2015, each of the eight shore stations was in compliance with all of the water-contact standards specified in the Ocean Plan for total coliform, fecal coliform, and *Enterococcus* bacteria.
- Nothing of sewage origin was observed at any of the shore stations.

Kelp Bed Stations

- The eight kelp bed water quality stations (A1, A6, A7, C4, C5, C6, C7, C8) were sampled on June 6, 10, 18, and 22. The sampling scheduled for June 30 was not completed due to mechanical problems with the boat.
- During June, each of the kelp bed stations was in compliance with all of the water-contact standards specified in the Ocean Plan for total coliform, fecal coliform, and *Enterococcus* bacteria.

- Water column temperatures ranged from 11.16 to 20.49°C during the month. The difference between surface and bottom waters ranged from 1.85 to 6.41°C, indicating that the water column was stratified at the kelp bed stations during the month.
- Chlorophyll *a* concentrations ranged from 0.46 to 10.72 µg/L during June, suggesting the presence of phytoplankton blooms during the month.
- There were no notable visual observations for June.

Offshore Stations

- Quarterly sampling was not conducted during June at the offshore stations. The next quarterly sampling is scheduled for August 2015.



TABLES AND FIGURES

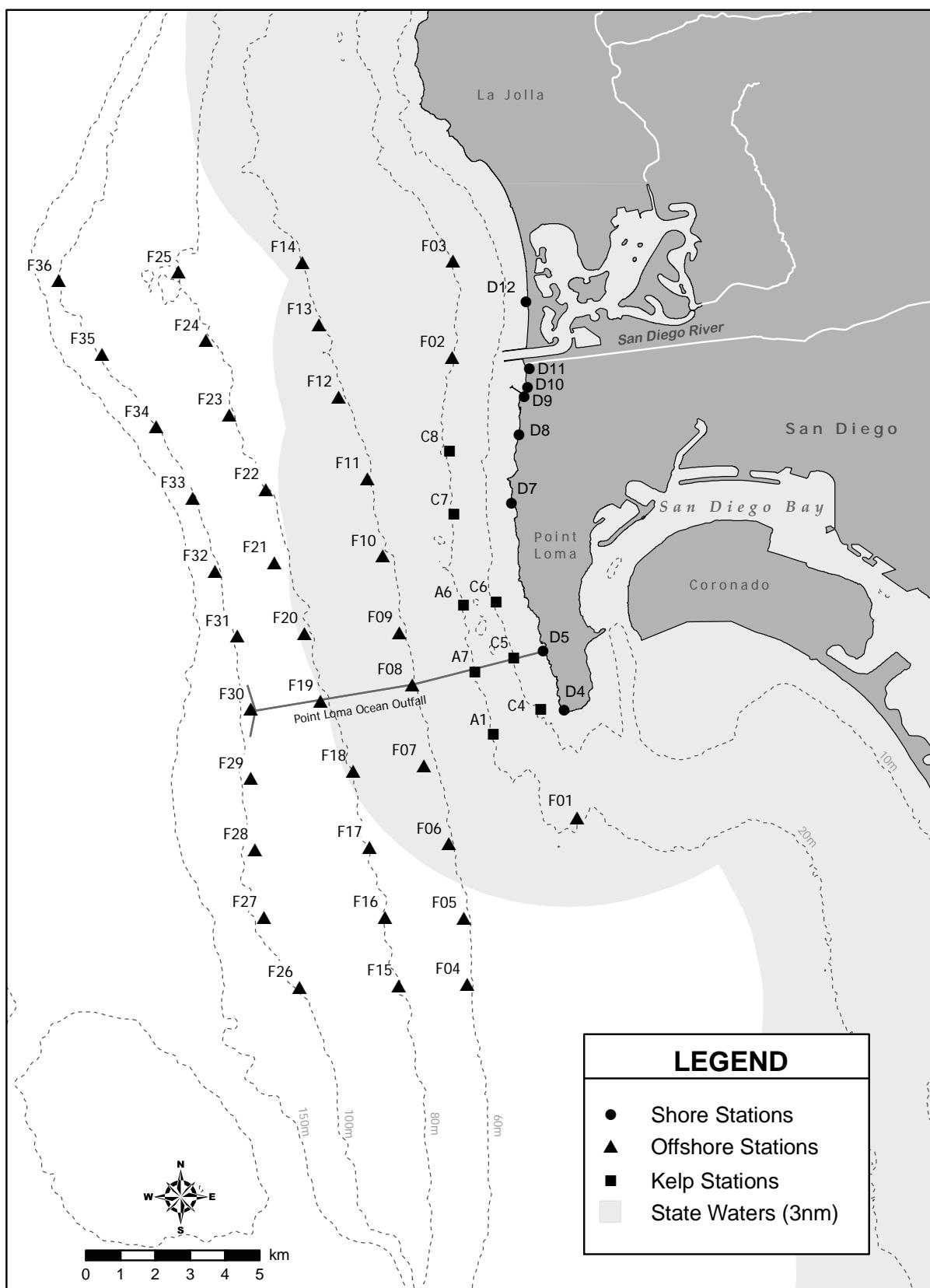


Figure 1.1 Station Map

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Shore Stations

Table 2.1

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for total coliforms at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >1,000 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8	D9	D10	D11	D12
01 Jun 2015	6	14	6	33	13	28	52	2
02 Jun 2015	6	14	6	33	13	28	52	2
03 Jun 2015	6	14	6	33	13	28	52	2
04 Jun 2015	12	9	6	33	15	33	60	4
05 Jun 2015	12	9	6	33	15	33	60	4
06 Jun 2015	12	9	6	33	15	33	60	4
07 Jun 2015	12	9	6	33	15	33	60	4
08 Jun 2015	12	9	6	33	15	33	60	4
09 Jun 2015	12	9	6	33	15	33	60	4
10 Jun 2015	13	9	9	21	24	33	45	4
11 Jun 2015	13	9	9	21	24	33	45	4
12 Jun 2015	13	9	9	21	24	33	45	4
13 Jun 2015	13	9	9	21	24	33	45	4
14 Jun 2015	13	9	9	21	24	33	45	4
15 Jun 2015	13	9	9	21	24	33	45	4
16 Jun 2015	7	9	9	18	21	24	25	5
17 Jun 2015	7	9	9	18	21	24	25	5
18 Jun 2015	7	9	9	18	21	24	25	5
19 Jun 2015	7	9	9	18	21	24	25	5
20 Jun 2015	7	9	9	18	21	24	25	5
21 Jun 2015	7	9	9	18	21	24	25	5
22 Jun 2015	7	13	13	20	21	28	20	8
23 Jun 2015	7	13	13	20	21	28	20	8
24 Jun 2015	7	13	13	20	21	28	20	8
25 Jun 2015	7	13	13	20	21	28	20	8
26 Jun 2015	7	13	13	20	21	28	20	8
27 Jun 2015	7	13	13	20	21	28	20	8
28 Jun 2015	11	13	20	20	23	28	23	12
29 Jun 2015	11	13	20	20	23	28	23	12
30 Jun 2015	11	13	20	20	23	28	23	12

* Geometric mean calculated using an n<5

Table 2.2

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for fecal coliform at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >200 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8	D9	D10	D11	D12
01 Jun 2015	5	3	2	3	2	3	6	2
02 Jun 2015	5	3	2	3	2	3	6	2
03 Jun 2015	5	3	2	3	2	3	6	2
04 Jun 2015	6	2	2	3	3	6	10	2
05 Jun 2015	6	2	2	3	3	6	10	2
06 Jun 2015	6	2	2	3	3	6	10	2
07 Jun 2015	6	2	2	3	3	6	10	2
08 Jun 2015	6	2	2	3	3	6	10	2
09 Jun 2015	6	2	2	3	3	6	10	2
10 Jun 2015	6	2	2	3	3	6	12	2
11 Jun 2015	6	2	2	3	3	6	12	2
12 Jun 2015	6	2	2	3	3	6	12	2
13 Jun 2015	6	2	2	3	3	6	12	2
14 Jun 2015	6	2	2	3	3	6	12	2
15 Jun 2015	6	2	2	3	3	6	12	2
16 Jun 2015	2	2	2	3	2	4	7	2
17 Jun 2015	2	2	2	3	2	4	7	2
18 Jun 2015	2	2	2	3	2	4	7	2
19 Jun 2015	2	2	2	3	2	4	7	2
20 Jun 2015	2	2	2	3	2	4	7	2
21 Jun 2015	2	2	2	3	2	4	7	2
22 Jun 2015	2	2	2	3	2	4	6	2
23 Jun 2015	2	2	2	3	2	4	6	2
24 Jun 2015	2	2	2	3	2	4	6	2
25 Jun 2015	2	2	2	3	2	4	6	2
26 Jun 2015	2	2	2	3	2	4	6	2
27 Jun 2015	2	2	2	3	2	4	6	2
28 Jun 2015	2	2	2	3	2	6	6	2
29 Jun 2015	2	2	2	3	2	6	6	2
30 Jun 2015	2	2	2	3	2	6	6	2

* Geometric mean calculated using an n<5

Table 2.3

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the PLOO shore stations. Data are based on the geometric mean of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >35 CFU/100 mL exceed the standard.

Date	D4	D5	D7	D8	D9	D10	D11	D12
01 Jun 2015	2	4	2	4	4	3	6	3
02 Jun 2015	2	4	2	4	4	3	6	3
03 Jun 2015	2	4	2	4	4	3	6	3
04 Jun 2015	2	2	2	5	4	5	7	3
05 Jun 2015	2	2	2	5	4	5	7	3
06 Jun 2015	2	2	2	5	4	5	7	3
07 Jun 2015	2	2	2	5	4	5	7	3
08 Jun 2015	2	2	2	5	4	5	7	3
09 Jun 2015	2	2	2	5	4	5	7	3
10 Jun 2015	2	2	2	3	4	5	7	3
11 Jun 2015	2	2	2	3	4	5	7	3
12 Jun 2015	2	2	2	3	4	5	7	3
13 Jun 2015	2	2	2	3	4	5	7	3
14 Jun 2015	2	2	2	3	4	5	7	3
15 Jun 2015	2	2	2	3	4	5	7	3
16 Jun 2015	2	2	2	5	3	3	4	2
17 Jun 2015	2	2	2	5	3	3	5	2
18 Jun 2015	2	2	2	5	3	3	5	2
19 Jun 2015	2	2	2	5	3	3	5	2
20 Jun 2015	2	2	2	5	3	3	5	2
21 Jun 2015	2	2	2	5	3	3	5	2
22 Jun 2015	2	4	2	5	3	3	5	2
23 Jun 2015	2	4	2	5	3	3	5	2
24 Jun 2015	2	4	2	5	3	3	5	2
25 Jun 2015	2	4	2	5	3	3	5	2
26 Jun 2015	2	4	2	5	3	3	5	2
27 Jun 2015	2	4	2	5	3	3	5	2
28 Jun 2015	2	4	2	3	3	3	5	2
29 Jun 2015	2	4	2	3	3	3	5	2
30 Jun 2015	2	4	2	3	3	3	5	2

* Geometric mean calculated using an n<5

Table 2.4

Summary of compliance at the PLOO shore stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	D4	D5	D7	D8	D9	D10	D11	D12
04 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

Table 2.5

Summary of compliance at the PLOO shore stations with the 2009 Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	D4	D5	D7	D8	D9	D10	D11	D12
04 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

Table 2.6

Summary of compliance at the PLOO shore stations with the 2009 Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	D4	D5	D7	D8	D9	D10	D11	D12
04 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

Table 2.7

Summary of compliance at the PLOO shore stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliforms and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	D4	D5	D7	D8	D9	D10	D11	D12
04 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
10 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
16 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
22 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC
28 Jun 2015	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

Table 2.8

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

Station	Date	Time	Total	Fecal	Enter	F:T
D4	04 Jun 2015	924	60e	4e	<2	0.07
	10 Jun 2015	850	4e	<2	<2	0.50
	16 Jun 2015	1018	<20	<2	6e	0.10
	22 Jun 2015	1004	<2	<2	<2	1.00
	28 Jun 2015	1120	<20	<2	<2	0.10
D5	04 Jun 2015	945	<20	2e	2e	0.10
	10 Jun 2015	901	2e	<2	<2	1.00
	16 Jun 2015	1046	<20	<2	<2	0.10
	22 Jun 2015	1024	<20	<2	86	0.10
	28 Jun 2015	1141	<20	<2	<2	0.10
D7	04 Jun 2015	1004	20e	<2	<2	0.10
	10 Jun 2015	828	<20	<2	<2	0.10
	16 Jun 2015	946	<20	<2	2e	0.10
	22 Jun 2015	933	<20	<2	<2	0.10
	28 Jun 2015	1052	<20	2e	<2	0.10
D8	04 Jun 2015	847	20e	2e	8e	0.10
	10 Jun 2015	813	<20	<2	<2	0.10
	16 Jun 2015	936	20e	<2	8e	0.10
	22 Jun 2015	916	20e	12e	<2	0.60
	28 Jun 2015	1040	<20	<2	<2	0.10
D9	04 Jun 2015	834	40e	6e	4e	0.15
	10 Jun 2015	804	20e	<2	<2	0.10
	16 Jun 2015	1116	20e	<2	4e	0.10
	22 Jun 2015	902	<20	<2	<2	0.10
	28 Jun 2015	1026	<20	<2	<2	0.10
D10	04 Jun 2015	821	100e	34e	14e	0.34
	10 Jun 2015	755	<20	<2	<2	0.10
	16 Jun 2015	1120	<20	2e	<2	0.10
	22 Jun 2015	850	20e	<2	<2	0.10
	28 Jun 2015	1012	<20	<20	<2	1.00
D11	04 Jun 2015	808	40e	20e	8e	0.50
	10 Jun 2015	742	<20	4e	4e	0.20
	16 Jun 2015	920	20e	4e	8e	0.20
	22 Jun 2015	837	20e	10e	6e	0.50
	28 Jun 2015	1000	<20	<2	<2	0.10
D12	04 Jun 2015	753	20e	<2	2e	0.10
	10 Jun 2015	727	<2	<2	<2	1.00
	16 Jun 2015	900	<20	<2	2e	0.10
	22 Jun 2015	817	16e	<2	<2	0.12
	28 Jun 2015	828	<20	<2	4e	0.10

ns = not sampled

Table 2.9

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

Station	Date	Parameter	Value
D4	04 Jun 2015	Arrive Time	924
D4	04 Jun 2015	Weather	Overcast
D4	04 Jun 2015	Wind Speed (kts)	5
D4	04 Jun 2015	Wind Dir	W
D4	04 Jun 2015	Animal Life	None
D4	04 Jun 2015	Floatables	None
D4	04 Jun 2015	Water Color	Colorless
D4	04 Jun 2015	Current Direction	W
D4	04 Jun 2015	Wave Height Low (ft)	2
D4	04 Jun 2015	High Tide (ft)	3.8
D4	04 Jun 2015	High Tide Time	1138
D4	04 Jun 2015	Low Tide (ft)	-0.9
D4	04 Jun 2015	Low Tide Time	519
D4	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D4	10 Jun 2015	Arrive Time	850
D4	10 Jun 2015	Weather	Overcast
D4	10 Jun 2015	Wind Speed (kts)	5.4
D4	10 Jun 2015	Wind Dir	SW
D4	10 Jun 2015	Animal Life	None
D4	10 Jun 2015	Floatables	None
D4	10 Jun 2015	Water Color	Green
D4	10 Jun 2015	Current Direction	SW
D4	10 Jun 2015	Wave Height Low (ft)	2
D4	10 Jun 2015	High Tide (ft)	3.8
D4	10 Jun 2015	High Tide Time	411
D4	10 Jun 2015	Low Tide (ft)	0.6
D4	10 Jun 2015	Low Tide Time	1037
D4	10 Jun 2015	Comments	Water clear
D4	16 Jun 2015	Arrive Time	1018
D4	16 Jun 2015	Weather	Overcast
D4	16 Jun 2015	Wind Speed (kts)	3
D4	16 Jun 2015	Wind Dir	W
D4	16 Jun 2015	Animal Life	None
D4	16 Jun 2015	Floatables	None
D4	16 Jun 2015	Water Color	Blue
D4	16 Jun 2015	Current Direction	W
D4	16 Jun 2015	Wave Height Low (ft)	3
D4	16 Jun 2015	High Tide (ft)	4
D4	16 Jun 2015	High Tide Time	1020
D4	16 Jun 2015	Low Tide (ft)	1.6
D4	16 Jun 2015	Low Tide Time	1528
D4	16 Jun 2015	Comments	Kelp; Seagrass; Water clear

Station	Date	Parameter	Value
D4	22 Jun 2015	Arrive Time	1004
D4	22 Jun 2015	Weather	Sunny
D4	22 Jun 2015	Wind Speed (kts)	1.7
D4	22 Jun 2015	Wind Dir	W
D4	22 Jun 2015	Animal Life	None
D4	22 Jun 2015	Floatables	None
D4	22 Jun 2015	Water Color	Green
D4	22 Jun 2015	Current Direction	W
D4	22 Jun 2015	Wave Height Low (ft)	3
D4	22 Jun 2015	High Tide (ft)	3.9
D4	22 Jun 2015	High Tide Time	1458
D4	22 Jun 2015	Low Tide (ft)	0.6
D4	22 Jun 2015	Low Tide Time	804
D4	22 Jun 2015	Comments	Kelp; Seagrass; Algae; Water clear
D4	28 Jun 2015	Arrive Time	1120
D4	28 Jun 2015	Weather	Partly Cloudy
D4	28 Jun 2015	Wind Speed (kts)	3
D4	28 Jun 2015	Wind Dir	W
D4	28 Jun 2015	Animal Life	None
D4	28 Jun 2015	Floatables	None
D4	28 Jun 2015	Water Color	Green
D4	28 Jun 2015	Current Direction	W
D4	28 Jun 2015	Wave Height Low (ft)	3
D4	28 Jun 2015	High Tide (ft)	3.4
D4	28 Jun 2015	High Tide Time	754
D4	28 Jun 2015	Low Tide (ft)	1.8
D4	28 Jun 2015	Low Tide Time	1258
D4	28 Jun 2015	Comments	Kelp; Seagrass; Water turbid; Trash continues to clog access to the sample site.
D5	04 Jun 2015	Arrive Time	945
D5	04 Jun 2015	Weather	Overcast
D5	04 Jun 2015	Wind Speed (kts)	3
D5	04 Jun 2015	Wind Dir	W
D5	04 Jun 2015	Animal Life	None
D5	04 Jun 2015	Floatables	None
D5	04 Jun 2015	Water Color	Colorless
D5	04 Jun 2015	Current Direction	W
D5	04 Jun 2015	Wave Height Low (ft)	2
D5	04 Jun 2015	High Tide (ft)	3.8
D5	04 Jun 2015	High Tide Time	1138
D5	04 Jun 2015	Low Tide (ft)	-0.9
D5	04 Jun 2015	Low Tide Time	519
D5	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D5	10 Jun 2015	Arrive Time	901
D5	10 Jun 2015	Weather	Overcast

Station	Date	Parameter	Value
D5	10 Jun 2015	Wind Speed (kts)	2.4
D5	10 Jun 2015	Wind Dir	SW
D5	10 Jun 2015	Animal Life	None
D5	10 Jun 2015	Floatables	None
D5	10 Jun 2015	Water Color	Green
D5	10 Jun 2015	Current Direction	SW
D5	10 Jun 2015	Wave Height Low (ft)	2
D5	10 Jun 2015	High Tide (ft)	3.8
D5	10 Jun 2015	High Tide Time	411
D5	10 Jun 2015	Low Tide (ft)	0.6
D5	10 Jun 2015	Low Tide Time	1037
D5	10 Jun 2015	Comments	Water clear
D5	16 Jun 2015	Arrive Time	1046
D5	16 Jun 2015	Weather	Overcast
D5	16 Jun 2015	Wind Speed (kts)	4
D5	16 Jun 2015	Wind Dir	W
D5	16 Jun 2015	Animal Life	None
D5	16 Jun 2015	Floatables	None
D5	16 Jun 2015	Water Color	Green
D5	16 Jun 2015	Current Direction	W
D5	16 Jun 2015	Wave Height Low (ft)	3
D5	16 Jun 2015	High Tide (ft)	4
D5	16 Jun 2015	High Tide Time	1020
D5	16 Jun 2015	Low Tide (ft)	1.6
D5	16 Jun 2015	Low Tide Time	1528
D5	16 Jun 2015	Comments	Kelp; Seagrass; Water clear
D5	22 Jun 2015	Arrive Time	1024
D5	22 Jun 2015	Weather	Partly Cloudy
D5	22 Jun 2015	Wind Speed (kts)	5.4
D5	22 Jun 2015	Wind Dir	SW
D5	22 Jun 2015	Animal Life	None
D5	22 Jun 2015	Floatables	None
D5	22 Jun 2015	Water Color	Green
D5	22 Jun 2015	Current Direction	SW
D5	22 Jun 2015	Wave Height Low (ft)	2
D5	22 Jun 2015	High Tide (ft)	3.9
D5	22 Jun 2015	High Tide Time	1458
D5	22 Jun 2015	Low Tide (ft)	0.6
D5	22 Jun 2015	Low Tide Time	804
D5	22 Jun 2015	Comments	Kelp; Seagrass; Algae; Water clear
D5	28 Jun 2015	Arrive Time	1141
D5	28 Jun 2015	Weather	Partly Cloudy
D5	28 Jun 2015	Wind Speed (kts)	4
D5	28 Jun 2015	Wind Dir	W
D5	28 Jun 2015	Animal Life	None
D5	28 Jun 2015	Floatables	None

Station	Date	Parameter	Value
D5	28 Jun 2015	Water Color	Green
D5	28 Jun 2015	Current Direction	W
D5	28 Jun 2015	Wave Height Low (ft)	2
D5	28 Jun 2015	High Tide (ft)	3.4
D5	28 Jun 2015	High Tide Time	754
D5	28 Jun 2015	Low Tide (ft)	1.8
D5	28 Jun 2015	Low Tide Time	1258
D5	28 Jun 2015	Comments	Kelp; Seagrass; Water turbid; High humidity at all sample sites
D7	04 Jun 2015	Arrive Time	1004
D7	04 Jun 2015	Weather	Overcast
D7	04 Jun 2015	Wind Speed (kts)	3
D7	04 Jun 2015	Wind Dir	W
D7	04 Jun 2015	Animal Life	None
D7	04 Jun 2015	Floatables	None
D7	04 Jun 2015	Water Color	Colorless
D7	04 Jun 2015	Current Direction	W
D7	04 Jun 2015	Wave Height Low (ft)	4
D7	04 Jun 2015	High Tide (ft)	3.8
D7	04 Jun 2015	High Tide Time	1138
D7	04 Jun 2015	Low Tide (ft)	-0.9
D7	04 Jun 2015	Low Tide Time	519
D7	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D7	10 Jun 2015	Arrive Time	828
D7	10 Jun 2015	Weather	Overcast
D7	10 Jun 2015	Wind Speed (kts)	4.6
D7	10 Jun 2015	Wind Dir	SW
D7	10 Jun 2015	Animal Life	None
D7	10 Jun 2015	Floatables	None
D7	10 Jun 2015	Water Color	Green
D7	10 Jun 2015	Current Direction	SW
D7	10 Jun 2015	Wave Height Low (ft)	3
D7	10 Jun 2015	High Tide (ft)	3.8
D7	10 Jun 2015	High Tide Time	411
D7	10 Jun 2015	Low Tide (ft)	0.6
D7	10 Jun 2015	Low Tide Time	1037
D7	10 Jun 2015	Comments	4 Persons; 3 Surfers; Water clear
D7	16 Jun 2015	Arrive Time	946
D7	16 Jun 2015	Weather	Overcast
D7	16 Jun 2015	Wind Speed (kts)	3
D7	16 Jun 2015	Wind Dir	W
D7	16 Jun 2015	Animal Life	None
D7	16 Jun 2015	Floatables	None
D7	16 Jun 2015	Water Color	Green
D7	16 Jun 2015	Current Direction	W
D7	16 Jun 2015	Wave Height Low (ft)	4

Station	Date	Parameter	Value
D7	16 Jun 2015	High Tide (ft)	4
D7	16 Jun 2015	High Tide Time	1020
D7	16 Jun 2015	Low Tide (ft)	-1.1
D7	16 Jun 2015	Low Tide Time	404
D7	16 Jun 2015	Comments	Kelp; Seagrass; Small red crabs
D7	22 Jun 2015	Arrive Time	933
D7	22 Jun 2015	Weather	Sunny
D7	22 Jun 2015	Wind Speed (kts)	3.4
D7	22 Jun 2015	Wind Dir	SW
D7	22 Jun 2015	Animal Life	None
D7	22 Jun 2015	Floatables	None
D7	22 Jun 2015	Water Color	Green
D7	22 Jun 2015	Current Direction	SW
D7	22 Jun 2015	Wave Height Low (ft)	2
D7	22 Jun 2015	High Tide (ft)	3.9
D7	22 Jun 2015	High Tide Time	1458
D7	22 Jun 2015	Low Tide (ft)	0.6
D7	22 Jun 2015	Low Tide Time	804
D7	22 Jun 2015	Comments	Kelp; Seagrass; Water clear
D7	28 Jun 2015	Arrive Time	1052
D7	28 Jun 2015	Weather	Partly Cloudy
D7	28 Jun 2015	Wind Speed (kts)	4
D7	28 Jun 2015	Wind Dir	W
D7	28 Jun 2015	Animal Life	None
D7	28 Jun 2015	Floatables	None
D7	28 Jun 2015	Water Color	Green
D7	28 Jun 2015	Current Direction	W
D7	28 Jun 2015	Wave Height Low (ft)	4
D7	28 Jun 2015	High Tide (ft)	3.4
D7	28 Jun 2015	High Tide Time	754
D7	28 Jun 2015	Low Tide (ft)	1.8
D7	28 Jun 2015	Low Tide Time	1258
D7	28 Jun 2015	Comments	Kelp; Seagrass; 3 Surfers; Water turbid
D8	04 Jun 2015	Arrive Time	847
D8	04 Jun 2015	Weather	Overcast
D8	04 Jun 2015	Wind Speed (kts)	4
D8	04 Jun 2015	Wind Dir	W
D8	04 Jun 2015	Animal Life	None
D8	04 Jun 2015	Floatables	None
D8	04 Jun 2015	Water Color	Colorless
D8	04 Jun 2015	Current Direction	W
D8	04 Jun 2015	Wave Height Low (ft)	2
D8	04 Jun 2015	High Tide (ft)	3.8
D8	04 Jun 2015	High Tide Time	1138
D8	04 Jun 2015	Low Tide (ft)	-0.9
D8	04 Jun 2015	Low Tide Time	519

Station	Date	Parameter	Value
D8	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D8	10 Jun 2015	Arrive Time	813
D8	10 Jun 2015	Weather	Overcast
D8	10 Jun 2015	Wind Speed (kts)	4.8
D8	10 Jun 2015	Wind Dir	SW
D8	10 Jun 2015	Animal Life	None
D8	10 Jun 2015	Floatables	None
D8	10 Jun 2015	Water Color	Green
D8	10 Jun 2015	Current Direction	SW
D8	10 Jun 2015	Wave Height Low (ft)	3
D8	10 Jun 2015	High Tide (ft)	3.8
D8	10 Jun 2015	High Tide Time	411
D8	10 Jun 2015	Low Tide (ft)	0.6
D8	10 Jun 2015	Low Tide Time	1037
D8	10 Jun 2015	Comments	Kelp; Seagrass; Water turbid
D8	16 Jun 2015	Arrive Time	936
D8	16 Jun 2015	Weather	Overcast
D8	16 Jun 2015	Wind Speed (kts)	4
D8	16 Jun 2015	Wind Dir	W
D8	16 Jun 2015	Animal Life	None
D8	16 Jun 2015	Floatables	None
D8	16 Jun 2015	Water Color	Green
D8	16 Jun 2015	Current Direction	W
D8	16 Jun 2015	Wave Height Low (ft)	4
D8	16 Jun 2015	High Tide (ft)	4
D8	16 Jun 2015	High Tide Time	1020
D8	16 Jun 2015	Low Tide (ft)	-1.1
D8	16 Jun 2015	Low Tide Time	404
D8	16 Jun 2015	Comments	Kelp; Seagrass; Water turbid
D8	22 Jun 2015	Arrive Time	916
D8	22 Jun 2015	Weather	Sunny
D8	22 Jun 2015	Wind Speed (kts)	2.7
D8	22 Jun 2015	Wind Dir	SW
D8	22 Jun 2015	Animal Life	2 Dogs
D8	22 Jun 2015	Floatables	None
D8	22 Jun 2015	Water Color	Green
D8	22 Jun 2015	Current Direction	SW
D8	22 Jun 2015	Wave Height Low (ft)	3
D8	22 Jun 2015	High Tide (ft)	3.9
D8	22 Jun 2015	High Tide Time	1458
D8	22 Jun 2015	Low Tide (ft)	0.6
D8	22 Jun 2015	Low Tide Time	804
D8	22 Jun 2015	Comments	Kelp; Seagrass; Algae; 4 Persons; Water clear
D8	28 Jun 2015	Arrive Time	1040

Station	Date	Parameter	Value
D8	28 Jun 2015	Weather	Partly Cloudy
D8	28 Jun 2015	Wind Speed (kts)	4
D8	28 Jun 2015	Wind Dir	W
D8	28 Jun 2015	Animal Life	None
D8	28 Jun 2015	Floatables	None
D8	28 Jun 2015	Water Color	Green
D8	28 Jun 2015	Current Direction	W
D8	28 Jun 2015	Wave Height Low (ft)	3
D8	28 Jun 2015	High Tide (ft)	3.4
D8	28 Jun 2015	High Tide Time	754
D8	28 Jun 2015	Low Tide (ft)	1.8
D8	28 Jun 2015	Low Tide Time	1258
D8	28 Jun 2015	Comments	Kelp; Seagrass; 12 Persons; Water turbid
D9	04 Jun 2015	Arrive Time	834
D9	04 Jun 2015	Weather	Overcast
D9	04 Jun 2015	Wind Speed (kts)	5
D9	04 Jun 2015	Wind Dir	W
D9	04 Jun 2015	Animal Life	None
D9	04 Jun 2015	Floatables	None
D9	04 Jun 2015	Water Color	Colorless
D9	04 Jun 2015	Current Direction	W
D9	04 Jun 2015	Wave Height Low (ft)	4
D9	04 Jun 2015	High Tide (ft)	3.8
D9	04 Jun 2015	High Tide Time	1138
D9	04 Jun 2015	Low Tide (ft)	-0.9
D9	04 Jun 2015	Low Tide Time	519
D9	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D9	10 Jun 2015	Arrive Time	804
D9	10 Jun 2015	Weather	Overcast
D9	10 Jun 2015	Wind Speed (kts)	4.8
D9	10 Jun 2015	Wind Dir	SW
D9	10 Jun 2015	Animal Life	1 Dog
D9	10 Jun 2015	Floatables	None
D9	10 Jun 2015	Water Color	Green
D9	10 Jun 2015	Current Direction	SW
D9	10 Jun 2015	Wave Height Low (ft)	4
D9	10 Jun 2015	High Tide (ft)	3.8
D9	10 Jun 2015	High Tide Time	411
D9	10 Jun 2015	Low Tide (ft)	0.6
D9	10 Jun 2015	Low Tide Time	1037
D9	10 Jun 2015	Comments	5 Persons; Water clear
D9	16 Jun 2015	Arrive Time	1116
D9	16 Jun 2015	Weather	Overcast
D9	16 Jun 2015	Wind Speed (kts)	3
D9	16 Jun 2015	Wind Dir	W
D9	16 Jun 2015	Animal Life	None

Station	Date	Parameter	Value
D9	16 Jun 2015	Floatables	None
D9	16 Jun 2015	Water Color	Green
D9	16 Jun 2015	Current Direction	W
D9	16 Jun 2015	Wave Height Low (ft)	3
D9	16 Jun 2015	High Tide (ft)	4
D9	16 Jun 2015	High Tide Time	1020
D9	16 Jun 2015	Low Tide (ft)	1.6
D9	16 Jun 2015	Low Tide Time	1528
D9	16 Jun 2015	Comments	Kelp; Seagrass; Water clear
D9	22 Jun 2015	Arrive Time	902
D9	22 Jun 2015	Weather	Partly Cloudy
D9	22 Jun 2015	Wind Speed (kts)	3.8
D9	22 Jun 2015	Wind Dir	W
D9	22 Jun 2015	Animal Life	None
D9	22 Jun 2015	Floatables	None
D9	22 Jun 2015	Water Color	Green
D9	22 Jun 2015	Current Direction	W
D9	22 Jun 2015	Wave Height Low (ft)	2
D9	22 Jun 2015	High Tide (ft)	3.9
D9	22 Jun 2015	High Tide Time	1458
D9	22 Jun 2015	Low Tide (ft)	0.6
D9	22 Jun 2015	Low Tide Time	804
D9	22 Jun 2015	Comments	Kelp; Seagrass; Algae; Water clear
D9	28 Jun 2015	Arrive Time	1026
D9	28 Jun 2015	Weather	Partly Cloudy
D9	28 Jun 2015	Wind Speed (kts)	4
D9	28 Jun 2015	Wind Dir	W
D9	28 Jun 2015	Animal Life	None
D9	28 Jun 2015	Floatables	None
D9	28 Jun 2015	Water Color	Green
D9	28 Jun 2015	Current Direction	W
D9	28 Jun 2015	Wave Height Low (ft)	3
D9	28 Jun 2015	High Tide (ft)	3.4
D9	28 Jun 2015	High Tide Time	754
D9	28 Jun 2015	Low Tide (ft)	1.8
D9	28 Jun 2015	Low Tide Time	1258
D9	28 Jun 2015	Comments	Kelp; Seagrass; Water turbid
D10	04 Jun 2015	Arrive Time	821
D10	04 Jun 2015	Weather	Overcast
D10	04 Jun 2015	Wind Speed (kts)	4
D10	04 Jun 2015	Wind Dir	W
D10	04 Jun 2015	Animal Life	None
D10	04 Jun 2015	Floatables	None
D10	04 Jun 2015	Water Color	Colorless
D10	04 Jun 2015	Current Direction	W
D10	04 Jun 2015	Wave Height Low (ft)	2

Station	Date	Parameter	Value
D10	04 Jun 2015	High Tide (ft)	3.8
D10	04 Jun 2015	High Tide Time	1138
D10	04 Jun 2015	Low Tide (ft)	-0.9
D10	04 Jun 2015	Low Tide Time	519
D10	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D10	10 Jun 2015	Arrive Time	755
D10	10 Jun 2015	Weather	Overcast
D10	10 Jun 2015	Wind Speed (kts)	5.2
D10	10 Jun 2015	Wind Dir	SW
D10	10 Jun 2015	Animal Life	None
D10	10 Jun 2015	Floatables	None
D10	10 Jun 2015	Water Color	Green
D10	10 Jun 2015	Current Direction	SW
D10	10 Jun 2015	Wave Height Low (ft)	3
D10	10 Jun 2015	High Tide (ft)	3.8
D10	10 Jun 2015	High Tide Time	411
D10	10 Jun 2015	Low Tide (ft)	0.6
D10	10 Jun 2015	Low Tide Time	1037
D10	10 Jun 2015	Comments	Kelp; Seagrass; 8 Surfers; Water clear
D10	16 Jun 2015	Arrive Time	1120
D10	16 Jun 2015	Weather	Overcast
D10	16 Jun 2015	Wind Speed (kts)	3
D10	16 Jun 2015	Wind Dir	W
D10	16 Jun 2015	Animal Life	None
D10	16 Jun 2015	Floatables	None
D10	16 Jun 2015	Water Color	Blue
D10	16 Jun 2015	Current Direction	W
D10	16 Jun 2015	Wave Height Low (ft)	2
D10	16 Jun 2015	High Tide (ft)	4
D10	16 Jun 2015	High Tide Time	1020
D10	16 Jun 2015	Low Tide (ft)	1.6
D10	16 Jun 2015	Low Tide Time	1528
D10	16 Jun 2015	Comments	Kelp; Seagrass; 8 Surfers; Water clear
D10	22 Jun 2015	Arrive Time	850
D10	22 Jun 2015	Weather	Partly Cloudy
D10	22 Jun 2015	Wind Speed (kts)	3.6
D10	22 Jun 2015	Wind Dir	SW
D10	22 Jun 2015	Animal Life	None
D10	22 Jun 2015	Floatables	None
D10	22 Jun 2015	Water Color	Green
D10	22 Jun 2015	Current Direction	SW
D10	22 Jun 2015	Wave Height Low (ft)	3
D10	22 Jun 2015	High Tide (ft)	3.9
D10	22 Jun 2015	High Tide Time	1458
D10	22 Jun 2015	Low Tide (ft)	0.6
D10	22 Jun 2015	Low Tide Time	804

Station	Date	Parameter	Value
D10	22 Jun 2015	Comments	Kelp; Seagrass; 8 Persons; 2 Surfers; Water clear
D10	28 Jun 2015	Arrive Time	1012
D10	28 Jun 2015	Weather	Partly Cloudy
D10	28 Jun 2015	Wind Speed (kts)	4
D10	28 Jun 2015	Wind Dir	W
D10	28 Jun 2015	Animal Life	None
D10	28 Jun 2015	Floatables	None
D10	28 Jun 2015	Water Color	Green
D10	28 Jun 2015	Current Direction	W
D10	28 Jun 2015	Wave Height Low (ft)	3
D10	28 Jun 2015	High Tide (ft)	3.4
D10	28 Jun 2015	High Tide Time	754
D10	28 Jun 2015	Low Tide (ft)	1.8
D10	28 Jun 2015	Low Tide Time	1258
D10	28 Jun 2015	Comments	Kelp; Seagrass; 21 Swimmers; Water turbid
D11	04 Jun 2015	Arrive Time	808
D11	04 Jun 2015	Weather	Overcast
D11	04 Jun 2015	Wind Speed (kts)	4
D11	04 Jun 2015	Wind Dir	W
D11	04 Jun 2015	Animal Life	None
D11	04 Jun 2015	Floatables	None
D11	04 Jun 2015	Water Color	Colorless
D11	04 Jun 2015	Current Direction	W
D11	04 Jun 2015	Wave Height Low (ft)	2
D11	04 Jun 2015	High Tide (ft)	3.8
D11	04 Jun 2015	High Tide Time	1138
D11	04 Jun 2015	Low Tide (ft)	-0.9
D11	04 Jun 2015	Low Tide Time	519
D11	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D11	10 Jun 2015	Arrive Time	742
D11	10 Jun 2015	Weather	Overcast
D11	10 Jun 2015	Wind Speed (kts)	4.8
D11	10 Jun 2015	Wind Dir	SW
D11	10 Jun 2015	Animal Life	None
D11	10 Jun 2015	Floatables	None
D11	10 Jun 2015	Water Color	Green
D11	10 Jun 2015	Current Direction	SW
D11	10 Jun 2015	Wave Height Low (ft)	4
D11	10 Jun 2015	High Tide (ft)	3.8
D11	10 Jun 2015	High Tide Time	411
D11	10 Jun 2015	Low Tide (ft)	0.6
D11	10 Jun 2015	Low Tide Time	1037
D11	10 Jun 2015	Comments	Water clear

Station	Date	Parameter	Value
D11	16 Jun 2015	Arrive Time	920
D11	16 Jun 2015	Weather	Overcast
D11	16 Jun 2015	Wind Speed (kts)	4
D11	16 Jun 2015	Wind Dir	W
D11	16 Jun 2015	Animal Life	None
D11	16 Jun 2015	Floatables	None
D11	16 Jun 2015	Water Color	Blue
D11	16 Jun 2015	Current Direction	W
D11	16 Jun 2015	Wave Height Low (ft)	2
D11	16 Jun 2015	High Tide (ft)	4
D11	16 Jun 2015	High Tide Time	1020
D11	16 Jun 2015	Low Tide (ft)	-1.1
D11	16 Jun 2015	Low Tide Time	404
D11	16 Jun 2015	Comments	Kelp; Seagrass; 9 Surfers; Water clear
D11	22 Jun 2015	Arrive Time	837
D11	22 Jun 2015	Weather	Overcast
D11	22 Jun 2015	Wind Speed (kts)	1.9
D11	22 Jun 2015	Wind Dir	W
D11	22 Jun 2015	Animal Life	None
D11	22 Jun 2015	Floatables	None
D11	22 Jun 2015	Water Color	Green
D11	22 Jun 2015	Current Direction	W
D11	22 Jun 2015	Wave Height Low (ft)	2
D11	22 Jun 2015	High Tide (ft)	3.9
D11	22 Jun 2015	High Tide Time	1458
D11	22 Jun 2015	Low Tide (ft)	0.6
D11	22 Jun 2015	Low Tide Time	804
D11	22 Jun 2015	Comments	Seagrass; 1 Surfer; Water clear
D11	28 Jun 2015	Arrive Time	1000
D11	28 Jun 2015	Weather	Partly Cloudy
D11	28 Jun 2015	Wind Speed (kts)	3
D11	28 Jun 2015	Wind Dir	W
D11	28 Jun 2015	Animal Life	None
D11	28 Jun 2015	Floatables	None
D11	28 Jun 2015	Water Color	Green
D11	28 Jun 2015	Current Direction	W
D11	28 Jun 2015	Wave Height Low (ft)	2
D11	28 Jun 2015	High Tide (ft)	3.4
D11	28 Jun 2015	High Tide Time	754
D11	28 Jun 2015	Low Tide (ft)	1.8
D11	28 Jun 2015	Low Tide Time	1258
D11	28 Jun 2015	Comments	Kelp; Seagrass; Water turbid
D12	04 Jun 2015	Arrive Time	753
D12	04 Jun 2015	Weather	Overcast
D12	04 Jun 2015	Wind Speed (kts)	4
D12	04 Jun 2015	Wind Dir	W

Station	Date	Parameter	Value
D12	04 Jun 2015	Animal Life	None
D12	04 Jun 2015	Floatables	None
D12	04 Jun 2015	Water Color	Colorless
D12	04 Jun 2015	Current Direction	W
D12	04 Jun 2015	Wave Height Low (ft)	2
D12	04 Jun 2015	High Tide (ft)	3.8
D12	04 Jun 2015	High Tide Time	1138
D12	04 Jun 2015	Low Tide (ft)	-0.9
D12	04 Jun 2015	Low Tide Time	519
D12	04 Jun 2015	Comments	Kelp; Seagrass; Water clear
D12	10 Jun 2015	Arrive Time	727
D12	10 Jun 2015	Weather	Overcast
D12	10 Jun 2015	Wind Speed (kts)	5.1
D12	10 Jun 2015	Wind Dir	SW
D12	10 Jun 2015	Animal Life	None
D12	10 Jun 2015	Floatables	None
D12	10 Jun 2015	Water Color	Green
D12	10 Jun 2015	Current Direction	SW
D12	10 Jun 2015	Wave Height Low (ft)	3
D12	10 Jun 2015	High Tide (ft)	3.8
D12	10 Jun 2015	High Tide Time	411
D12	10 Jun 2015	Low Tide (ft)	0.6
D12	10 Jun 2015	Low Tide Time	1037
D12	10 Jun 2015	Comments	Kelp; Seagrass; 2 Persons; Water clear
D12	16 Jun 2015	Arrive Time	900
D12	16 Jun 2015	Weather	Overcast
D12	16 Jun 2015	Wind Speed (kts)	4
D12	16 Jun 2015	Wind Dir	W
D12	16 Jun 2015	Animal Life	None
D12	16 Jun 2015	Floatables	None
D12	16 Jun 2015	Water Color	Blue
D12	16 Jun 2015	Current Direction	W
D12	16 Jun 2015	Wave Height Low (ft)	2
D12	16 Jun 2015	High Tide (ft)	4
D12	16 Jun 2015	High Tide Time	1020
D12	16 Jun 2015	Low Tide (ft)	-1.1
D12	16 Jun 2015	Low Tide Time	404
D12	16 Jun 2015	Comments	Kelp; Seagrass; 7 Swimmers; Water clear
D12	22 Jun 2015	Arrive Time	817
D12	22 Jun 2015	Weather	Overcast
D12	22 Jun 2015	Wind Speed (kts)	0.7
D12	22 Jun 2015	Wind Dir	W
D12	22 Jun 2015	Animal Life	None
D12	22 Jun 2015	Floatables	None
D12	22 Jun 2015	Water Color	Green
D12	22 Jun 2015	Current Direction	W

Station	Date	Parameter	Value
D12	22 Jun 2015	Wave Height Low (ft)	3
D12	22 Jun 2015	High Tide (ft)	3.9
D12	22 Jun 2015	High Tide Time	1458
D12	22 Jun 2015	Low Tide (ft)	0.6
D12	22 Jun 2015	Low Tide Time	804
D12	22 Jun 2015	Comments	Seagrass; Water clear
D12	28 Jun 2015	Arrive Time	828
D12	28 Jun 2015	Weather	Partly Cloudy
D12	28 Jun 2015	Wind Speed (kts)	3
D12	28 Jun 2015	Wind Dir	W
D12	28 Jun 2015	Animal Life	20 Seagulls
D12	28 Jun 2015	Floatables	None
D12	28 Jun 2015	Water Color	Green
D12	28 Jun 2015	Current Direction	W
D12	28 Jun 2015	Wave Height Low (ft)	2
D12	28 Jun 2015	High Tide (ft)	3.4
D12	28 Jun 2015	High Tide Time	754
D12	28 Jun 2015	Low Tide (ft)	1.8
D12	28 Jun 2015	Low Tide Time	1258
D12	28 Jun 2015	Comments	Kelp; Seagrass; Water turbid

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Kelp Stations

Table 3.1

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for total coliforms 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 Jun 2015	5	9	3	3	2	3	3	3
02 Jun 2015	5	9	3	3	2	3	3	3
03 Jun 2015	4*	8*	3*	3*	2*	2*	3*	3*
04 Jun 2015	4*	8*	3*	3*	2*	2*	3*	3*
05 Jun 2015	4*	8*	3*	3*	2*	2*	3*	3*
06 Jun 2015	4	6	5	3	2	2	2	3
07 Jun 2015	4	6	5	3	2	2	2	3
08 Jun 2015	4	6	5	3	2	2	2	3
09 Jun 2015	4	6	5	3	2	2	2	3
10 Jun 2015	6	7	8	3	3	3	3	3
11 Jun 2015	6	7	8	3	3	3	3	3
12 Jun 2015	6	7	8	3	3	3	3	3
13 Jun 2015	6	7	8	3	3	3	3	3
14 Jun 2015	8	6	9	3	3	3	4	3
15 Jun 2015	8	6	9	3	3	3	4	3
16 Jun 2015	8	6	9	3	3	3	4	3
17 Jun 2015	8	6	9	3	3	3	4	3
18 Jun 2015	8	5	9	3	3	3	3	3
19 Jun 2015	8	5	9	3	3	3	3	3
20 Jun 2015	8	3	11	3	3	3	3	3
21 Jun 2015	8	3	11	3	3	3	3	3
22 Jun 2015	9	3	10	3	3	3	3	3
23 Jun 2015	9	3	10	3	3	3	3	3
24 Jun 2015	9	3	10	3	3	3	3	3
25 Jun 2015	9	3	10	3	3	3	3	3
26 Jun 2015	12	3	13	3	3	3	3	3
27 Jun 2015	12	3	13	3	3	3	3	3
28 Jun 2015	12	3	13	3	3	3	3	3
29 Jun 2015	12	3	13	3	3	3	3	3
30 Jun 2015	13*	3*	21*	3*	3*	3*	3*	3*

* Geometric mean calculated using an n<5

Table 3.2

Summary of compliance with the 2009 Ocean Plan's 30-day Geometric Mean standard for fecal coliform 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 Jun 2015	2	2	2	2	2	2	2	2
02 Jun 2015	2	2	2	2	2	2	2	2
03 Jun 2015	2*	2*	2*	2*	2*	2*	2*	2*
04 Jun 2015	2*	2*	2*	2*	2*	2*	2*	2*
05 Jun 2015	2*	2*	2*	2*	2*	2*	2*	2*
06 Jun 2015	2	2	2	2	2	2	2	2
07 Jun 2015	2	2	2	2	2	2	2	2
08 Jun 2015	2	2	2	2	2	2	2	2
09 Jun 2015	2	2	2	2	2	2	2	2
10 Jun 2015	2	2	2	2	2	2	2	2
11 Jun 2015	2	2	2	2	2	2	2	2
12 Jun 2015	2	2	2	2	2	2	2	2
13 Jun 2015	2	2	2	2	2	2	2	2
14 Jun 2015	2	2	2	2	2	2	2	2
15 Jun 2015	2	2	2	2	2	2	2	2
16 Jun 2015	2	2	2	2	2	2	2	2
17 Jun 2015	2	2	2	2	2	2	2	2
18 Jun 2015	2	2	2	2	2	2	2	2
19 Jun 2015	2	2	2	2	2	2	2	2
20 Jun 2015	2	2	2	2	2	2	2	2
21 Jun 2015	2	2	2	2	2	2	2	2
22 Jun 2015	2	2	2	2	2	2	2	2
23 Jun 2015	2	2	2	2	2	2	2	2
24 Jun 2015	2	2	2	2	2	2	2	2
25 Jun 2015	2	2	2	2	2	2	2	2
26 Jun 2015	2	2	2	2	2	2	2	2
27 Jun 2015	2	2	2	2	2	2	2	2
28 Jun 2015	2	2	2	2	2	2	2	2
29 Jun 2015	2	2	2	2	2	2	2	2
30 Jun 2015	2*	2*	2*	2*	2*	2*	2*	2*

* Geometric mean calculated using an n<5

Table 3.3

Summary of compliance with the 2009 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 Jun 2015	2	2	2	2	2	3	2	2
02 Jun 2015	2	2	2	2	2	3	2	2
03 Jun 2015	2*	2*	2*	2*	2*	3*	2*	2*
04 Jun 2015	2*	2*	2*	2*	2*	3*	2*	2*
05 Jun 2015	2*	2*	2*	2*	2*	3*	2*	2*
06 Jun 2015	2	2	2	2	2	3	2	2
07 Jun 2015	2	2	2	2	2	3	2	2
08 Jun 2015	2	2	2	2	2	3	2	2
09 Jun 2015	2	2	2	2	2	3	2	2
10 Jun 2015	2	2	2	2	2	3	2	2
11 Jun 2015	2	2	2	2	2	3	2	2
12 Jun 2015	2	2	2	2	2	3	2	2
13 Jun 2015	2	2	2	2	2	3	2	2
14 Jun 2015	2	2	2	2	2	3	2	2
15 Jun 2015	2	2	2	2	2	3	2	2
16 Jun 2015	2	2	2	2	2	3	2	2
17 Jun 2015	2	2	2	2	2	3	2	2
18 Jun 2015	2	2	2	2	2	3	2	2
19 Jun 2015	2	2	2	2	2	3	2	2
20 Jun 2015	2	2	2	2	2	3	2	2
21 Jun 2015	2	2	2	2	2	3	2	2
22 Jun 2015	2	2	2	2	2	3	2	2
23 Jun 2015	2	2	2	2	2	3	2	2
24 Jun 2015	2	2	2	2	2	3	2	2
25 Jun 2015	2	2	2	2	2	3	2	2
26 Jun 2015	2	2	2	2	2	2	2	2
27 Jun 2015	2	2	2	2	2	2	2	2
28 Jun 2015	2	2	2	2	2	2	2	2
29 Jun 2015	2	2	2	2	2	2	2	2
30 Jun 2015	2*	2*	2*	2*	2*	2*	2*	2*

* Geometric mean calculated using an n<5

Table 3.4

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliform bacteria, which states that total coliform density shall not exceed 10,000 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
06 Jun 2015	IC							
10 Jun 2015	IC							
18 Jun 2015	IC							
22 Jun 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

Table 3.5

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for fecal coliform bacteria, which states that fecal coliform density shall not exceed 400 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
06 Jun 2015	IC							
10 Jun 2015	IC							
18 Jun 2015	IC							
22 Jun 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

Table 3.6

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 104 CFU/100 mL.

Date	A1	A6	A7	C4	C5	C6	C7	C8
06 Jun 2015	IC							
10 Jun 2015	IC							
18 Jun 2015	IC							
22 Jun 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

Table 3.7

Summary of compliance at the PLOO kelp stations with the 2009 Ocean Plan's Single Sample Maximum standard for total coliforms and the fecal/total coliform ratio (F:T), which states that total coliform density shall not exceed 1,000 CFU/100 mL when F:T > 0.1.

Date	A1	A6	A7	C4	C5	C6	C7	C8
06 Jun 2015	IC							
10 Jun 2015	IC							
18 Jun 2015	IC							
22 Jun 2015	IC							

IC = In Compliance

E = Exceedance

ns = not sampled

Table 3.8

Summary of water quality parameters at the PLOO kelp stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal) and *Enterococcus* (Enter) bacteria are reported as CFU/100 mL; the fecal:total coliform ratio (F:T) is unitless; ammonium (N-NH₃) values are reported as mL/L; values for temperature (Temp, °C), transmissivity (XMS, %), dissolved oxygen (DO, mg/L), salinity (Sal, ppt) and pH were extracted from CTD profile data for depths closest to those at which the bacteriological samples were collected. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	N-NH ₃	Temp	XMS	DO	Sal	pH
A1	06 Jun 2015	751	1	<2	<2	<2	1.000	ns	15.6	77.58	9.3	33.41	8.2
A1	06 Jun 2015	751	12	4e	<2	<2	0.500	ns	14.9	77.41	8.6	33.41	8.1
A1	06 Jun 2015	751	18	2e	<2	2e	1.000	ns	11.9	83.34	5.6	33.50	7.9
A1	10 Jun 2015	746	1	<200	<2	<2	0.010	ns	17.8	85.83	8.2	33.39	8.2
A1	10 Jun 2015	746	12	<20	<2	<2	0.100	ns	12.8	86.41	6.7	33.42	8.0
A1	10 Jun 2015	746	18	<2	<2	<2	1.000	ns	11.6	89.41	5.2	33.48	7.9
A1	18 Jun 2015	801	1	<2	<2	<2	1.000	ns	17.3	89.46	8.4	33.39	8.2
A1	18 Jun 2015	801	12	<20	<2	<2	0.100	ns	14.9	89.13	7.4	33.40	8.1
A1	18 Jun 2015	801	18	<2	<2	<2	1.000	ns	12.9	90.19	6.2	33.43	8.0
A1	22 Jun 2015	915	1	<20	<2	<2	0.100	ns	19.2	81.66	10.1	33.42	8.4
A1	22 Jun 2015	915	12	<20	<2	<2	0.100	ns	16.9	83.51	7.8	33.36	8.2
A1	22 Jun 2015	915	18	<20	<2	<2	0.100	ns	14.3	85.95	6.9	33.37	8.1
C4	06 Jun 2015	950	1	2e	<2	<2	1.000	ns	16.8	75.93	8.2	33.41	8.2
C4	06 Jun 2015	950	3	<2	<2	<2	1.000	ns	16.1	75.60	8.5	33.40	8.2
C4	06 Jun 2015	950	9	<2	<2	<2	1.000	ns	13.5	78.15	5.9	33.42	8.0
C4	10 Jun 2015	945	1	<20	<2	<2	0.100	ns	15.7	84.52	9.1	33.42	8.3
C4	10 Jun 2015	945	3	<2	<2	<2	1.000	ns	15.3	84.12	8.1	33.40	8.2
C4	10 Jun 2015	945	9	<2	<2	<2	1.000	ns	13.2	79.11	5.2	33.44	8.0
C4	18 Jun 2015	1007	1	2e	<2	<2	1.000	ns	18.2	82.18	8.4	33.43	8.3
C4	18 Jun 2015	1007	3	8e	2e	<2	0.250	ns	17.8	81.97	8.2	33.42	8.2
C4	18 Jun 2015	1007	9	2e	<2	<2	1.000	ns	16.8	81.60	7.7	33.43	8.2
C4	22 Jun 2015	1132	1	<2	<2	<2	1.000	ns	19.9	72.20	8.2	33.42	8.3
C4	22 Jun 2015	1132	3	<2	<2	<2	1.000	ns	20.0	72.04	8.3	33.41	8.3
C4	22 Jun 2015	1132	9	<2	<2	<2	1.000	ns	18.4	75.18	8.4	33.44	8.3
C5	06 Jun 2015	939	1	<2	<2	<2	1.000	ns	16.8	75.05	8.8	33.42	8.2
C5	06 Jun 2015	939	3	<2	<2	<2	1.000	ns	16.3	75.19	8.9	33.40	8.2
C5	06 Jun 2015	939	9	<2	<2	<2	1.000	ns	13.9	76.61	6.5	33.37	8.1
C5	10 Jun 2015	932	1	<20	<2	<2	0.100	ns	16.6	77.05	8.0	33.43	8.2
C5	10 Jun 2015	932	3	2e	<2	<2	1.000	ns	16.5	77.09	8.0	33.42	8.2
C5	10 Jun 2015	932	9	2e	<2	<2	1.000	ns	13.5	80.19	6.8	33.45	8.1
C5	18 Jun 2015	950	1	<2	<2	<2	1.000	ns	18.5	76.27	8.3	33.40	8.3
C5	18 Jun 2015	950	3	2e	<2	<2	1.000	ns	18.4	79.97	8.3	33.44	8.3
C5	18 Jun 2015	950	9	<2	<2	<2	1.000	ns	16.0	82.45	7.9	33.43	8.2
C5	22 Jun 2015	1117	1	<2	<2	<2	1.000	ns	20.5	80.34	9.2	33.43	8.4
C5	22 Jun 2015	1117	3	<2	<2	<2	1.000	ns	20.0	79.88	9.3	33.41	8.4
C5	22 Jun 2015	1117	9	<2	<2	<2	1.000	ns	17.6	78.42	9.1	33.36	8.3

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	N-NH3	Temp	XMS	DO	Sal	pH
A6	06 Jun 2015	824	1	<2	<2	<2	1.000	ns	15.8	76.17	8.9	33.42	8.2
	06 Jun 2015	824	12	2e	<2	<2	1.000	ns	12.9	82.03	6.7	33.43	8.0
	06 Jun 2015	824	18	<2	<2	<2	1.000	ns	12.7	82.49	6.4	33.46	8.0
A6	10 Jun 2015	822	1	<20	<2	<2	0.100	ns	17.6	83.97	8.2	33.39	8.2
	10 Jun 2015	822	12	4e	<2	<2	0.500	ns	13.6	84.50	7.0	33.42	8.1
	10 Jun 2015	822	18	4e	<2	<2	0.500	ns	11.3	89.20	5.5	33.48	7.9
A6	18 Jun 2015	834	1	<2	<2	<2	1.000	ns	18.0	78.46	9.0	33.41	8.3
	18 Jun 2015	834	12	8e	<2	<2	0.250	ns	13.6	89.45	6.6	33.42	8.1
	18 Jun 2015	834	18	2e	2e	<2	1.000	ns	12.8	90.57	5.9	33.45	8.0
A6	22 Jun 2015	953	1	<2	<2	<2	1.000	ns	19.2	78.09	9.1	33.35	8.3
	22 Jun 2015	953	12	<2	<2	<2	1.000	ns	17.9	81.22	8.7	33.38	8.3
	22 Jun 2015	953	18	<2	<2	<2	1.000	ns	13.9	86.96	7.3	33.33	8.1
C6	06 Jun 2015	923	1	<2	<2	<2	1.000	ns	16.7	74.60	8.8	33.43	8.2
	06 Jun 2015	923	3	2e	<2	<2	1.000	ns	16.2	74.38	9.1	33.41	8.2
	06 Jun 2015	923	9	<2	<2	<2	1.000	ns	12.9	76.91	6.2	33.46	8.0
C6	10 Jun 2015	9018	1	<20	<2	<2	0.100	ns	16.5	78.21	8.6	33.42	8.2
	10 Jun 2015	9018	3	<2	<2	<2	1.000	ns	16.1	78.26	8.8	33.42	8.2
	10 Jun 2015	9018	9	2e	<2	<2	1.000	ns	13.1	80.23	5.8	33.41	8.0
C6	18 Jun 2015	931	1	<2	<2	<2	1.000	ns	18.6	84.01	9.0	33.41	8.3
	18 Jun 2015	931	3	<2	<2	<2	1.000	ns	17.9	83.87	9.2	33.39	8.3
	18 Jun 2015	931	9	<2	<2	<2	1.000	ns	15.7	80.17	7.8	33.39	8.2
C6	22 Jun 2015	1101	1	<2	<2	<2	1.000	ns	16.8	80.67	9.5	33.41	8.3
	22 Jun 2015	1101	3	<2	<2	<2	1.000	ns	19.6	82.69	9.4	33.40	8.4
	22 Jun 2015	1101	9	<2	<2	<2	1.000	ns	17.4	81.03	9.3	33.33	8.3
A7	06 Jun 2015	805	1	<2	<2	<2	1.000	ns	15.9	63.80	8.8	33.41	8.2
	06 Jun 2015	805	12	260e	2e	<2	0.008	ns	13.2	76.52	7.3	33.40	8.1
	06 Jun 2015	805	18	<2	<2	<2	1.000	ns	12.2	81.59	6.1	33.46	8.0
A7	10 Jun 2015	803	1	<200	<2	<2	0.010	ns	17.3	85.27	8.4	33.38	8.2
	10 Jun 2015	803	12	<2	<2	<2	1.000	ns	12.7	84.15	6.2	33.44	8.0
	10 Jun 2015	803	18	<20	<2	<2	0.100	ns	11.5	87.38	5.3	33.49	7.9
A7	18 Jun 2015	814	1	<2	<2	<2	1.000	ns	18.1	75.33	8.9	33.41	8.3
	18 Jun 2015	814	12	<2	<2	<2	1.000	ns	14.8	88.82	7.5	33.40	8.1
	18 Jun 2015	814	18	18e	2e	<2	0.111	ns	13.2	89.96	6.2	33.44	8.0
A7	22 Jun 2015	936	1	<2	<2	<2	1.000	ns	19.6	80.11	9.4	33.41	8.3
	22 Jun 2015	936	12	<2	<2	<2	1.000	ns	17.8	81.24	8.6	33.39	8.2
	22 Jun 2015	936	18	8e	<2	<2	0.250	ns	14.0	85.22	7.1	33.35	8.1
C7	06 Jun 2015	843	1	<2	<2	<2	1.000	ns	16.0	73.39	9.6	33.41	8.3
	06 Jun 2015	843	12	<2	<2	<2	1.000	ns	13.8	75.61	7.4	33.40	8.2
	06 Jun 2015	843	18	2e	<2	<2	1.000	ns	11.2	87.20	4.9	33.52	7.9
C7	10 Jun 2015	842	1	<20	<2	<2	0.100	ns	15.6	79.33	8.6	33.41	8.2
	10 Jun 2015	842	12	<2	<2	<2	1.000	ns	12.7	86.33	5.6	33.46	8.0
	10 Jun 2015	842	18	<20	<2	<2	0.100	ns	11.7	87.83	3.7	33.51	7.8
C7	18 Jun 2015	854	1	<2	<2	4e	1.000	ns	18.3	85.45	8.8	33.41	8.3

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	N-NH3	Temp	XMS	DO	Sal	pH
C7	18 Jun 2015	854	12	<2	<2	<2	1.000	ns	14.8	88.67	6.6	33.39	8.1
C7	18 Jun 2015	854	18	<2	4e	<2	2.000	ns	13.8	90.08	4.7	33.41	7.9
C7	22 Jun 2015	1016	1	<2	<2	<2	1.000	ns	19.5	86.69	9.8	33.40	8.4
C7	22 Jun 2015	1016	12	<2	<2	<2	1.000	ns	17.5	83.41	8.3	33.37	8.2
C7	22 Jun 2015	1016	18	2e	<2	<2	1.000	ns	15.1	85.37	6.8	33.38	8.1
C8	06 Jun 2015	901	1	<2	<2	<2	1.000	ns	16.3	77.46	9.1	33.41	8.2
C8	06 Jun 2015	901	12	<2	<2	<2	1.000	ns	11.8	80.59	6.1	33.43	8.0
C8	06 Jun 2015	901	18	<2	<2	<2	1.000	ns	11.4	85.54	5.2	33.49	7.9
C8	10 Jun 2015	857	1	<20	<2	<2	0.100	ns	16.1	80.97	8.6	33.41	8.2
C8	10 Jun 2015	857	12	<2	<2	<2	1.000	ns	12.4	85.16	6.1	33.42	8.0
C8	10 Jun 2015	857	18	<2	<2	<2	1.000	ns	11.3	86.10	4.4	33.51	7.8
C8	18 Jun 2015	908	1	<2	<2	<2	1.000	ns	17.8	85.60	8.2	33.38	8.2
C8	18 Jun 2015	908	12	<2	<2	<2	1.000	ns	14.6	89.12	7.3	33.39	8.1
C8	18 Jun 2015	908	18	<2	<2	<2	1.000	ns	13.6	90.19	5.7	33.41	8.0
C8	22 Jun 2015	1038	1	<2	<2	<2	1.000	ns	19.9	86.22	8.9	33.40	8.3
C8	22 Jun 2015	1038	12	2e	<2	2e	1.000	ns	16.4	79.91	8.1	33.38	8.2
C8	22 Jun 2015	1038	18	<2	<2	<2	1.000	ns	14.9	83.69	6.8	33.36	8.2

ns = not sampled

Table 3.9

Summary of visual observations made during the month at the PLOO kelp stations for each sample date.

Station	Date	Parameter	Value
A1	06 Jun 2015	Depth (m)	18
A1	06 Jun 2015	Arrive Time	751
A1	06 Jun 2015	Depart Time	759
A1	06 Jun 2015	Air Temp (C)	17
A1	06 Jun 2015	Weather	Partly Cloudy
A1	06 Jun 2015	Visibility (mi)	20
A1	06 Jun 2015	Wind Speed (kts)	1
A1	06 Jun 2015	Wind Dir	S
A1	06 Jun 2015	Water Color	Bluish-Green
A1	06 Jun 2015	Wave Ht Low (ft)	3
A1	06 Jun 2015	Wave Period (sec)	13
A1	06 Jun 2015	Sea State	Calm
A1	06 Jun 2015	High Tide (ft)	3.81
A1	06 Jun 2015	High Tide Time	1323
A1	06 Jun 2015	Low Tide (ft)	-0.6
A1	06 Jun 2015	Low Tide Time	650
A1	06 Jun 2015	Comments	Kelp
A1	10 Jun 2015	Depth (m)	20
A1	10 Jun 2015	Arrive Time	746
A1	10 Jun 2015	Depart Time	755
A1	10 Jun 2015	Air Temp (C)	18
A1	10 Jun 2015	Weather	Overcast
A1	10 Jun 2015	Visibility (mi)	8
A1	10 Jun 2015	Wind Speed (kts)	6
A1	10 Jun 2015	Wind Dir	NE
A1	10 Jun 2015	Water Color	Greenish-Blue
A1	10 Jun 2015	Wave Ht Low (ft)	4
A1	10 Jun 2015	Wave Period (sec)	13
A1	10 Jun 2015	Sea State	Light chop
A1	10 Jun 2015	High Tide (ft)	3.76
A1	10 Jun 2015	High Tide Time	411
A1	10 Jun 2015	Low Tide (ft)	0.59
A1	10 Jun 2015	Low Tide Time	1037
A1	10 Jun 2015	Comments	Kelp
A1	18 Jun 2015	Depth (m)	19
A1	18 Jun 2015	Arrive Time	801
A1	18 Jun 2015	Depart Time	808
A1	18 Jun 2015	Air Temp (C)	17
A1	18 Jun 2015	Weather	Overcast
A1	18 Jun 2015	Visibility (mi)	8
A1	18 Jun 2015	Wind Speed (kts)	9
A1	18 Jun 2015	Wind Dir	SW

Station	Date	Parameter	Value
A1	18 Jun 2015	Water Color	Bluish-Green
A1	18 Jun 2015	Wave Ht Low (ft)	3
A1	18 Jun 2015	Wave Period (sec)	11
A1	18 Jun 2015	Sea State	Calm
A1	18 Jun 2015	High Tide (ft)	3.94
A1	18 Jun 2015	High Tide Time	1146
A1	18 Jun 2015	Low Tide (ft)	-0.82
A1	18 Jun 2015	Low Tide Time	523
A1	18 Jun 2015	Comments	Kelp
A1	22 Jun 2015	Depth (m)	19
A1	22 Jun 2015	Arrive Time	915
A1	22 Jun 2015	Depart Time	923
A1	22 Jun 2015	Air Temp (C)	19
A1	22 Jun 2015	Weather	Cloudy
A1	22 Jun 2015	Visibility (mi)	6
A1	22 Jun 2015	Wind Speed (kts)	3
A1	22 Jun 2015	Wind Dir	SW
A1	22 Jun 2015	Water Color	Bluish-Green
A1	22 Jun 2015	Wave Ht Low (ft)	3
A1	22 Jun 2015	Wave Period (sec)	13
A1	22 Jun 2015	Sea State	Calm
A1	22 Jun 2015	High Tide (ft)	3.91
A1	22 Jun 2015	High Tide Time	1458
A1	22 Jun 2015	Low Tide (ft)	0.62
A1	22 Jun 2015	Low Tide Time	804
A1	22 Jun 2015	Comments	
C4	06 Jun 2015	Depth (m)	10
C4	06 Jun 2015	Arrive Time	950
C4	06 Jun 2015	Depart Time	956
C4	06 Jun 2015	Air Temp (C)	16
C4	06 Jun 2015	Weather	Partly Cloudy
C4	06 Jun 2015	Visibility (mi)	20
C4	06 Jun 2015	Wind Speed (kts)	6
C4	06 Jun 2015	Wind Dir	E
C4	06 Jun 2015	Water Color	Green
C4	06 Jun 2015	Wave Ht Low (ft)	3
C4	06 Jun 2015	Wave Period (sec)	11
C4	06 Jun 2015	Sea State	Wind ripples
C4	06 Jun 2015	High Tide (ft)	3.81
C4	06 Jun 2015	High Tide Time	1323
C4	06 Jun 2015	Low Tide (ft)	-0.6
C4	06 Jun 2015	Low Tide Time	650
C4	06 Jun 2015	Comments	Kelp
C4	10 Jun 2015	Depth (m)	9
C4	10 Jun 2015	Arrive Time	945
C4	10 Jun 2015	Depart Time	951

Station	Date	Parameter	Value
C4	10 Jun 2015	Air Temp (C)	17
C4	10 Jun 2015	Weather	Overcast
C4	10 Jun 2015	Visibility (mi)	8
C4	10 Jun 2015	Wind Speed (kts)	6
C4	10 Jun 2015	Wind Dir	E
C4	10 Jun 2015	Water Color	Bluish-Green
C4	10 Jun 2015	Wave Ht Low (ft)	4
C4	10 Jun 2015	Wave Period (sec)	13
C4	10 Jun 2015	Sea State	Light chop
C4	10 Jun 2015	High Tide (ft)	3.76
C4	10 Jun 2015	High Tide Time	411
C4	10 Jun 2015	Low Tide (ft)	0.59
C4	10 Jun 2015	Low Tide Time	1037
C4	10 Jun 2015	Comments	Kelp debris
C4	18 Jun 2015	Depth (m)	11
C4	18 Jun 2015	Arrive Time	1007
C4	18 Jun 2015	Depart Time	1015
C4	18 Jun 2015	Air Temp (C)	18
C4	18 Jun 2015	Weather	Overcast
C4	18 Jun 2015	Visibility (mi)	6
C4	18 Jun 2015	Wind Speed (kts)	4
C4	18 Jun 2015	Wind Dir	W
C4	18 Jun 2015	Water Color	Bluish-Green
C4	18 Jun 2015	Wave Ht Low (ft)	3
C4	18 Jun 2015	Wave Period (sec)	11
C4	18 Jun 2015	Sea State	Wind ripples
C4	18 Jun 2015	High Tide (ft)	3.94
C4	18 Jun 2015	High Tide Time	1146
C4	18 Jun 2015	Low Tide (ft)	-0.82
C4	18 Jun 2015	Low Tide Time	523
C4	18 Jun 2015	Comments	Kelp debris
C4	22 Jun 2015	Depth (m)	11
C4	22 Jun 2015	Arrive Time	1132
C4	22 Jun 2015	Depart Time	1136
C4	22 Jun 2015	Air Temp (C)	18
C4	22 Jun 2015	Weather	Cloudy
C4	22 Jun 2015	Visibility (mi)	6
C4	22 Jun 2015	Wind Speed (kts)	0
C4	22 Jun 2015	Wind Dir	
C4	22 Jun 2015	Water Color	Green
C4	22 Jun 2015	Wave Ht Low (ft)	2
C4	22 Jun 2015	Wave Period (sec)	13
C4	22 Jun 2015	Sea State	Calm
C4	22 Jun 2015	High Tide (ft)	3.91
C4	22 Jun 2015	High Tide Time	1458
C4	22 Jun 2015	Low Tide (ft)	0.62
C4	22 Jun 2015	Low Tide Time	804

Station	Date	Parameter	Value
C4	22 Jun 2015	Comments	
C5	06 Jun 2015	Depth (m)	10
C5	06 Jun 2015	Arrive Time	939
C5	06 Jun 2015	Depart Time	944
C5	06 Jun 2015	Air Temp (C)	16
C5	06 Jun 2015	Weather	Partly Cloudy
C5	06 Jun 2015	Visibility (mi)	20
C5	06 Jun 2015	Wind Speed (kts)	4
C5	06 Jun 2015	Wind Dir	SW
C5	06 Jun 2015	Water Color	Green
C5	06 Jun 2015	Wave Ht Low (ft)	3
C5	06 Jun 2015	Wave Period (sec)	11
C5	06 Jun 2015	Sea State	Wind ripples
C5	06 Jun 2015	High Tide (ft)	3.81
C5	06 Jun 2015	High Tide Time	1323
C5	06 Jun 2015	Low Tide (ft)	-0.6
C5	06 Jun 2015	Low Tide Time	650
C5	06 Jun 2015	Comments	Kelp debris
C5	10 Jun 2015	Depth (m)	10
C5	10 Jun 2015	Arrive Time	932
C5	10 Jun 2015	Depart Time	938
C5	10 Jun 2015	Air Temp (C)	17
C5	10 Jun 2015	Weather	Overcast
C5	10 Jun 2015	Visibility (mi)	8
C5	10 Jun 2015	Wind Speed (kts)	6
C5	10 Jun 2015	Wind Dir	E
C5	10 Jun 2015	Water Color	Bluish-Green
C5	10 Jun 2015	Wave Ht Low (ft)	4
C5	10 Jun 2015	Wave Period (sec)	13
C5	10 Jun 2015	Sea State	Light chop
C5	10 Jun 2015	High Tide (ft)	3.76
C5	10 Jun 2015	High Tide Time	411
C5	10 Jun 2015	Low Tide (ft)	0.59
C5	10 Jun 2015	Low Tide Time	1037
C5	10 Jun 2015	Comments	
C5	18 Jun 2015	Depth (m)	10
C5	18 Jun 2015	Arrive Time	950
C5	18 Jun 2015	Depart Time	1002
C5	18 Jun 2015	Air Temp (C)	18
C5	18 Jun 2015	Weather	Overcast
C5	18 Jun 2015	Visibility (mi)	8
C5	18 Jun 2015	Wind Speed (kts)	9
C5	18 Jun 2015	Wind Dir	SW
C5	18 Jun 2015	Water Color	Bluish-Green
C5	18 Jun 2015	Wave Ht Low (ft)	3
C5	18 Jun 2015	Wave Period (sec)	11

Station	Date	Parameter	Value
C5	18 Jun 2015	Sea State	Calm
C5	18 Jun 2015	High Tide (ft)	3.94
C5	18 Jun 2015	High Tide Time	1146
C5	18 Jun 2015	Low Tide (ft)	-0.82
C5	18 Jun 2015	Low Tide Time	523
C5	18 Jun 2015	Comments	Kelp debris
C5	22 Jun 2015	Depth (m)	10
C5	22 Jun 2015	Arrive Time	1117
C5	22 Jun 2015	Depart Time	1121
C5	22 Jun 2015	Air Temp (C)	18
C5	22 Jun 2015	Weather	Cloudy
C5	22 Jun 2015	Visibility (mi)	6
C5	22 Jun 2015	Wind Speed (kts)	2
C5	22 Jun 2015	Wind Dir	NE
C5	22 Jun 2015	Water Color	Green
C5	22 Jun 2015	Wave Ht Low (ft)	2
C5	22 Jun 2015	Wave Period (sec)	13
C5	22 Jun 2015	Sea State	Calm
C5	22 Jun 2015	High Tide (ft)	3.91
C5	22 Jun 2015	High Tide Time	1458
C5	22 Jun 2015	Low Tide (ft)	0.62
C5	22 Jun 2015	Low Tide Time	804
C5	22 Jun 2015	Comments	
A6	06 Jun 2015	Depth (m)	15
A6	06 Jun 2015	Arrive Time	824
A6	06 Jun 2015	Depart Time	834
A6	06 Jun 2015	Air Temp (C)	17
A6	06 Jun 2015	Weather	Partly Cloudy
A6	06 Jun 2015	Visibility (mi)	20
A6	06 Jun 2015	Wind Speed (kts)	3
A6	06 Jun 2015	Wind Dir	N
A6	06 Jun 2015	Water Color	Green
A6	06 Jun 2015	Wave Ht Low (ft)	3
A6	06 Jun 2015	Wave Period (sec)	11
A6	06 Jun 2015	Sea State	Calm
A6	06 Jun 2015	High Tide (ft)	3.81
A6	06 Jun 2015	High Tide Time	1323
A6	06 Jun 2015	Low Tide (ft)	-0.6
A6	06 Jun 2015	Low Tide Time	650
A6	06 Jun 2015	Comments	Kelp
A6	10 Jun 2015	Depth (m)	20
A6	10 Jun 2015	Arrive Time	822
A6	10 Jun 2015	Depart Time	832
A6	10 Jun 2015	Air Temp (C)	18
A6	10 Jun 2015	Weather	Overcast
A6	10 Jun 2015	Visibility (mi)	8

Station	Date	Parameter	Value
A6	10 Jun 2015	Wind Speed (kts)	7
A6	10 Jun 2015	Wind Dir	N
A6	10 Jun 2015	Water Color	Greenish-Blue
A6	10 Jun 2015	Wave Ht Low (ft)	4
A6	10 Jun 2015	Wave Period (sec)	13
A6	10 Jun 2015	Sea State	Light chop
A6	10 Jun 2015	High Tide (ft)	3.76
A6	10 Jun 2015	High Tide Time	411
A6	10 Jun 2015	Low Tide (ft)	0.59
A6	10 Jun 2015	Low Tide Time	1037
A6	10 Jun 2015	Comments	Kelp
A6	18 Jun 2015	Depth (m)	18
A6	18 Jun 2015	Arrive Time	834
A6	18 Jun 2015	Depart Time	844
A6	18 Jun 2015	Air Temp (C)	17
A6	18 Jun 2015	Weather	Overcast
A6	18 Jun 2015	Visibility (mi)	8
A6	18 Jun 2015	Wind Speed (kts)	6
A6	18 Jun 2015	Wind Dir	SW
A6	18 Jun 2015	Water Color	Bluish-Green
A6	18 Jun 2015	Wave Ht Low (ft)	3
A6	18 Jun 2015	Wave Period (sec)	11
A6	18 Jun 2015	Sea State	Calm
A6	18 Jun 2015	High Tide (ft)	3.94
A6	18 Jun 2015	High Tide Time	1146
A6	18 Jun 2015	Low Tide (ft)	-0.82
A6	18 Jun 2015	Low Tide Time	523
A6	18 Jun 2015	Comments	Kelp
A6	22 Jun 2015	Depth (m)	19
A6	22 Jun 2015	Arrive Time	953
A6	22 Jun 2015	Depart Time	1000
A6	22 Jun 2015	Air Temp (C)	18
A6	22 Jun 2015	Weather	Cloudy
A6	22 Jun 2015	Visibility (mi)	6
A6	22 Jun 2015	Wind Speed (kts)	0
A6	22 Jun 2015	Wind Dir	
A6	22 Jun 2015	Water Color	Bluish-Green
A6	22 Jun 2015	Wave Ht Low (ft)	2
A6	22 Jun 2015	Wave Period (sec)	13
A6	22 Jun 2015	Sea State	Calm
A6	22 Jun 2015	High Tide (ft)	3.91
A6	22 Jun 2015	High Tide Time	1458
A6	22 Jun 2015	Low Tide (ft)	0.62
A6	22 Jun 2015	Low Tide Time	804
A6	22 Jun 2015	Comments	Kelp; Kelp debris
C6	06 Jun 2015	Depth (m)	8

Station	Date	Parameter	Value
C6	06 Jun 2015	Arrive Time	923
C6	06 Jun 2015	Depart Time	932
C6	06 Jun 2015	Air Temp (C)	16
C6	06 Jun 2015	Weather	Partly Cloudy
C6	06 Jun 2015	Visibility (mi)	20
C6	06 Jun 2015	Wind Speed (kts)	3
C6	06 Jun 2015	Wind Dir	NE
C6	06 Jun 2015	Water Color	Green
C6	06 Jun 2015	Wave Ht Low (ft)	3
C6	06 Jun 2015	Wave Period (sec)	11
C6	06 Jun 2015	Sea State	Wind ripples
C6	06 Jun 2015	High Tide (ft)	3.81
C6	06 Jun 2015	High Tide Time	1323
C6	06 Jun 2015	Low Tide (ft)	-0.6
C6	06 Jun 2015	Low Tide Time	650
C6	06 Jun 2015	Comments	Kelp
C6	10 Jun 2015	Depth (m)	9
C6	10 Jun 2015	Arrive Time	918
C6	10 Jun 2015	Depart Time	922
C6	10 Jun 2015	Air Temp (C)	18
C6	10 Jun 2015	Weather	Overcast
C6	10 Jun 2015	Visibility (mi)	8
C6	10 Jun 2015	Wind Speed (kts)	9
C6	10 Jun 2015	Wind Dir	W
C6	10 Jun 2015	Water Color	Greenish-Blue
C6	10 Jun 2015	Wave Ht Low (ft)	4
C6	10 Jun 2015	Wave Period (sec)	13
C6	10 Jun 2015	Sea State	Light chop
C6	10 Jun 2015	High Tide (ft)	3.76
C6	10 Jun 2015	High Tide Time	411
C6	10 Jun 2015	Low Tide (ft)	0.59
C6	10 Jun 2015	Low Tide Time	1037
C6	10 Jun 2015	Comments	Kelp
C6	18 Jun 2015	Depth (m)	10
C6	18 Jun 2015	Arrive Time	931
C6	18 Jun 2015	Depart Time	944
C6	18 Jun 2015	Air Temp (C)	18
C6	18 Jun 2015	Weather	Overcast
C6	18 Jun 2015	Visibility (mi)	8
C6	18 Jun 2015	Wind Speed (kts)	4
C6	18 Jun 2015	Wind Dir	SE
C6	18 Jun 2015	Water Color	Bluish-Green
C6	18 Jun 2015	Wave Ht Low (ft)	3
C6	18 Jun 2015	Wave Period (sec)	11
C6	18 Jun 2015	Sea State	Calm
C6	18 Jun 2015	High Tide (ft)	3.94
C6	18 Jun 2015	High Tide Time	1146

Station	Date	Parameter	Value
C6	18 Jun 2015	Low Tide (ft)	-0.82
C6	18 Jun 2015	Low Tide Time	523
C6	18 Jun 2015	Comments	Kelp
C6	22 Jun 2015	Depth (m)	9
C6	22 Jun 2015	Arrive Time	1101
C6	22 Jun 2015	Depart Time	1105
C6	22 Jun 2015	Air Temp (C)	18
C6	22 Jun 2015	Weather	Cloudy
C6	22 Jun 2015	Visibility (mi)	6
C6	22 Jun 2015	Wind Speed (kts)	3
C6	22 Jun 2015	Wind Dir	W
C6	22 Jun 2015	Water Color	Green
C6	22 Jun 2015	Wave Ht Low (ft)	2
C6	22 Jun 2015	Wave Period (sec)	13
C6	22 Jun 2015	Sea State	Calm
C6	22 Jun 2015	High Tide (ft)	3.91
C6	22 Jun 2015	High Tide Time	1458
C6	22 Jun 2015	Low Tide (ft)	0.62
C6	22 Jun 2015	Low Tide Time	804
C6	22 Jun 2015	Comments	
A7	06 Jun 2015	Depth (m)	18
A7	06 Jun 2015	Arrive Time	805
A7	06 Jun 2015	Depart Time	817
A7	06 Jun 2015	Air Temp (C)	17
A7	06 Jun 2015	Weather	Partly Cloudy
A7	06 Jun 2015	Visibility (mi)	20
A7	06 Jun 2015	Wind Speed (kts)	2
A7	06 Jun 2015	Wind Dir	SE
A7	06 Jun 2015	Water Color	Green
A7	06 Jun 2015	Wave Ht Low (ft)	3
A7	06 Jun 2015	Wave Period (sec)	11
A7	06 Jun 2015	Sea State	Calm
A7	06 Jun 2015	High Tide (ft)	3.81
A7	06 Jun 2015	High Tide Time	1323
A7	06 Jun 2015	Low Tide (ft)	-0.6
A7	06 Jun 2015	Low Tide Time	650
A7	06 Jun 2015	Comments	Kelp
A7	10 Jun 2015	Depth (m)	19
A7	10 Jun 2015	Arrive Time	803
A7	10 Jun 2015	Depart Time	814
A7	10 Jun 2015	Air Temp (C)	18
A7	10 Jun 2015	Weather	Overcast
A7	10 Jun 2015	Visibility (mi)	8
A7	10 Jun 2015	Wind Speed (kts)	7
A7	10 Jun 2015	Wind Dir	NE
A7	10 Jun 2015	Water Color	Greenish-Blue

Station	Date	Parameter	Value
A7	10 Jun 2015	Wave Ht Low (ft)	4
A7	10 Jun 2015	Wave Period (sec)	13
A7	10 Jun 2015	Sea State	Light chop
A7	10 Jun 2015	High Tide (ft)	3.76
A7	10 Jun 2015	High Tide Time	411
A7	10 Jun 2015	Low Tide (ft)	0.59
A7	10 Jun 2015	Low Tide Time	1037
A7	10 Jun 2015	Comments	Kelp
A7	18 Jun 2015	Depth (m)	18
A7	18 Jun 2015	Arrive Time	814
A7	18 Jun 2015	Depart Time	827
A7	18 Jun 2015	Air Temp (C)	17
A7	18 Jun 2015	Weather	Overcast
A7	18 Jun 2015	Visibility (mi)	8
A7	18 Jun 2015	Wind Speed (kts)	7
A7	18 Jun 2015	Wind Dir	SW
A7	18 Jun 2015	Water Color	Bluish-Green
A7	18 Jun 2015	Wave Ht Low (ft)	3
A7	18 Jun 2015	Wave Period (sec)	11
A7	18 Jun 2015	Sea State	Calm
A7	18 Jun 2015	High Tide (ft)	3.94
A7	18 Jun 2015	High Tide Time	1146
A7	18 Jun 2015	Low Tide (ft)	-0.82
A7	18 Jun 2015	Low Tide Time	523
A7	18 Jun 2015	Comments	Kelp
A7	22 Jun 2015	Depth (m)	19
A7	22 Jun 2015	Arrive Time	936
A7	22 Jun 2015	Depart Time	943
A7	22 Jun 2015	Air Temp (C)	19
A7	22 Jun 2015	Weather	Cloudy
A7	22 Jun 2015	Visibility (mi)	6
A7	22 Jun 2015	Wind Speed (kts)	0
A7	22 Jun 2015	Wind Dir	
A7	22 Jun 2015	Water Color	Bluish-Green
A7	22 Jun 2015	Wave Ht Low (ft)	2
A7	22 Jun 2015	Wave Period (sec)	13
A7	22 Jun 2015	Sea State	Calm
A7	22 Jun 2015	High Tide (ft)	3.91
A7	22 Jun 2015	High Tide Time	1458
A7	22 Jun 2015	Low Tide (ft)	0.62
A7	22 Jun 2015	Low Tide Time	804
A7	22 Jun 2015	Comments	Kelp; Birds on station; Kelp debris
C7	06 Jun 2015	Depth (m)	15
C7	06 Jun 2015	Arrive Time	843
C7	06 Jun 2015	Depart Time	854
C7	06 Jun 2015	Air Temp (C)	16

Station	Date	Parameter	Value
C7	06 Jun 2015	Weather	Partly Cloudy
C7	06 Jun 2015	Visibility (mi)	20
C7	06 Jun 2015	Wind Speed (kts)	4
C7	06 Jun 2015	Wind Dir	N
C7	06 Jun 2015	Water Color	Green
C7	06 Jun 2015	Wave Ht Low (ft)	3
C7	06 Jun 2015	Wave Period (sec)	11
C7	06 Jun 2015	Sea State	Calm
C7	06 Jun 2015	High Tide (ft)	3.81
C7	06 Jun 2015	High Tide Time	1323
C7	06 Jun 2015	Low Tide (ft)	-0.6
C7	06 Jun 2015	Low Tide Time	650
C7	06 Jun 2015	Comments	Tuna Crab present on station; Kelp
C7	10 Jun 2015	Depth (m)	19
C7	10 Jun 2015	Arrive Time	842
C7	10 Jun 2015	Depart Time	851
C7	10 Jun 2015	Air Temp (C)	18
C7	10 Jun 2015	Weather	Overcast
C7	10 Jun 2015	Visibility (mi)	8
C7	10 Jun 2015	Wind Speed (kts)	4
C7	10 Jun 2015	Wind Dir	S
C7	10 Jun 2015	Water Color	Greenish-Blue
C7	10 Jun 2015	Wave Ht Low (ft)	4
C7	10 Jun 2015	Wave Period (sec)	13
C7	10 Jun 2015	Sea State	Light chop
C7	10 Jun 2015	High Tide (ft)	3.76
C7	10 Jun 2015	High Tide Time	411
C7	10 Jun 2015	Low Tide (ft)	0.59
C7	10 Jun 2015	Low Tide Time	1037
C7	10 Jun 2015	Comments	Kelp
C7	18 Jun 2015	Depth (m)	18
C7	18 Jun 2015	Arrive Time	854
C7	18 Jun 2015	Depart Time	902
C7	18 Jun 2015	Air Temp (C)	18
C7	18 Jun 2015	Weather	Overcast
C7	18 Jun 2015	Visibility (mi)	8
C7	18 Jun 2015	Wind Speed (kts)	4
C7	18 Jun 2015	Wind Dir	S
C7	18 Jun 2015	Water Color	Bluish-Green
C7	18 Jun 2015	Wave Ht Low (ft)	3
C7	18 Jun 2015	Wave Period (sec)	11
C7	18 Jun 2015	Sea State	Calm
C7	18 Jun 2015	High Tide (ft)	3.94
C7	18 Jun 2015	High Tide Time	1146
C7	18 Jun 2015	Low Tide (ft)	-0.82
C7	18 Jun 2015	Low Tide Time	523
C7	18 Jun 2015	Comments	Lots of birds on station; Kelp

Station	Date	Parameter	Value
C7	22 Jun 2015	Depth (m)	18
C7	22 Jun 2015	Arrive Time	1016
C7	22 Jun 2015	Depart Time	1020
C7	22 Jun 2015	Air Temp (C)	18
C7	22 Jun 2015	Weather	Cloudy
C7	22 Jun 2015	Visibility (mi)	6
C7	22 Jun 2015	Wind Speed (kts)	5
C7	22 Jun 2015	Wind Dir	SW
C7	22 Jun 2015	Water Color	Bluish-Green
C7	22 Jun 2015	Wave Ht Low (ft)	2
C7	22 Jun 2015	Wave Period (sec)	13
C7	22 Jun 2015	Sea State	Calm
C7	22 Jun 2015	High Tide (ft)	3.91
C7	22 Jun 2015	High Tide Time	1458
C7	22 Jun 2015	Low Tide (ft)	0.62
C7	22 Jun 2015	Low Tide Time	804
C7	22 Jun 2015	Comments	
C8	06 Jun 2015	Depth (m)	19
C8	06 Jun 2015	Arrive Time	901
C8	06 Jun 2015	Depart Time	908
C8	06 Jun 2015	Air Temp (C)	16
C8	06 Jun 2015	Weather	Partly Cloudy
C8	06 Jun 2015	Visibility (mi)	20
C8	06 Jun 2015	Wind Speed (kts)	6
C8	06 Jun 2015	Wind Dir	SE
C8	06 Jun 2015	Water Color	Green
C8	06 Jun 2015	Wave Ht Low (ft)	3
C8	06 Jun 2015	Wave Period (sec)	11
C8	06 Jun 2015	Sea State	Wind ripples
C8	06 Jun 2015	High Tide (ft)	3.81
C8	06 Jun 2015	High Tide Time	1323
C8	06 Jun 2015	Low Tide (ft)	-0.6
C8	06 Jun 2015	Low Tide Time	650
C8	06 Jun 2015	Comments	Tuna Crab on station
C8	10 Jun 2015	Depth (m)	19
C8	10 Jun 2015	Arrive Time	857
C8	10 Jun 2015	Depart Time	904
C8	10 Jun 2015	Air Temp (C)	17
C8	10 Jun 2015	Weather	Overcast
C8	10 Jun 2015	Visibility (mi)	8
C8	10 Jun 2015	Wind Speed (kts)	3
C8	10 Jun 2015	Wind Dir	SW
C8	10 Jun 2015	Water Color	Greenish-Blue
C8	10 Jun 2015	Wave Ht Low (ft)	4
C8	10 Jun 2015	Wave Period (sec)	13
C8	10 Jun 2015	Sea State	Light chop

Station	Date	Parameter	Value
C8	10 Jun 2015	High Tide (ft)	3.76
C8	10 Jun 2015	High Tide Time	411
C8	10 Jun 2015	Low Tide (ft)	0.59
C8	10 Jun 2015	Low Tide Time	1037
C8	10 Jun 2015	Comments	Kelp debris
C8	18 Jun 2015	Depth (m)	19
C8	18 Jun 2015	Arrive Time	908
C8	18 Jun 2015	Depart Time	915
C8	18 Jun 2015	Air Temp (C)	18
C8	18 Jun 2015	Weather	Overcast
C8	18 Jun 2015	Visibility (mi)	8
C8	18 Jun 2015	Wind Speed (kts)	7
C8	18 Jun 2015	Wind Dir	NE
C8	18 Jun 2015	Water Color	Bluish-Green
C8	18 Jun 2015	Wave Ht Low (ft)	3
C8	18 Jun 2015	Wave Period (sec)	11
C8	18 Jun 2015	Sea State	Calm
C8	18 Jun 2015	High Tide (ft)	3.94
C8	18 Jun 2015	High Tide Time	1146
C8	18 Jun 2015	Low Tide (ft)	-0.82
C8	18 Jun 2015	Low Tide Time	523
C8	18 Jun 2015	Comments	Kelp
C8	22 Jun 2015	Depth (m)	19
C8	22 Jun 2015	Arrive Time	1038
C8	22 Jun 2015	Depart Time	1043
C8	22 Jun 2015	Air Temp (C)	18
C8	22 Jun 2015	Weather	Cloudy
C8	22 Jun 2015	Visibility (mi)	6
C8	22 Jun 2015	Wind Speed (kts)	7
C8	22 Jun 2015	Wind Dir	N
C8	22 Jun 2015	Water Color	Bluish-Green
C8	22 Jun 2015	Wave Ht Low (ft)	2
C8	22 Jun 2015	Wave Period (sec)	13
C8	22 Jun 2015	Sea State	Calm
C8	22 Jun 2015	High Tide (ft)	3.91
C8	22 Jun 2015	High Tide Time	1458
C8	22 Jun 2015	Low Tide (ft)	0.62
C8	22 Jun 2015	Low Tide Time	804
C8	22 Jun 2015	Comments	Kelp

Table 3.10

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A1	06 Jun 2015	1	15.63	77.58	9.3	33.41	8.2	24.6	2.93
A1	06 Jun 2015	2	15.58	77.09	9.3	33.41	8.2	24.6	3.19
A1	06 Jun 2015	3	15.57	77.20	9.2	33.41	8.2	24.6	3.45
A1	06 Jun 2015	4	15.54	78.04	9.2	33.41	8.2	24.6	3.64
A1	06 Jun 2015	5	15.51	78.07	9.2	33.41	8.2	24.6	3.80
A1	06 Jun 2015	6	15.45	77.82	9.1	33.41	8.2	24.6	3.99
A1	06 Jun 2015	7	15.37	77.63	9.0	33.41	8.2	24.7	4.01
A1	06 Jun 2015	8	15.29	77.64	8.9	33.41	8.2	24.7	4.19
A1	06 Jun 2015	9	15.19	77.58	8.8	33.41	8.2	24.7	4.29
A1	06 Jun 2015	10	15.09	77.51	8.8	33.41	8.1	24.7	4.29
A1	06 Jun 2015	11	15.01	77.58	8.6	33.40	8.1	24.7	4.21
A1	06 Jun 2015	12	14.89	77.41	8.6	33.41	8.1	24.8	4.34
A1	06 Jun 2015	13	14.81	77.32	8.4	33.41	8.1	24.8	4.28
A1	06 Jun 2015	14	14.56	77.76	8.1	33.40	8.1	24.8	3.94
A1	06 Jun 2015	15	14.11	78.15	7.6	33.38	8.1	24.9	3.27
A1	06 Jun 2015	16	13.32	78.77	6.8	33.43	8.1	25.1	2.54
A1	06 Jun 2015	17	12.20	81.31	6.0	33.46	8.0	25.4	1.89
A1	06 Jun 2015	18	11.90	83.34	5.6	33.50	7.9	25.4	1.61
A1	10 Jun 2015	1	17.82	85.83	8.2	33.39	8.2	24.1	1.23
A1	10 Jun 2015	2	17.80	85.98	8.2	33.39	8.2	24.1	1.21
A1	10 Jun 2015	3	17.78	85.88	8.2	33.39	8.2	24.1	1.22
A1	10 Jun 2015	4	17.69	85.89	8.1	33.38	8.2	24.1	1.31
A1	10 Jun 2015	5	17.57	85.94	8.2	33.38	8.2	24.1	1.47
A1	10 Jun 2015	6	17.36	85.87	8.2	33.36	8.2	24.2	1.96
A1	10 Jun 2015	7	16.41	85.03	8.2	33.35	8.2	24.4	3.01
A1	10 Jun 2015	8	15.75	82.56	8.2	33.36	8.2	24.5	3.57
A1	10 Jun 2015	9	14.87	82.70	8.1	33.37	8.1	24.7	3.37
A1	10 Jun 2015	10	13.84	84.04	7.6	33.37	8.1	25.0	3.02
A1	10 Jun 2015	11	13.15	85.57	7.2	33.40	8.1	25.1	2.50
A1	10 Jun 2015	12	12.81	86.41	6.7	33.42	8.0	25.2	2.20
A1	10 Jun 2015	13	12.55	87.25	6.4	33.42	8.0	25.3	1.80
A1	10 Jun 2015	14	12.30	87.94	6.1	33.44	8.0	25.3	1.57
A1	10 Jun 2015	15	12.07	88.59	5.8	33.45	8.0	25.4	1.37
A1	10 Jun 2015	16	11.85	89.12	5.5	33.46	7.9	25.4	1.11
A1	10 Jun 2015	17	11.71	89.41	5.3	33.47	7.9	25.5	0.98
A1	10 Jun 2015	18	11.61	89.41	5.2	33.48	7.9	25.5	0.83
A1	10 Jun 2015	19	11.56	89.29	5.1	33.49	7.9	25.5	0.79
A1	18 Jun 2015	1	17.31	89.46	8.4	33.39	8.2	24.2	1.39
A1	18 Jun 2015	2	17.28	89.37	8.4	33.39	8.2	24.2	1.62
A1	18 Jun 2015	3	17.20	89.11	8.5	33.39	8.2	24.2	1.72
A1	18 Jun 2015	4	17.11	88.54	8.4	33.40	8.2	24.3	1.82
A1	18 Jun 2015	5	17.09	88.47	8.3	33.39	8.2	24.3	1.73
A1	18 Jun 2015	6	16.79	88.44	8.2	33.39	8.2	24.3	1.89
A1	18 Jun 2015	7	16.62	88.60	8.1	33.38	8.2	24.4	1.84
A1	18 Jun 2015	8	16.14	88.68	8.0	33.41	8.2	24.5	1.85
A1	18 Jun 2015	9	16.04	88.93	7.9	33.40	8.2	24.5	1.67
A1	18 Jun 2015	10	15.91	89.20	7.7	33.37	8.1	24.5	1.58
A1	18 Jun 2015	11	15.39	89.40	7.6	33.38	8.1	24.6	1.59
A1	18 Jun 2015	12	14.95	89.13	7.4	33.40	8.1	24.8	1.54
A1	18 Jun 2015	13	14.63	89.66	7.1	33.44	8.0	24.9	1.24
A1	18 Jun 2015	14	14.24	89.99	6.9	33.44	8.0	24.9	1.28

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A1	18 Jun 2015	15	13.67	89.98	6.6	33.46	8.0	25.1	1.13
A1	18 Jun 2015	16	13.43	90.15	6.4	33.41	8.0	25.1	0.90
A1	18 Jun 2015	17	13.02	90.16	6.2	33.43	8.0	25.2	0.77
A1	18 Jun 2015	18	12.87	90.19	6.2	33.43	8.0	25.2	0.71
A1	22 Jun 2015	1	19.25	81.66	10.1	33.42	8.4	23.7	2.25
A1	22 Jun 2015	2	19.22	81.93	10.0	33.41	8.4	23.8	2.43
A1	22 Jun 2015	3	19.21	82.09	9.9	33.42	8.4	23.8	2.61
A1	22 Jun 2015	4	19.16	82.28	9.9	33.42	8.4	23.8	2.63
A1	22 Jun 2015	5	19.11	82.25	9.7	33.41	8.4	23.8	2.74
A1	22 Jun 2015	6	18.91	82.27	9.4	33.41	8.3	23.8	2.71
A1	22 Jun 2015	7	18.72	82.24	9.1	33.41	8.3	23.9	2.85
A1	22 Jun 2015	8	18.58	82.10	8.9	33.40	8.3	23.9	2.82
A1	22 Jun 2015	9	18.32	82.14	8.8	33.41	8.3	24.0	2.71
A1	22 Jun 2015	10	18.07	82.62	8.5	33.40	8.3	24.0	2.54
A1	22 Jun 2015	11	17.57	82.99	8.2	33.40	8.2	24.1	2.29
A1	22 Jun 2015	12	16.85	83.51	7.8	33.36	8.2	24.3	2.05
A1	22 Jun 2015	13	15.90	84.64	7.4	33.37	8.2	24.5	1.78
A1	22 Jun 2015	14	14.86	85.00	7.2	33.35	8.1	24.7	1.70
A1	22 Jun 2015	15	14.31	85.91	7.2	33.35	8.1	24.8	2.09
A1	22 Jun 2015	16	14.25	86.13	7.1	33.36	8.1	24.9	2.06
A1	22 Jun 2015	17	14.25	85.83	6.9	33.37	8.1	24.9	1.87
A1	22 Jun 2015	18	14.26	85.95	6.9	33.37	8.1	24.9	1.75
C4	06 Jun 2015	1	16.78	75.93	8.2	33.41	8.2	24.3	1.14
C4	06 Jun 2015	2	16.46	75.79	8.4	33.40	8.2	24.4	1.64
C4	06 Jun 2015	3	16.05	75.60	8.5	33.40	8.2	24.5	2.78
C4	06 Jun 2015	4	15.69	74.44	8.3	33.39	8.2	24.6	4.16
C4	06 Jun 2015	5	15.31	73.88	8.2	33.39	8.2	24.7	5.06
C4	06 Jun 2015	6	14.99	73.65	7.8	33.38	8.2	24.7	5.11
C4	06 Jun 2015	7	14.45	74.28	7.1	33.37	8.1	24.8	3.91
C4	06 Jun 2015	8	13.83	75.51	6.4	33.40	8.1	25.0	2.47
C4	06 Jun 2015	9	13.52	78.15	5.9	33.42	8.0	25.1	1.42
C4	06 Jun 2015	10	13.46	81.62	5.7	33.43	8.0	25.1	1.04
C4	06 Jun 2015	11	13.45	80.64	5.7	33.43	8.0	25.1	0.86
C4	10 Jun 2015	1	15.74	84.52	9.1	33.42	8.3	24.6	1.31
C4	10 Jun 2015	2	15.59	84.42	8.6	33.41	8.3	24.6	1.63
C4	10 Jun 2015	3	15.27	84.12	8.1	33.40	8.2	24.7	2.11
C4	10 Jun 2015	4	15.24	82.26	7.9	33.40	8.2	24.7	2.48
C4	10 Jun 2015	5	15.11	79.21	7.6	33.39	8.1	24.7	2.78
C4	10 Jun 2015	6	14.72	77.37	7.2	33.41	8.1	24.8	2.40
C4	10 Jun 2015	7	14.56	76.99	6.7	33.42	8.1	24.8	1.95
C4	10 Jun 2015	8	14.12	78.36	5.9	33.41	8.1	24.9	1.36
C4	10 Jun 2015	9	13.25	79.11	5.2	33.44	8.0	25.1	0.96
C4	10 Jun 2015	10	12.86	77.31	4.8	33.47	7.9	25.2	0.87
C4	18 Jun 2015	1	18.23	82.18	8.4	33.43	8.3	24.0	1.25
C4	18 Jun 2015	2	18.10	82.13	8.3	33.42	8.3	24.0	1.36
C4	18 Jun 2015	3	17.75	81.97	8.2	33.42	8.2	24.1	1.53
C4	18 Jun 2015	4	17.49	82.39	8.1	33.42	8.2	24.2	1.80
C4	18 Jun 2015	5	17.33	82.55	8.0	33.43	8.2	24.2	1.93
C4	18 Jun 2015	6	17.13	82.65	8.0	33.42	8.2	24.3	1.93
C4	18 Jun 2015	7	16.92	83.21	7.8	33.43	8.2	24.3	1.98
C4	18 Jun 2015	8	16.85	82.67	7.8	33.43	8.2	24.3	2.20
C4	18 Jun 2015	9	16.83	81.60	7.7	33.43	8.2	24.4	2.19
C4	18 Jun 2015	10	16.72	82.05	7.5	33.42	8.1	24.4	2.06

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C4	18 Jun 2015	11	16.54	82.76	7.3	33.41	8.1	24.4	1.82
C4	18 Jun 2015	12	16.12	82.86	7.1	33.42	8.1	24.5	1.43
C4	22 Jun 2015	1	19.94	72.20	8.2	33.42	8.3	23.6	1.32
C4	22 Jun 2015	2	19.93	71.48	8.2	33.43	8.3	23.6	1.38
C4	22 Jun 2015	3	20.00	72.04	8.3	33.41	8.3	23.5	1.45
C4	22 Jun 2015	4	19.96	72.09	8.5	33.43	8.3	23.6	1.54
C4	22 Jun 2015	5	19.78	71.92	8.5	33.45	8.3	23.6	1.56
C4	22 Jun 2015	6	19.38	72.12	8.5	33.44	8.3	23.7	1.83
C4	22 Jun 2015	7	19.03	72.99	8.5	33.44	8.3	23.8	2.69
C4	22 Jun 2015	8	18.92	74.15	8.5	33.43	8.3	23.8	3.57
C4	22 Jun 2015	9	18.44	75.18	8.4	33.44	8.3	24.0	3.56
C4	22 Jun 2015	10	18.18	76.36	8.3	33.43	8.3	24.0	3.16
C4	22 Jun 2015	11	18.15	77.07	8.3	33.43	8.3	24.0	2.67
C5	06 Jun 2015	1	16.78	75.05	8.8	33.42	8.2	24.4	1.24
C5	06 Jun 2015	2	16.64	75.07	8.8	33.41	8.2	24.4	1.44
C5	06 Jun 2015	3	16.29	75.19	8.9	33.40	8.2	24.5	2.38
C5	06 Jun 2015	4	15.77	74.42	8.9	33.40	8.2	24.6	4.16
C5	06 Jun 2015	5	15.52	73.82	8.6	33.41	8.2	24.6	5.38
C5	06 Jun 2015	6	15.19	73.18	8.4	33.40	8.2	24.7	5.59
C5	06 Jun 2015	7	14.93	73.35	8.1	33.41	8.2	24.8	4.95
C5	06 Jun 2015	8	14.78	74.84	7.5	33.41	8.2	24.8	3.56
C5	06 Jun 2015	9	13.93	76.61	6.5	33.37	8.1	24.9	2.02
C5	06 Jun 2015	10	12.42	78.94	5.8	33.45	8.0	25.3	1.35
C5	06 Jun 2015	11	12.29	78.92	5.4	33.47	8.0	25.3	1.19
C5	10 Jun 2015	1	16.55	77.05	8.0	33.43	8.2	24.4	1.42
C5	10 Jun 2015	2	16.54	76.81	8.0	33.43	8.2	24.4	1.42
C5	10 Jun 2015	3	16.53	77.09	8.0	33.42	8.2	24.4	1.60
C5	10 Jun 2015	4	16.27	76.78	8.2	33.42	8.2	24.5	2.35
C5	10 Jun 2015	5	15.88	76.32	8.2	33.40	8.2	24.5	2.96
C5	10 Jun 2015	6	15.44	76.77	8.1	33.40	8.2	24.6	2.99
C5	10 Jun 2015	7	15.04	78.37	7.8	33.41	8.2	24.7	2.92
C5	10 Jun 2015	8	14.25	78.87	7.1	33.42	8.1	24.9	2.09
C5	10 Jun 2015	9	13.52	80.19	6.8	33.45	8.1	25.1	1.35
C5	18 Jun 2015	1	18.48	76.27	8.3	33.40	8.3	23.9	2.72
C5	18 Jun 2015	2	18.43	79.27	8.2	33.43	8.3	24.0	2.58
C5	18 Jun 2015	3	18.35	79.97	8.3	33.44	8.3	24.0	2.09
C5	18 Jun 2015	4	18.24	79.84	8.3	33.44	8.3	24.0	1.83
C5	18 Jun 2015	5	17.74	79.94	8.3	33.50	8.3	24.2	1.95
C5	18 Jun 2015	6	17.08	80.31	8.4	33.47	8.2	24.3	2.35
C5	18 Jun 2015	7	16.74	81.47	8.2	33.45	8.2	24.4	2.64
C5	18 Jun 2015	8	16.32	82.70	8.0	33.44	8.2	24.5	2.80
C5	18 Jun 2015	9	16.02	82.45	7.9	33.43	8.2	24.5	3.15
C5	18 Jun 2015	10	15.76	83.02	7.7	33.42	8.2	24.6	3.26
C5	18 Jun 2015	11	15.39	84.10	7.5	33.42	8.2	24.7	2.88
C5	22 Jun 2015	1	20.49	80.34	9.2	33.43	8.4	23.4	0.76
C5	22 Jun 2015	2	20.43	80.37	9.2	33.42	8.4	23.4	0.78
C5	22 Jun 2015	3	20.03	79.88	9.3	33.41	8.4	23.5	0.94
C5	22 Jun 2015	4	19.78	79.71	9.2	33.42	8.4	23.6	1.32
C5	22 Jun 2015	5	19.54	79.66	9.1	33.42	8.3	23.7	1.84
C5	22 Jun 2015	6	19.40	78.94	9.2	33.41	8.3	23.7	2.21
C5	22 Jun 2015	7	19.10	76.96	9.5	33.39	8.3	23.8	2.25
C5	22 Jun 2015	8	18.54	77.06	9.5	33.38	8.3	23.9	2.37

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C5	22 Jun 2015	9	17.63	78.42	9.1	33.36	8.3	24.1	1.66
C5	22 Jun 2015	10	16.68	79.32	8.9	33.37	8.3	24.3	1.26
C5	22 Jun 2015	11	16.35	80.42	8.9	33.39	8.3	24.4	1.09
A6	06 Jun 2015	1	15.84	76.17	8.9	33.42	8.2	24.6	3.06
A6	06 Jun 2015	2	15.52	75.96	8.8	33.40	8.2	24.6	3.86
A6	06 Jun 2015	3	15.31	75.86	8.7	33.42	8.2	24.7	4.68
A6	06 Jun 2015	4	15.20	76.63	8.6	33.41	8.2	24.7	5.11
A6	06 Jun 2015	5	15.00	76.78	8.4	33.41	8.2	24.7	5.35
A6	06 Jun 2015	6	14.66	77.04	8.1	33.39	8.2	24.8	5.14
A6	06 Jun 2015	7	14.26	76.56	7.8	33.41	8.2	24.9	4.94
A6	06 Jun 2015	8	13.70	78.89	7.4	33.41	8.1	25.0	4.71
A6	06 Jun 2015	9	13.31	80.22	7.2	33.43	8.1	25.1	4.61
A6	06 Jun 2015	10	13.12	80.87	6.9	33.41	8.1	25.1	4.34
A6	06 Jun 2015	11	12.93	81.39	6.8	33.44	8.1	25.2	4.15
A6	06 Jun 2015	12	12.90	82.03	6.7	33.43	8.0	25.2	4.09
A6	06 Jun 2015	13	12.79	80.47	6.6	33.44	8.0	25.2	4.10
A6	06 Jun 2015	14	12.74	81.34	6.6	33.45	8.0	25.2	4.19
A6	06 Jun 2015	15	12.70	82.06	6.5	33.45	8.0	25.3	4.06
A6	06 Jun 2015	16	12.69	82.33	6.5	33.45	8.0	25.3	4.10
A6	06 Jun 2015	17	12.68	82.60	6.4	33.46	8.0	25.3	4.26
A6	06 Jun 2015	18	12.69	82.49	6.4	33.46	8.0	25.3	4.18
A6	06 Jun 2015	19	12.60	82.36	6.2	33.47	8.0	25.3	3.63
A6	06 Jun 2015	20	12.48	82.97	6.1	33.47	8.0	25.3	3.08
A6	06 Jun 2015	21	12.25	83.99	5.7	33.47	8.0	25.4	2.49
A6	10 Jun 2015	1	17.63	83.97	8.2	33.39	8.2	24.1	1.44
A6	10 Jun 2015	2	17.64	84.38	8.2	33.39	8.2	24.1	1.50
A6	10 Jun 2015	3	17.54	84.75	8.2	33.38	8.2	24.1	1.63
A6	10 Jun 2015	4	17.30	84.69	8.3	33.37	8.2	24.2	1.88
A6	10 Jun 2015	5	16.99	83.92	8.4	33.38	8.2	24.3	2.20
A6	10 Jun 2015	6	16.76	82.92	8.5	33.37	8.2	24.3	2.60
A6	10 Jun 2015	7	16.53	82.02	8.6	33.37	8.2	24.4	2.89
A6	10 Jun 2015	8	16.43	81.41	8.6	33.37	8.2	24.4	3.36
A6	10 Jun 2015	9	16.19	81.11	8.4	33.36	8.2	24.4	3.75
A6	10 Jun 2015	10	15.31	81.08	7.9	33.35	8.2	24.6	3.53
A6	10 Jun 2015	11	14.36	81.57	7.5	33.38	8.1	24.9	2.80
A6	10 Jun 2015	12	13.65	84.50	7.0	33.42	8.1	25.0	2.18
A6	10 Jun 2015	13	13.21	86.08	6.6	33.41	8.1	25.1	1.84
A6	10 Jun 2015	14	12.58	86.88	6.3	33.44	8.0	25.3	1.61
A6	10 Jun 2015	15	12.35	87.67	6.0	33.45	8.0	25.3	1.49
A6	10 Jun 2015	16	11.89	88.11	5.8	33.45	8.0	25.4	1.48
A6	10 Jun 2015	17	11.55	88.44	5.6	33.46	7.9	25.5	1.42
A6	10 Jun 2015	18	11.35	89.20	5.5	33.48	7.9	25.5	1.37
A6	10 Jun 2015	19	11.31	89.60	5.4	33.48	7.9	25.5	1.37
A6	10 Jun 2015	20	11.24	89.28	5.3	33.48	7.9	25.6	1.29
A6	10 Jun 2015	21	11.23	89.81	5.3	33.49	7.9	25.6	1.26
A6	18 Jun 2015	1	17.99	78.46	9.0	33.41	8.3	24.1	2.01
A6	18 Jun 2015	2	17.98	80.80	9.0	33.41	8.3	24.1	2.01
A6	18 Jun 2015	3	17.85	82.37	8.9	33.40	8.3	24.1	2.03
A6	18 Jun 2015	4	17.71	84.96	8.9	33.41	8.3	24.1	2.00
A6	18 Jun 2015	5	17.71	86.83	8.8	33.40	8.3	24.1	2.02
A6	18 Jun 2015	6	17.04	87.66	8.4	33.37	8.3	24.3	2.05
A6	18 Jun 2015	7	15.51	88.12	7.8	33.41	8.2	24.6	2.15
A6	18 Jun 2015	8	15.17	88.25	7.6	33.41	8.2	24.7	2.08
A6	18 Jun 2015	9	14.70	88.58	7.3	33.39	8.1	24.8	1.84

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A6	18 Jun 2015	10	14.30	88.42	7.0	33.39	8.1	24.9	1.62
	18 Jun 2015	11	13.85	88.72	6.8	33.43	8.1	25.0	1.43
	18 Jun 2015	12	13.63	89.45	6.6	33.42	8.1	25.0	1.24
	18 Jun 2015	13	13.28	89.86	6.4	33.44	8.0	25.1	1.12
	18 Jun 2015	14	13.04	90.05	6.2	33.44	8.0	25.2	0.98
	18 Jun 2015	15	12.91	90.12	6.1	33.44	8.0	25.2	0.89
	18 Jun 2015	16	12.83	90.34	6.0	33.45	8.0	25.2	0.85
	18 Jun 2015	17	12.80	90.55	6.0	33.45	8.0	25.2	0.81
	18 Jun 2015	18	12.77	90.57	5.9	33.45	8.0	25.2	0.78
	18 Jun 2015	19	12.81	90.94	5.8	33.45	8.0	25.2	0.79
A6	22 Jun 2015	1	19.21	78.09	9.1	33.35	8.3	23.7	2.01
	22 Jun 2015	2	19.06	78.89	9.1	33.43	8.3	23.8	2.01
	22 Jun 2015	3	19.03	80.36	9.0	33.40	8.3	23.8	2.04
	22 Jun 2015	4	19.03	81.24	9.0	33.40	8.3	23.8	2.16
	22 Jun 2015	5	19.04	81.47	8.9	33.40	8.3	23.8	2.16
	22 Jun 2015	6	18.97	81.58	8.9	33.40	8.3	23.8	2.14
	22 Jun 2015	7	18.68	81.63	8.8	33.40	8.3	23.9	2.29
	22 Jun 2015	8	18.46	81.08	8.7	33.40	8.3	23.9	2.37
	22 Jun 2015	9	18.23	81.53	8.7	33.39	8.3	24.0	2.55
	22 Jun 2015	10	18.04	80.68	8.7	33.39	8.3	24.0	2.78
	22 Jun 2015	11	18.01	80.76	8.8	33.39	8.3	24.0	2.90
	22 Jun 2015	12	17.85	81.22	8.7	33.38	8.3	24.1	2.99
	22 Jun 2015	13	17.55	81.43	8.7	33.39	8.2	24.1	2.99
	22 Jun 2015	14	17.32	81.95	8.5	33.38	8.2	24.2	2.92
	22 Jun 2015	15	16.72	82.41	8.2	33.36	8.2	24.3	2.61
	22 Jun 2015	16	15.40	83.58	7.8	33.35	8.2	24.6	2.08
	22 Jun 2015	17	14.39	85.56	7.6	33.35	8.2	24.8	1.79
	22 Jun 2015	18	13.91	86.96	7.3	33.33	8.1	24.9	1.69
	22 Jun 2015	19	13.43	87.87	7.3	33.33	8.1	25.0	1.70
C6	06 Jun 2015	1	16.70	74.60	8.8	33.43	8.2	24.4	1.11
	06 Jun 2015	2	16.56	75.10	8.9	33.41	8.2	24.4	1.45
	06 Jun 2015	3	16.16	74.38	9.1	33.41	8.2	24.5	2.09
	06 Jun 2015	4	15.96	74.56	9.2	33.40	8.3	24.5	2.93
	06 Jun 2015	5	15.62	74.31	9.1	33.40	8.3	24.6	4.11
	06 Jun 2015	6	15.08	74.34	8.6	33.40	8.2	24.7	5.75
	06 Jun 2015	7	14.21	74.37	7.6	33.41	8.2	24.9	5.01
	06 Jun 2015	8	13.48	73.94	6.8	33.44	8.1	25.1	2.72
	06 Jun 2015	9	12.87	76.91	6.2	33.46	8.0	25.2	1.31
	06 Jun 2015	10	12.73	81.92	6.1	33.47	8.0	25.3	0.99
C6	10 Jun 2015	1	16.51	78.21	8.6	33.42	8.2	24.4	2.19
	10 Jun 2015	2	16.38	78.23	8.6	33.42	8.2	24.4	2.76
	10 Jun 2015	3	16.06	78.26	8.8	33.42	8.2	24.5	3.52
	10 Jun 2015	4	15.98	78.21	8.9	33.42	8.2	24.5	4.22
	10 Jun 2015	5	15.85	78.69	8.7	33.40	8.2	24.6	4.10
	10 Jun 2015	6	15.35	79.13	8.3	33.41	8.2	24.7	3.90
	10 Jun 2015	7	14.83	79.69	7.7	33.41	8.2	24.8	3.29
	10 Jun 2015	8	14.08	78.82	6.7	33.42	8.1	24.9	1.96
	10 Jun 2015	9	13.07	80.23	5.8	33.41	8.0	25.1	1.06
	10 Jun 2015	10	12.66	81.87	5.5	33.46	7.9	25.3	0.74
C6	18 Jun 2015	1	18.55	84.01	9.0	33.41	8.3	23.9	1.19
	18 Jun 2015	2	18.51	84.05	9.0	33.40	8.3	23.9	1.38
	18 Jun 2015	3	17.89	83.87	9.2	33.39	8.3	24.1	2.31
	18 Jun 2015	4	17.30	81.56	9.2	33.39	8.3	24.2	3.91

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
C6	18 Jun 2015	5	16.91	79.32	8.9	33.38	8.3	24.3	4.10
	18 Jun 2015	6	16.49	79.07	8.8	33.39	8.2	24.4	3.84
	18 Jun 2015	7	16.27	79.99	8.6	33.39	8.2	24.4	3.92
	18 Jun 2015	8	16.01	80.08	8.4	33.39	8.2	24.5	3.80
	18 Jun 2015	9	15.66	80.17	7.8	33.39	8.2	24.6	2.70
	18 Jun 2015	10	15.34	81.49	7.2	33.40	8.1	24.7	1.46
C6	22 Jun 2015	2	19.85	82.75	9.3	33.41	8.4	23.6	0.97
	22 Jun 2015	3	19.58	82.69	9.4	33.40	8.4	23.7	1.14
	22 Jun 2015	4	19.35	82.88	9.5	33.40	8.3	23.7	1.35
	22 Jun 2015	5	19.13	82.24	9.6	33.40	8.3	23.8	1.52
	22 Jun 2015	6	18.94	82.04	9.8	33.38	8.3	23.8	1.78
	22 Jun 2015	7	18.52	81.96	9.9	33.38	8.3	23.9	2.17
	22 Jun 2015	8	18.26	81.60	9.7	33.39	8.3	24.0	2.39
	22 Jun 2015	9	17.40	81.03	9.3	33.33	8.3	24.1	1.74
	22 Jun 2015	10	16.81	80.67	9.5	33.41	8.3	24.3	1.28
A7	06 Jun 2015	1	15.91	63.80	8.8	33.41	8.2	24.5	5.06
	06 Jun 2015	2	15.91	65.96	8.8	33.40	8.2	24.5	5.37
	06 Jun 2015	3	15.90	69.14	8.8	33.40	8.2	24.5	5.48
	06 Jun 2015	4	15.89	69.98	8.9	33.41	8.2	24.5	5.24
	06 Jun 2015	5	15.86	69.52	8.7	33.40	8.2	24.5	5.71
	06 Jun 2015	6	15.08	71.45	8.4	33.37	8.2	24.7	7.09
	06 Jun 2015	7	14.27	71.06	8.3	33.39	8.2	24.9	7.66
	06 Jun 2015	8	14.03	71.73	8.1	33.40	8.2	24.9	6.94
	06 Jun 2015	9	13.84	71.63	7.8	33.41	8.1	25.0	6.43
	06 Jun 2015	10	13.61	71.19	7.6	33.40	8.1	25.0	5.99
	06 Jun 2015	11	13.38	75.58	7.6	33.41	8.1	25.1	5.90
	06 Jun 2015	12	13.22	76.52	7.3	33.40	8.1	25.1	5.62
	06 Jun 2015	13	12.89	77.69	7.0	33.42	8.1	25.2	4.99
	06 Jun 2015	14	12.64	78.22	6.7	33.43	8.0	25.2	4.36
	06 Jun 2015	15	12.38	79.71	6.5	33.44	8.0	25.3	4.39
	06 Jun 2015	16	12.28	80.78	6.4	33.44	8.0	25.3	4.14
	06 Jun 2015	17	12.20	81.51	6.3	33.44	8.0	25.3	4.00
	06 Jun 2015	18	12.15	81.59	6.1	33.46	8.0	25.4	3.50
	06 Jun 2015	19	12.08	82.04	5.9	33.47	8.0	25.4	3.27
	06 Jun 2015	20	11.99	83.52	NA	33.48	7.9	25.4	NA
A7	10 Jun 2015	1	17.28	85.27	8.4	33.38	8.2	24.2	1.40
	10 Jun 2015	2	17.22	85.93	8.4	33.38	8.2	24.2	1.61
	10 Jun 2015	3	17.10	85.79	8.4	33.37	8.2	24.2	1.79
	10 Jun 2015	4	16.93	84.79	8.4	33.37	8.2	24.3	2.01
	10 Jun 2015	5	16.75	84.14	8.4	33.37	8.2	24.3	2.28
	10 Jun 2015	6	16.49	83.64	8.2	33.35	8.2	24.4	2.56
	10 Jun 2015	7	15.54	83.21	8.1	33.35	8.2	24.6	2.92
	10 Jun 2015	8	14.93	82.94	7.9	33.38	8.2	24.7	3.04
	10 Jun 2015	9	14.12	83.47	7.5	33.37	8.1	24.9	3.23
	10 Jun 2015	10	13.46	83.87	7.0	33.41	8.1	25.1	3.45
	10 Jun 2015	11	13.00	83.81	6.5	33.43	8.0	25.2	3.19
	10 Jun 2015	12	12.69	84.15	6.2	33.44	8.0	25.2	3.04
	10 Jun 2015	13	12.53	84.41	5.9	33.45	8.0	25.3	2.71
	10 Jun 2015	14	12.25	84.56	5.6	33.45	7.9	25.3	2.27
	10 Jun 2015	15	12.01	85.29	5.5	33.47	7.9	25.4	1.91
	10 Jun 2015	16	11.90	86.19	5.4	33.47	7.9	25.4	1.77
	10 Jun 2015	17	11.69	86.62	5.3	33.48	7.9	25.5	1.45
	10 Jun 2015	18	11.50	87.38	5.3	33.49	7.9	25.5	1.17
	10 Jun 2015	19	11.47	87.95	5.2	33.49	7.9	25.5	1.16

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
A7	10 Jun 2015	20	11.46	88.07	5.2	33.49	7.9	25.5	1.16
A7	18 Jun 2015	1	18.06	75.33	8.9	33.41	8.3	24.0	2.17
A7	18 Jun 2015	2	18.08	77.48	8.8	33.41	8.3	24.0	2.15
A7	18 Jun 2015	3	17.82	79.45	8.8	33.40	8.3	24.1	2.44
A7	18 Jun 2015	4	17.25	82.07	8.6	33.38	8.2	24.2	2.52
A7	18 Jun 2015	5	16.83	82.95	8.4	33.38	8.2	24.3	2.21
A7	18 Jun 2015	6	16.46	85.50	8.3	33.38	8.2	24.4	2.06
A7	18 Jun 2015	7	16.12	86.48	8.2	33.38	8.2	24.5	2.05
A7	18 Jun 2015	8	15.94	87.29	8.2	33.38	8.2	24.5	1.98
A7	18 Jun 2015	9	15.58	88.01	8.2	33.38	8.2	24.6	1.96
A7	18 Jun 2015	10	15.30	88.15	7.9	33.38	8.2	24.7	1.95
A7	18 Jun 2015	11	14.99	88.35	7.8	33.38	8.2	24.7	1.82
A7	18 Jun 2015	12	14.76	88.82	7.5	33.40	8.1	24.8	1.67
A7	18 Jun 2015	13	14.29	89.04	7.1	33.40	8.1	24.9	1.43
A7	18 Jun 2015	14	14.07	89.46	6.9	33.41	8.1	24.9	1.26
A7	18 Jun 2015	15	13.79	89.77	6.6	33.41	8.1	25.0	1.10
A7	18 Jun 2015	16	13.24	89.96	6.3	33.43	8.0	25.1	0.89
A7	18 Jun 2015	17	13.17	89.96	6.2	33.44	8.0	25.1	0.80
A7	22 Jun 2015	1	19.62	80.11	9.4	33.41	8.3	23.7	1.44
A7	22 Jun 2015	2	19.59	80.27	9.3	33.41	8.3	23.7	1.57
A7	22 Jun 2015	3	19.43	81.01	9.3	33.41	8.3	23.7	1.92
A7	22 Jun 2015	4	19.26	81.17	9.2	33.40	8.3	23.7	2.31
A7	22 Jun 2015	5	19.00	81.21	9.1	33.40	8.3	23.8	2.53
A7	22 Jun 2015	6	18.76	81.12	8.9	33.40	8.3	23.9	2.70
A7	22 Jun 2015	7	18.63	80.70	8.9	33.39	8.3	23.9	2.73
A7	22 Jun 2015	8	18.51	81.10	8.8	33.39	8.3	23.9	2.77
A7	22 Jun 2015	9	18.48	80.99	8.8	33.39	8.3	23.9	2.84
A7	22 Jun 2015	10	18.31	81.20	8.8	33.39	8.3	24.0	2.89
A7	22 Jun 2015	11	18.04	81.41	8.6	33.38	8.3	24.0	3.05
A7	22 Jun 2015	12	17.76	81.24	8.6	33.39	8.2	24.1	3.24
A7	22 Jun 2015	13	17.52	80.93	8.4	33.38	8.2	24.1	3.29
A7	22 Jun 2015	14	17.22	81.17	8.2	33.38	8.2	24.2	3.14
A7	22 Jun 2015	15	16.20	81.23	7.7	33.37	8.2	24.5	2.69
A7	22 Jun 2015	16	15.29	82.92	7.5	33.36	8.2	24.6	2.18
A7	22 Jun 2015	17	14.93	84.44	7.2	33.36	8.1	24.7	1.92
A7	22 Jun 2015	18	13.97	85.22	7.1	33.35	8.1	24.9	1.58
A7	22 Jun 2015	19	13.84	86.18	7.0	33.36	8.1	25.0	1.47
C7	06 Jun 2015	1	16.04	73.39	9.6	33.41	8.3	24.5	4.49
C7	06 Jun 2015	2	16.04	73.78	9.6	33.41	8.3	24.5	4.59
C7	06 Jun 2015	3	16.04	74.57	9.6	33.41	8.3	24.5	4.58
C7	06 Jun 2015	4	16.04	75.06	9.7	33.41	8.3	24.5	4.51
C7	06 Jun 2015	5	16.02	74.71	9.6	33.41	8.3	24.5	4.63
C7	06 Jun 2015	6	15.90	75.14	9.4	33.41	8.3	24.5	4.74
C7	06 Jun 2015	7	15.74	76.18	9.2	33.41	8.3	24.6	4.97
C7	06 Jun 2015	8	15.73	75.98	9.0	33.40	8.2	24.6	5.14
C7	06 Jun 2015	9	15.54	75.81	9.0	33.41	8.2	24.6	5.36
C7	06 Jun 2015	10	15.36	75.97	8.7	33.40	8.2	24.7	5.32
C7	06 Jun 2015	11	15.04	75.56	8.2	33.40	8.2	24.7	5.19
C7	06 Jun 2015	12	13.85	75.61	7.4	33.40	8.2	25.0	4.62
C7	06 Jun 2015	13	12.95	75.72	6.6	33.46	8.0	25.2	3.66
C7	06 Jun 2015	14	11.93	78.64	5.9	33.47	8.0	25.4	2.72
C7	06 Jun 2015	15	11.61	81.93	5.6	33.47	7.9	25.5	2.55
C7	06 Jun 2015	16	11.35	85.09	5.4	33.48	7.9	25.5	2.24
C7	06 Jun 2015	17	11.28	86.81	5.1	33.51	7.9	25.6	1.94

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C7	06 Jun 2015	18	11.16	87.20	4.9	33.52	7.9	25.6	1.60
C7	10 Jun 2015	1	15.65	79.33	8.6	33.41	8.2	24.6	3.34
C7	10 Jun 2015	2	15.64	81.13	8.8	33.41	8.2	24.6	3.29
C7	10 Jun 2015	3	15.64	82.34	8.8	33.41	8.2	24.6	3.26
C7	10 Jun 2015	4	15.64	82.89	8.8	33.41	8.2	24.6	3.28
C7	10 Jun 2015	5	15.65	82.91	8.7	33.41	8.2	24.6	3.29
C7	10 Jun 2015	6	15.61	82.87	8.6	33.40	8.2	24.6	3.26
C7	10 Jun 2015	7	15.50	82.52	8.4	33.40	8.2	24.6	3.45
C7	10 Jun 2015	8	15.16	82.29	8.2	33.40	8.2	24.7	3.74
C7	10 Jun 2015	9	14.71	81.97	8.0	33.39	8.2	24.8	3.61
C7	10 Jun 2015	10	14.07	82.23	7.3	33.41	8.1	24.9	3.02
C7	10 Jun 2015	11	13.24	83.90	6.4	33.43	8.1	25.1	2.24
C7	10 Jun 2015	12	12.71	86.33	5.6	33.46	8.0	25.3	2.06
C7	10 Jun 2015	13	12.43	87.51	5.2	33.47	7.9	25.3	1.71
C7	10 Jun 2015	14	12.25	88.15	4.8	33.49	7.9	25.4	1.77
C7	10 Jun 2015	15	12.04	88.64	4.4	33.49	7.8	25.4	1.13
C7	10 Jun 2015	16	11.88	88.15	4.1	33.49	7.8	25.4	0.83
C7	10 Jun 2015	17	11.69	87.13	3.8	33.51	7.8	25.5	0.62
C7	10 Jun 2015	18	11.67	87.83	3.7	33.51	7.8	25.5	0.50
C7	18 Jun 2015	1	18.27	85.45	8.8	33.41	8.3	24.0	1.42
C7	18 Jun 2015	2	18.11	85.42	8.7	33.38	8.3	24.0	1.65
C7	18 Jun 2015	3	17.44	86.09	8.4	33.37	8.2	24.2	2.07
C7	18 Jun 2015	4	16.75	86.39	8.3	33.37	8.2	24.3	2.16
C7	18 Jun 2015	5	16.45	86.55	8.2	33.37	8.2	24.4	2.29
C7	18 Jun 2015	6	16.25	87.16	8.1	33.37	8.2	24.4	2.38
C7	18 Jun 2015	7	16.08	87.27	8.1	33.37	8.2	24.5	2.45
C7	18 Jun 2015	8	15.86	87.31	8.0	33.37	8.2	24.5	2.39
C7	18 Jun 2015	9	15.58	87.40	7.8	33.38	8.2	24.6	2.25
C7	18 Jun 2015	10	15.31	87.49	7.4	33.38	8.1	24.7	1.97
C7	18 Jun 2015	11	14.96	88.17	7.0	33.39	8.1	24.7	1.64
C7	18 Jun 2015	12	14.77	88.67	6.6	33.39	8.1	24.8	1.32
C7	18 Jun 2015	13	14.60	89.19	6.2	33.40	8.1	24.8	1.10
C7	18 Jun 2015	14	14.48	89.55	6.0	33.40	8.0	24.9	0.95
C7	18 Jun 2015	15	14.36	89.79	5.7	33.41	8.0	24.9	0.83
C7	18 Jun 2015	16	14.26	90.21	5.5	33.41	8.0	24.9	0.73
C7	18 Jun 2015	17	14.07	89.73	5.0	33.41	8.0	24.9	0.57
C7	18 Jun 2015	18	13.84	90.08	4.7	33.41	7.9	25.0	0.46
C7	22 Jun 2015	1	19.48	86.69	9.8	33.40	8.4	23.7	1.57
C7	22 Jun 2015	2	19.41	86.83	9.5	33.39	8.3	23.7	1.66
C7	22 Jun 2015	3	19.32	87.60	9.2	33.39	8.3	23.7	1.88
C7	22 Jun 2015	4	19.17	87.73	8.9	33.39	8.3	23.7	2.01
C7	22 Jun 2015	5	19.05	87.32	8.6	33.40	8.3	23.8	2.15
C7	22 Jun 2015	6	18.92	86.99	8.5	33.39	8.3	23.8	2.23
C7	22 Jun 2015	7	18.72	86.02	8.4	33.39	8.3	23.9	2.33
C7	22 Jun 2015	8	18.64	85.43	8.3	33.39	8.3	23.9	2.46
C7	22 Jun 2015	9	18.52	84.78	8.5	33.39	8.2	23.9	2.54
C7	22 Jun 2015	10	18.35	84.03	8.5	33.39	8.3	24.0	2.80
C7	22 Jun 2015	11	18.03	83.70	8.4	33.35	8.2	24.0	3.01
C7	22 Jun 2015	12	17.47	83.41	8.3	33.37	8.2	24.2	3.10
C7	22 Jun 2015	13	16.95	83.35	8.2	33.37	8.2	24.3	3.06
C7	22 Jun 2015	14	16.42	83.30	8.0	33.36	8.2	24.4	3.40
C7	22 Jun 2015	15	15.94	83.29	7.8	33.40	8.2	24.5	3.23
C7	22 Jun 2015	16	15.44	83.26	7.4	33.37	8.2	24.6	2.59
C7	22 Jun 2015	17	15.22	83.33	7.1	33.39	8.1	24.7	1.97

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C7	22 Jun 2015	18	15.05	85.37	6.8	33.38	8.1	24.7	1.63
C8	06 Jun 2015	1	16.26	77.46	9.1	33.41	8.2	24.5	2.15
C8	06 Jun 2015	2	16.19	77.00	9.0	33.40	8.2	24.5	2.34
C8	06 Jun 2015	3	16.08	77.52	9.0	33.40	8.2	24.5	2.99
C8	06 Jun 2015	4	15.93	77.01	8.7	33.39	8.2	24.5	5.05
C8	06 Jun 2015	5	14.67	76.85	8.2	33.34	8.2	24.8	8.89
C8	06 Jun 2015	6	13.70	73.48	7.7	33.41	8.1	25.0	10.72
C8	06 Jun 2015	7	13.50	70.71	7.4	33.39	8.1	25.0	10.49
C8	06 Jun 2015	8	12.97	70.90	7.0	33.37	8.1	25.1	8.43
C8	06 Jun 2015	9	12.43	72.96	6.7	33.42	8.0	25.3	6.51
C8	06 Jun 2015	10	12.30	75.51	6.4	33.41	8.0	25.3	5.47
C8	06 Jun 2015	11	11.96	78.05	6.3	33.42	8.0	25.4	4.59
C8	06 Jun 2015	12	11.83	80.59	6.1	33.43	8.0	25.4	4.56
C8	06 Jun 2015	13	11.66	82.10	6.0	33.43	8.0	25.4	4.06
C8	06 Jun 2015	14	11.53	83.53	5.8	33.44	8.0	25.5	3.83
C8	06 Jun 2015	15	11.48	84.48	5.6	33.46	7.9	25.5	3.31
C8	06 Jun 2015	16	11.44	84.89	5.4	33.47	7.9	25.5	2.81
C8	06 Jun 2015	17	11.40	85.28	5.3	33.48	7.9	25.5	2.47
C8	06 Jun 2015	18	11.39	85.54	5.2	33.49	7.9	25.5	2.35
C8	06 Jun 2015	19	11.38	85.96	5.1	33.49	7.9	25.5	2.30
C8	10 Jun 2015	1	16.10	80.97	8.6	33.41	8.2	24.5	2.05
C8	10 Jun 2015	2	15.96	80.85	8.5	33.41	8.2	24.5	2.32
C8	10 Jun 2015	3	15.68	80.93	8.4	33.41	8.2	24.6	3.11
C8	10 Jun 2015	4	15.39	80.72	8.4	33.41	8.2	24.7	4.09
C8	10 Jun 2015	5	15.10	80.56	8.4	33.41	8.2	24.7	4.39
C8	10 Jun 2015	6	14.94	80.38	8.2	33.41	8.2	24.8	4.14
C8	10 Jun 2015	7	14.59	81.25	8.0	33.38	8.2	24.8	4.08
C8	10 Jun 2015	8	13.98	82.45	7.8	33.42	8.1	25.0	4.24
C8	10 Jun 2015	9	13.63	82.45	7.5	33.39	8.1	25.0	4.14
C8	10 Jun 2015	10	13.14	82.48	7.1	33.41	8.1	25.1	3.77
C8	10 Jun 2015	11	12.82	83.30	6.6	33.42	8.1	25.2	3.22
C8	10 Jun 2015	12	12.37	85.16	6.1	33.42	8.0	25.3	3.02
C8	10 Jun 2015	13	12.05	86.49	5.5	33.46	8.0	25.4	2.38
C8	10 Jun 2015	14	11.89	87.72	5.0	33.45	7.9	25.4	1.77
C8	10 Jun 2015	15	11.64	87.92	4.7	33.47	7.9	25.5	1.35
C8	10 Jun 2015	16	11.56	87.94	4.5	33.49	7.8	25.5	1.21
C8	10 Jun 2015	17	11.44	88.33	4.4	33.49	7.8	25.5	1.18
C8	10 Jun 2015	18	11.33	86.10	4.4	33.51	7.8	25.6	1.15
C8	10 Jun 2015	19	11.31	83.16	4.4	33.52	7.8	25.6	1.24
C8	18 Jun 2015	1	17.76	85.60	8.2	33.38	8.2	24.1	2.36
C8	18 Jun 2015	2	17.48	85.60	8.2	33.38	8.2	24.2	2.52
C8	18 Jun 2015	3	16.97	85.65	8.3	33.37	8.2	24.3	2.52
C8	18 Jun 2015	4	16.42	86.26	8.2	33.37	8.2	24.4	2.47
C8	18 Jun 2015	5	15.98	86.62	8.1	33.36	8.2	24.5	2.22
C8	18 Jun 2015	6	15.47	87.30	7.9	33.37	8.2	24.6	2.12
C8	18 Jun 2015	7	15.30	88.02	7.7	33.38	8.2	24.7	1.98
C8	18 Jun 2015	8	15.22	88.53	7.6	33.38	8.1	24.7	1.93
C8	18 Jun 2015	9	15.06	88.84	7.5	33.38	8.1	24.7	1.89
C8	18 Jun 2015	10	14.78	88.84	7.4	33.38	8.1	24.8	1.77
C8	18 Jun 2015	11	14.64	89.02	7.3	33.39	8.1	24.8	1.73
C8	18 Jun 2015	12	14.55	89.12	7.3	33.39	8.1	24.8	1.68
C8	18 Jun 2015	13	14.45	89.14	7.2	33.39	8.1	24.8	1.56
C8	18 Jun 2015	14	14.36	89.40	6.9	33.40	8.1	24.9	1.41
C8	18 Jun 2015	15	14.19	89.38	6.5	33.40	8.1	24.9	1.15

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
C8	18 Jun 2015	16	13.99	89.61	5.8	33.41	8.0	25.0	0.81
C8	18 Jun 2015	17	13.75	90.11	5.4	33.41	8.0	25.0	0.61
C8	18 Jun 2015	18	13.57	90.19	5.7	33.41	8.0	25.0	0.62
C8	18 Jun 2015	19	13.32	90.14	6.0	33.41	8.0	25.1	0.76
C8	18 Jun 2015	20	13.28	89.91	6.1	33.41	8.0	25.1	0.71
C8	22 Jun 2015	1	19.85	86.22	8.9	33.40	8.3	23.6	0.85
C8	22 Jun 2015	2	19.82	86.30	9.0	33.41	8.3	23.6	0.89
C8	22 Jun 2015	3	19.67	86.18	8.8	33.39	8.3	23.6	1.09
C8	22 Jun 2015	4	19.40	85.53	8.6	33.40	8.3	23.7	1.33
C8	22 Jun 2015	5	19.26	85.07	8.5	33.39	8.3	23.7	1.61
C8	22 Jun 2015	6	19.06	84.60	8.4	33.38	8.3	23.8	1.96
C8	22 Jun 2015	7	18.53	83.78	8.5	33.35	8.3	23.9	2.44
C8	22 Jun 2015	8	18.18	82.53	8.6	33.38	8.3	24.0	2.74
C8	22 Jun 2015	9	18.16	81.46	8.6	33.38	8.3	24.0	2.93
C8	22 Jun 2015	10	18.08	81.33	8.4	33.35	8.3	24.0	3.16
C8	22 Jun 2015	11	17.10	81.66	8.3	33.32	8.3	24.2	4.08
C8	22 Jun 2015	12	16.43	79.91	8.1	33.38	8.2	24.4	4.88
C8	22 Jun 2015	13	16.14	79.04	8.1	33.36	8.2	24.5	5.11
C8	22 Jun 2015	14	15.80	79.80	8.5	33.34	8.2	24.5	4.85
C8	22 Jun 2015	15	15.66	81.15	8.5	33.33	8.2	24.5	4.63
C8	22 Jun 2015	16	15.42	81.64	8.2	33.35	8.2	24.6	4.26
C8	22 Jun 2015	17	15.34	82.54	7.8	33.36	8.2	24.6	3.63
C8	22 Jun 2015	18	14.93	83.69	6.8	33.36	8.2	24.7	2.11
C8	22 Jun 2015	19	14.51	85.53	6.5	33.40	8.1	24.8	1.55

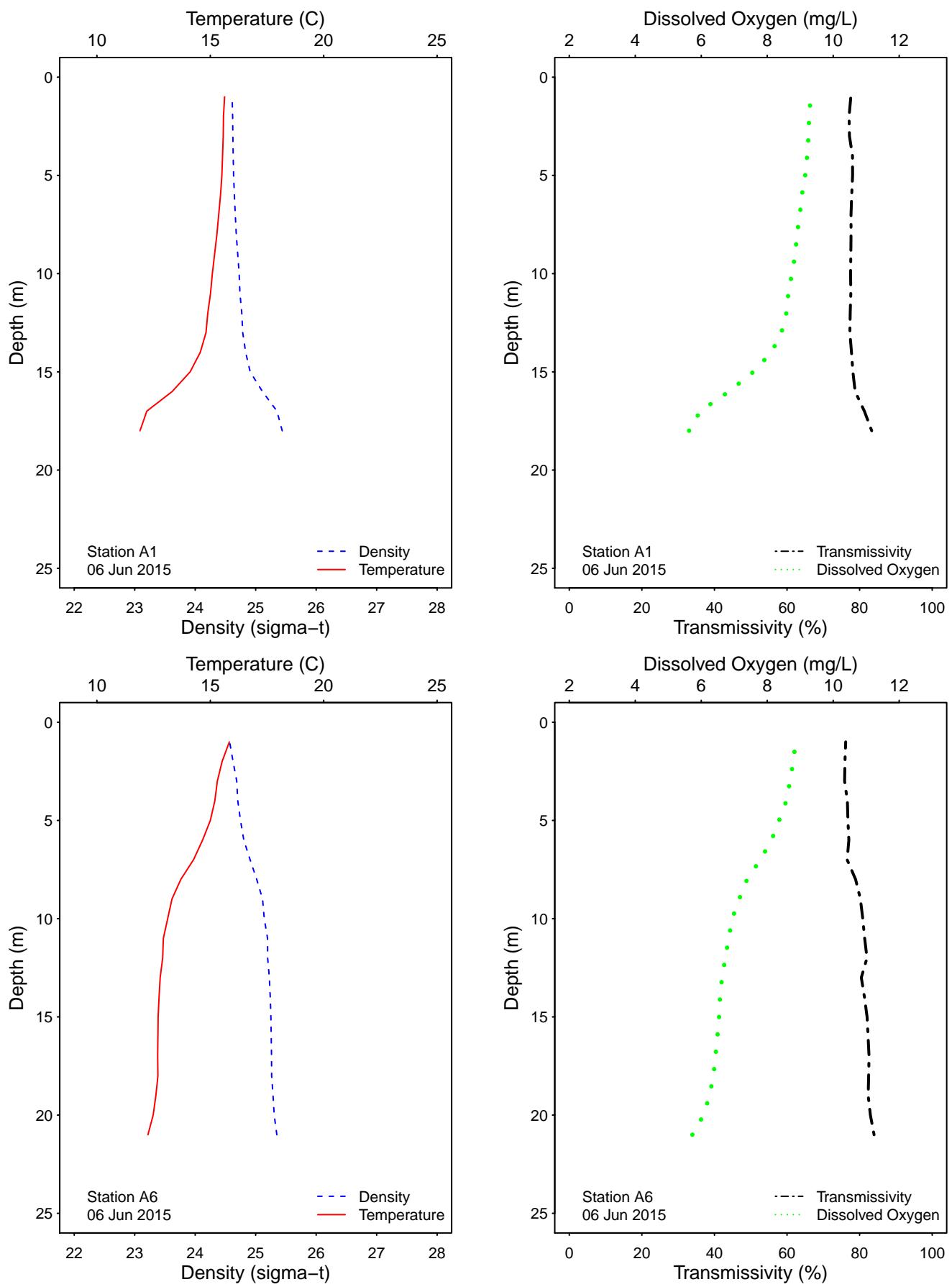


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

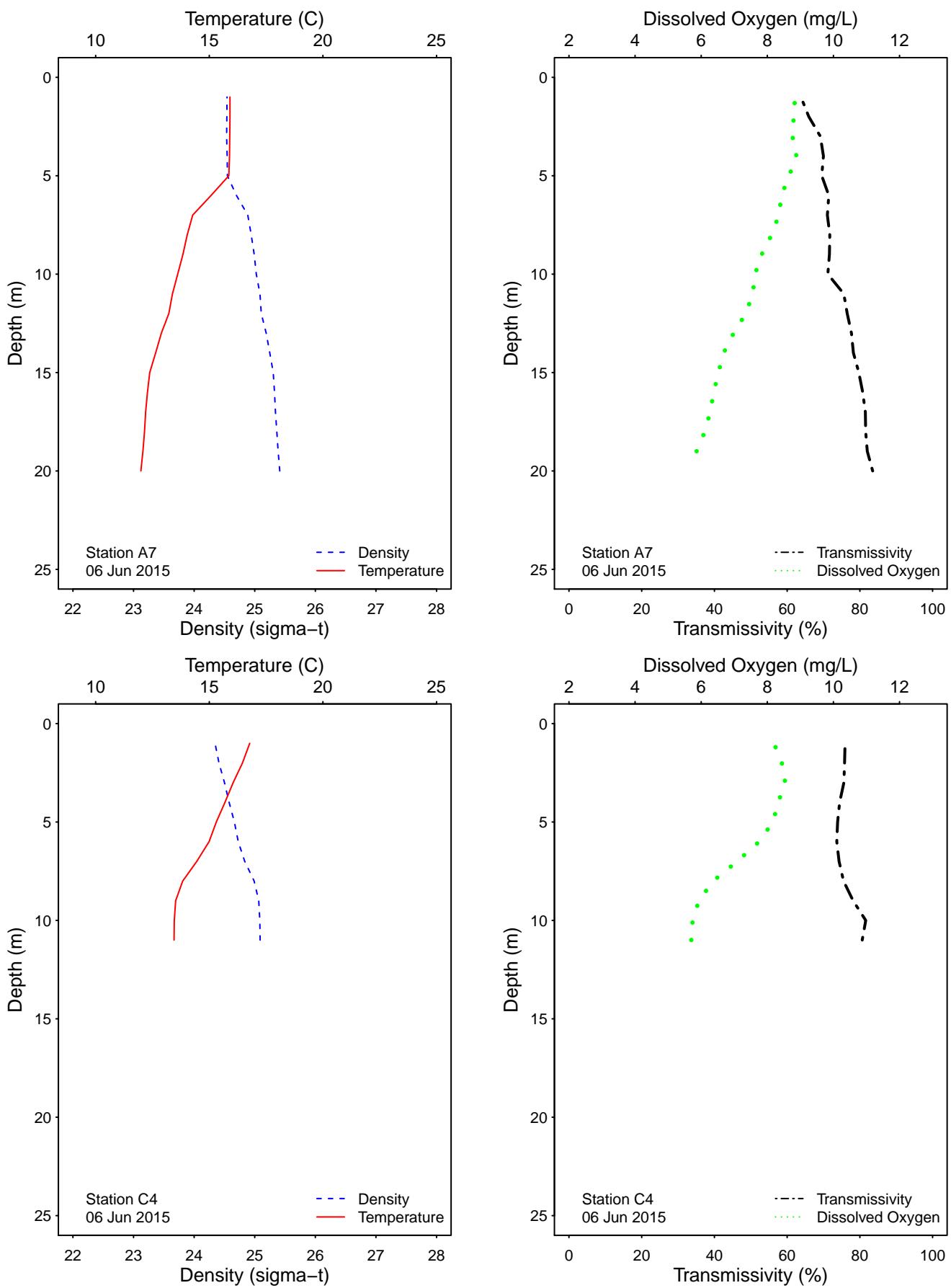


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

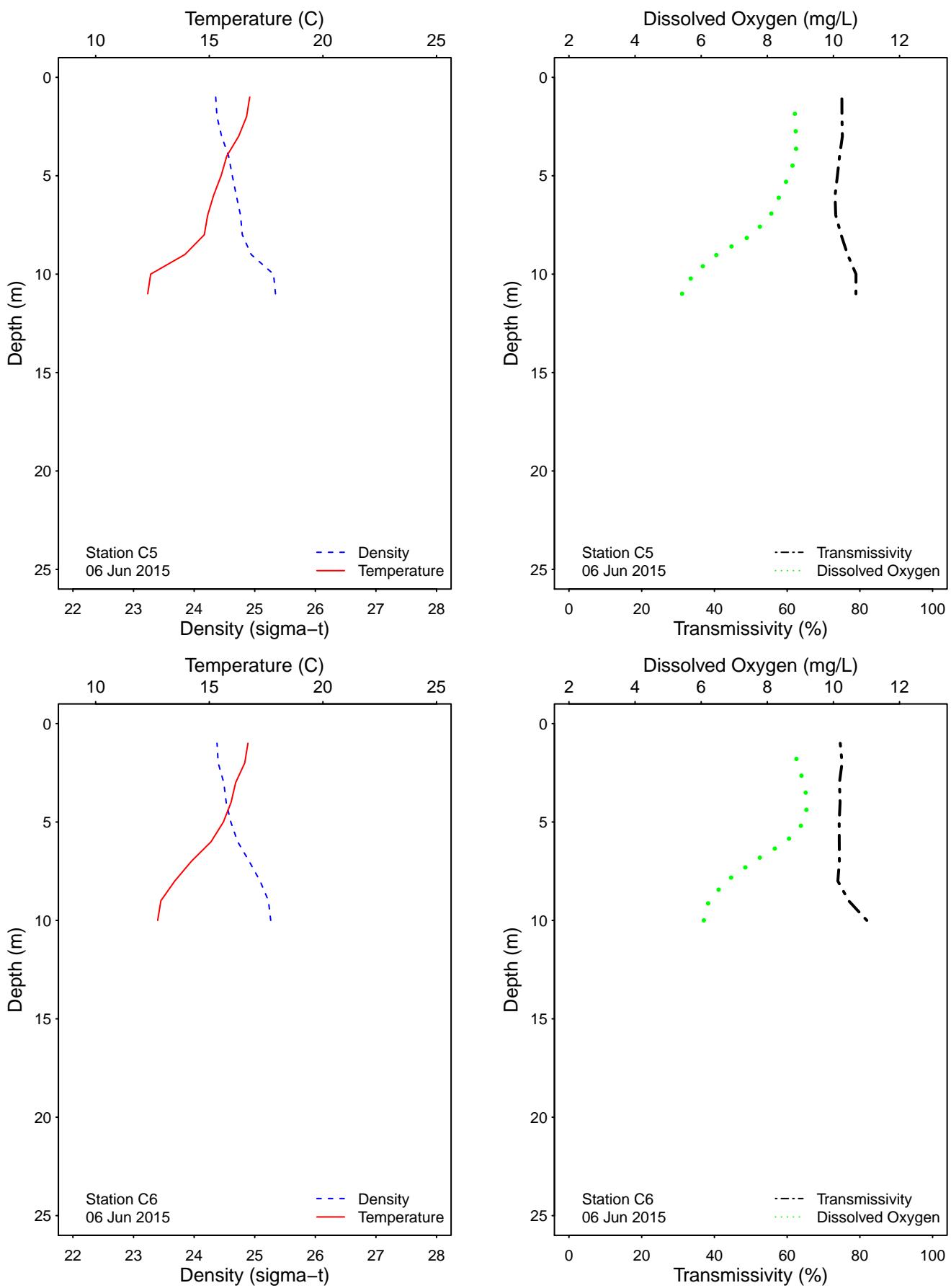


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

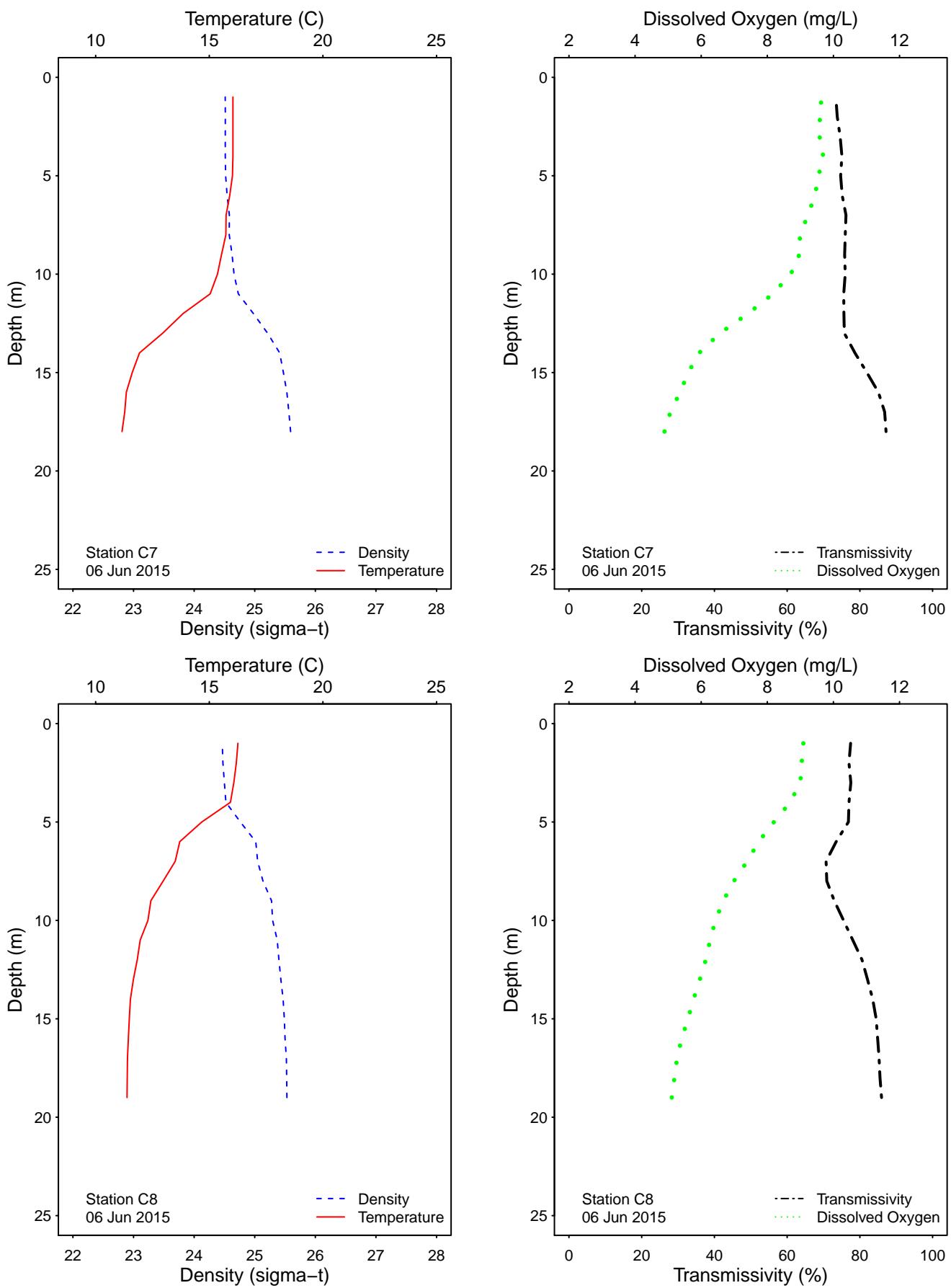


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

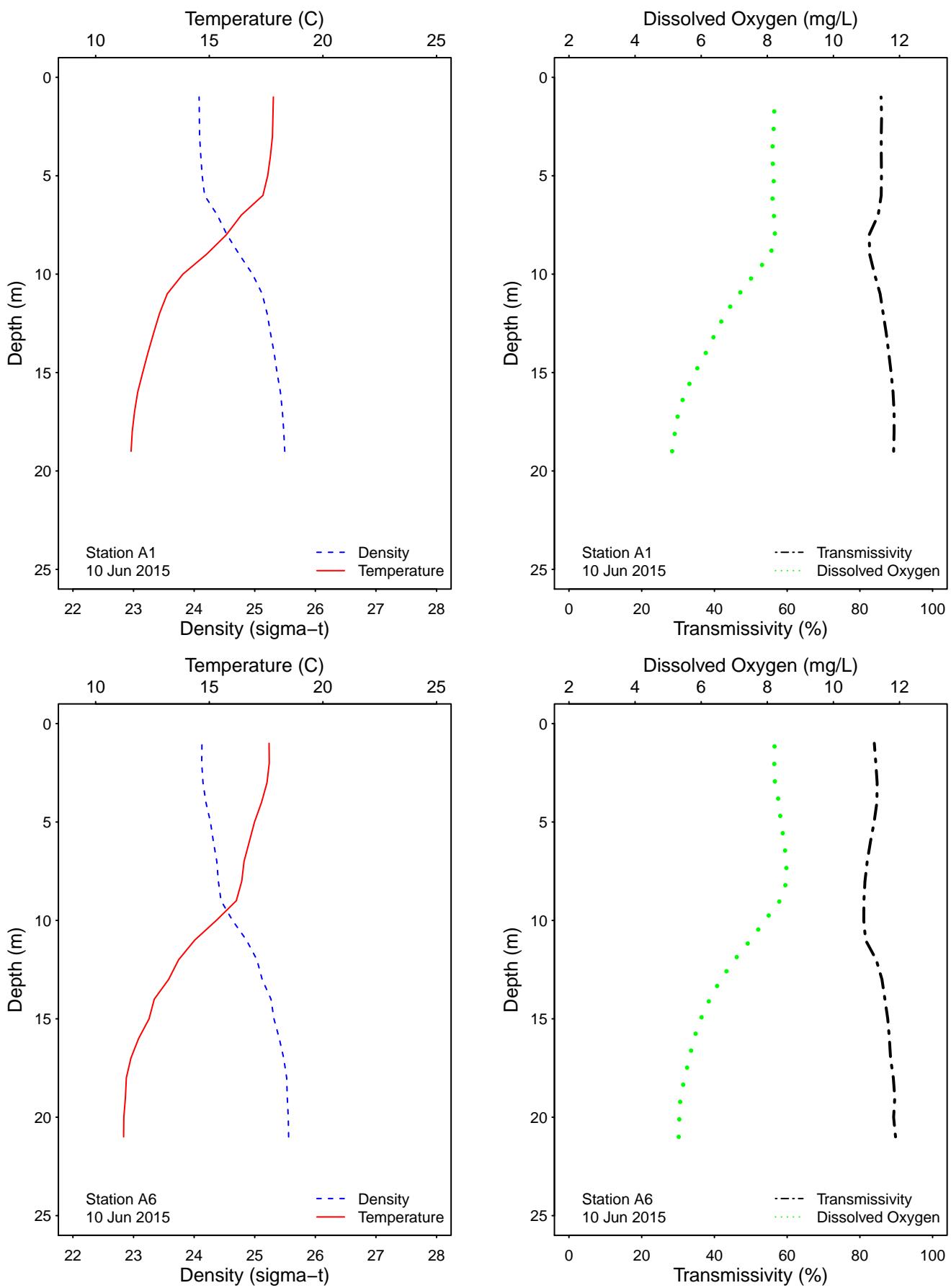


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

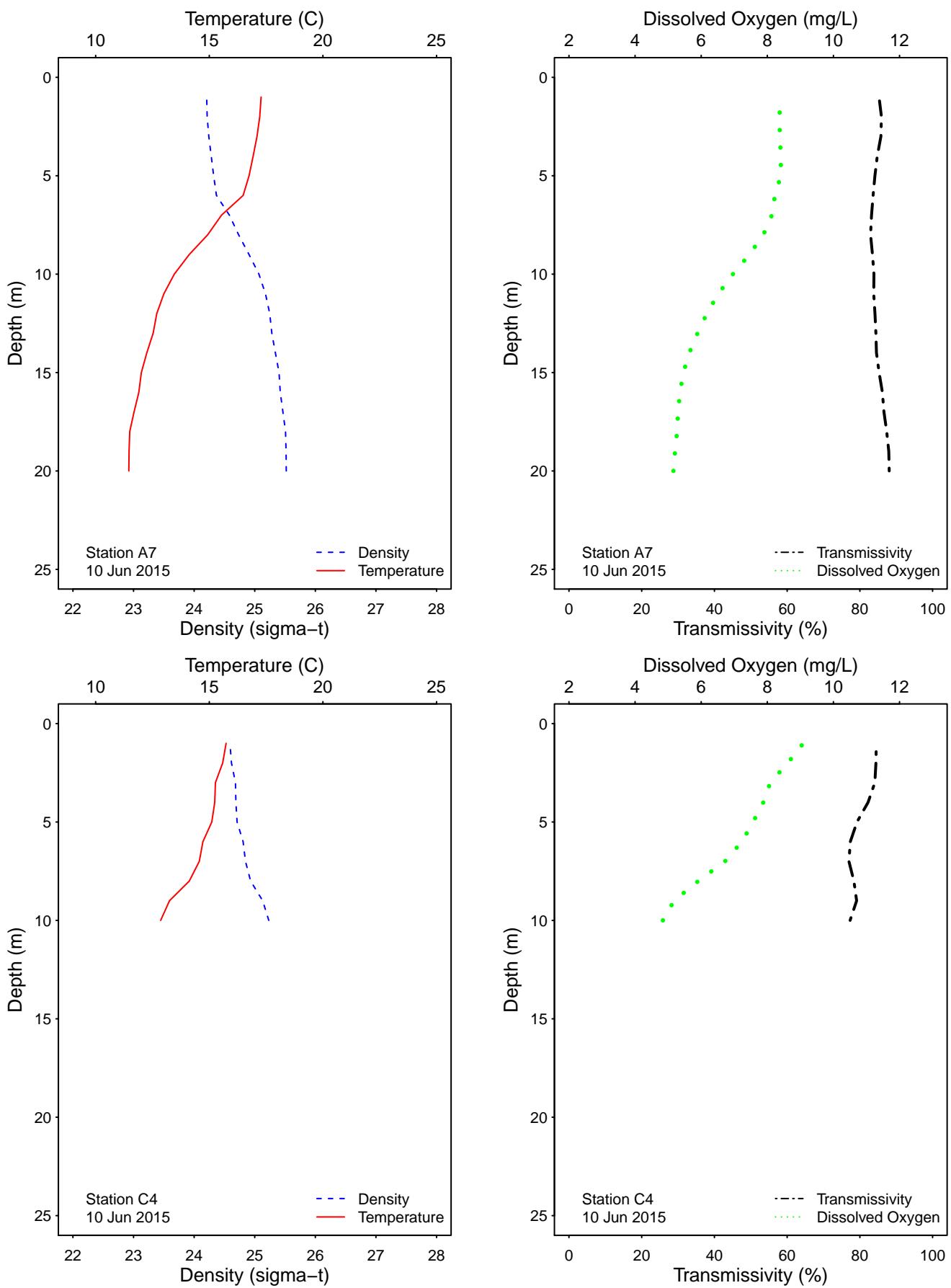


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

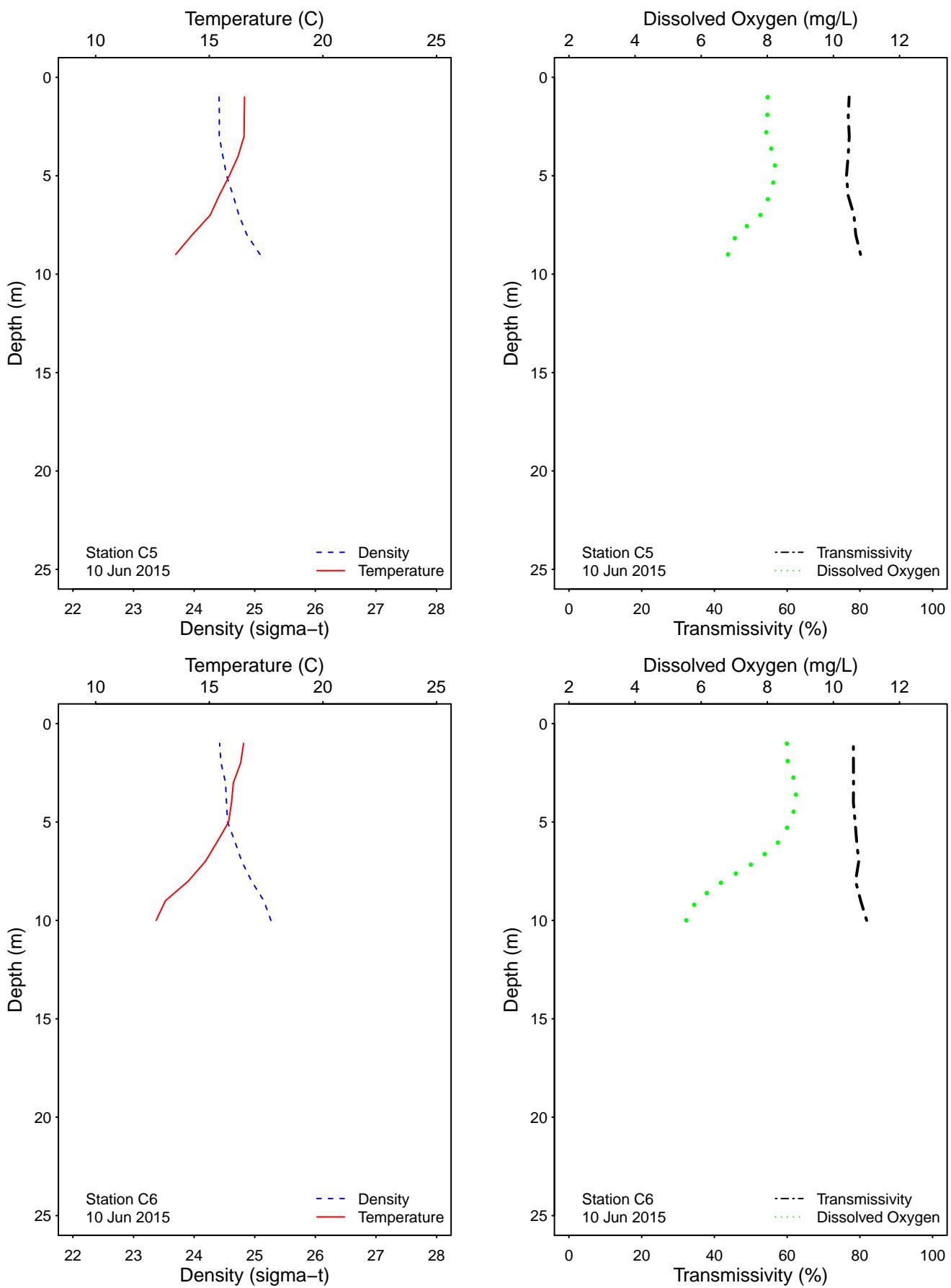


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

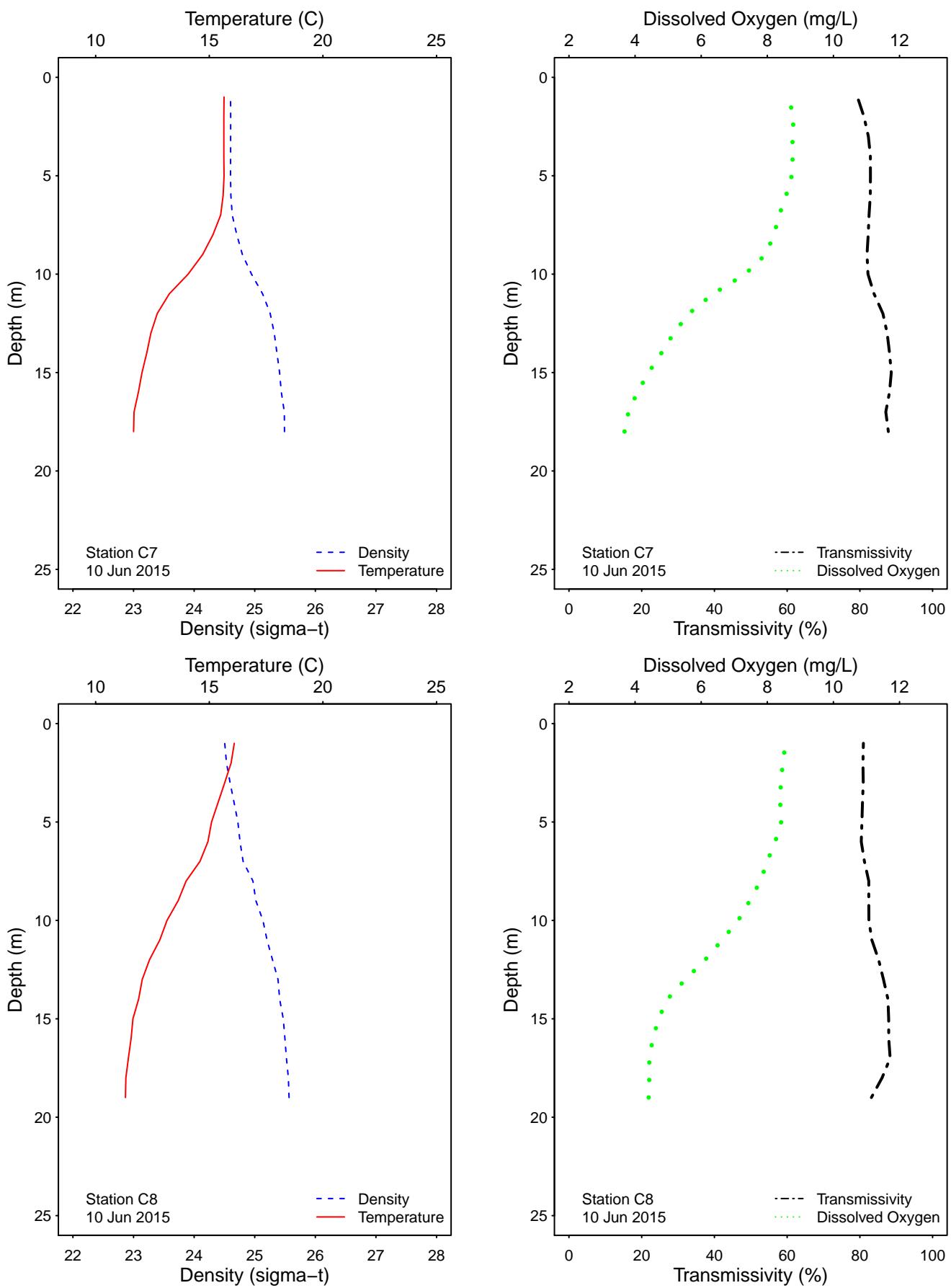


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

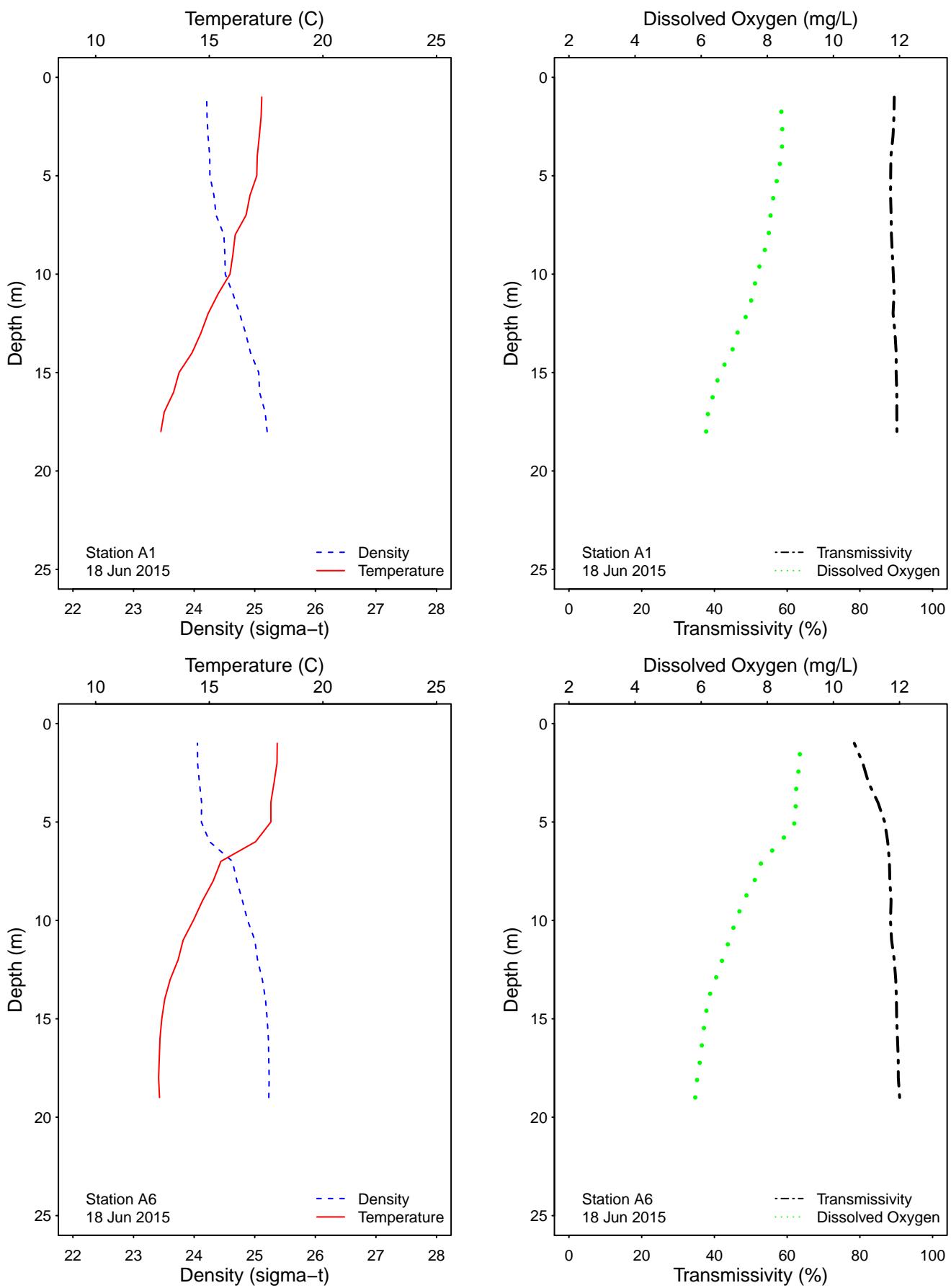


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

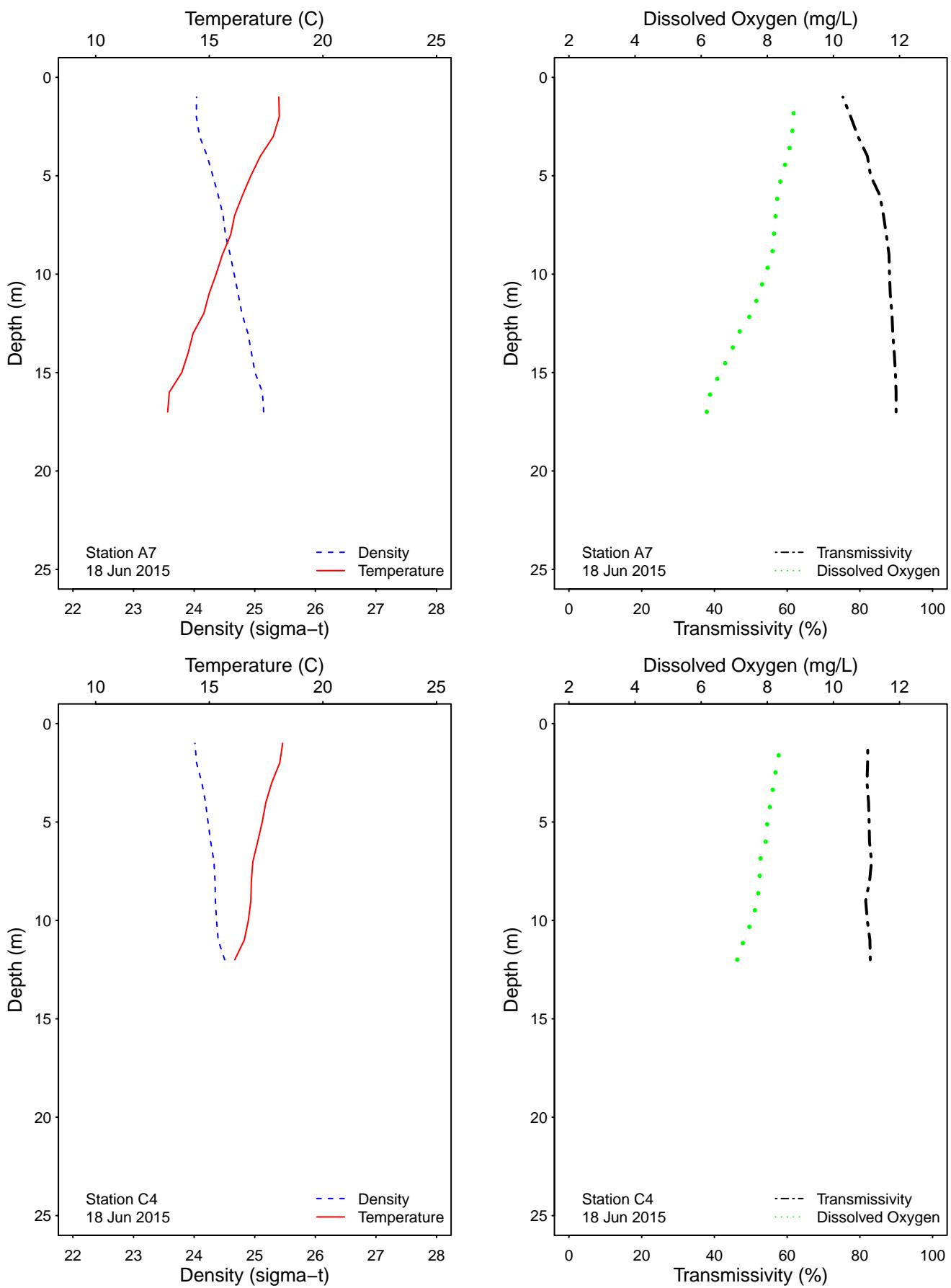


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

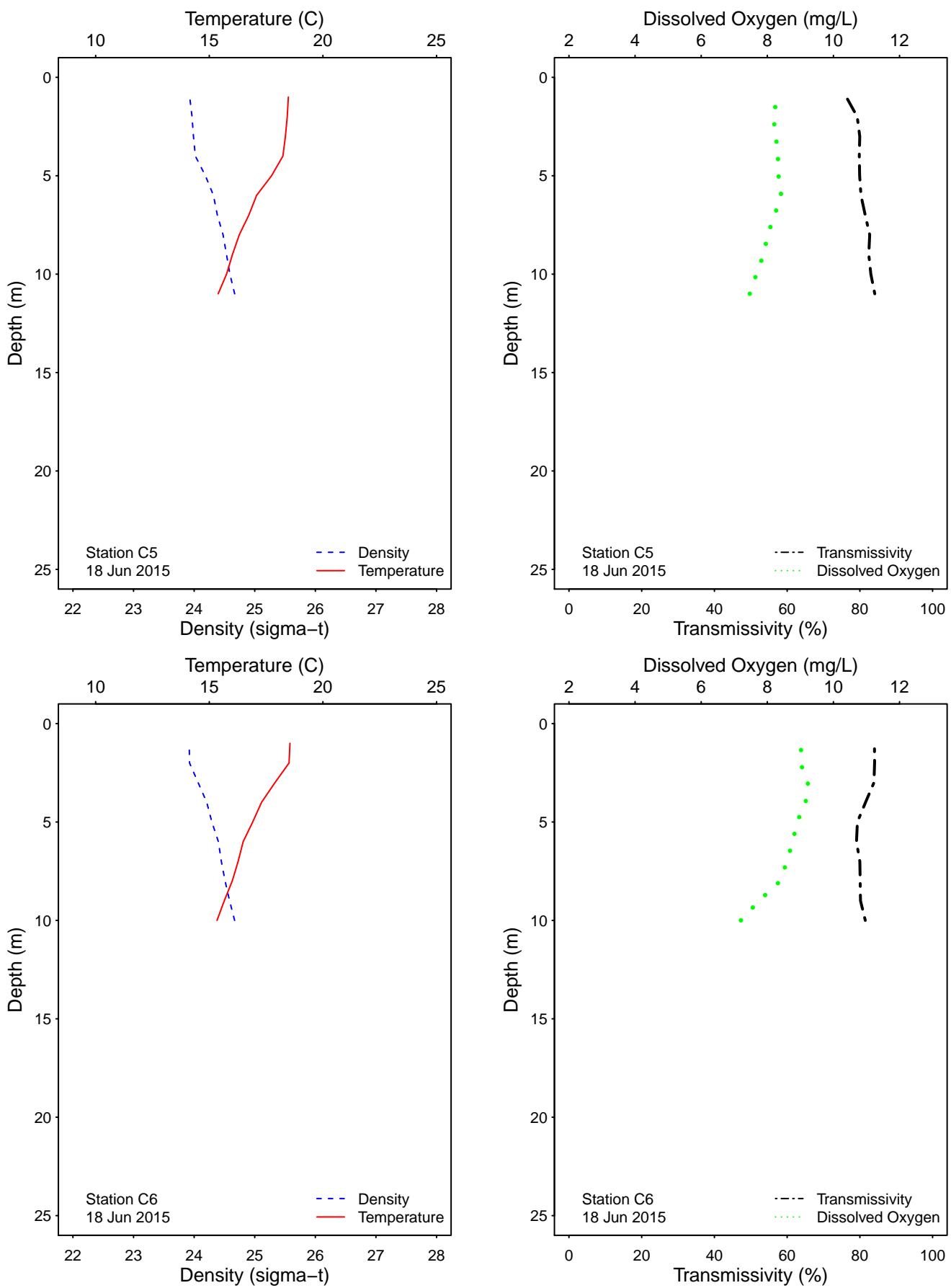


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

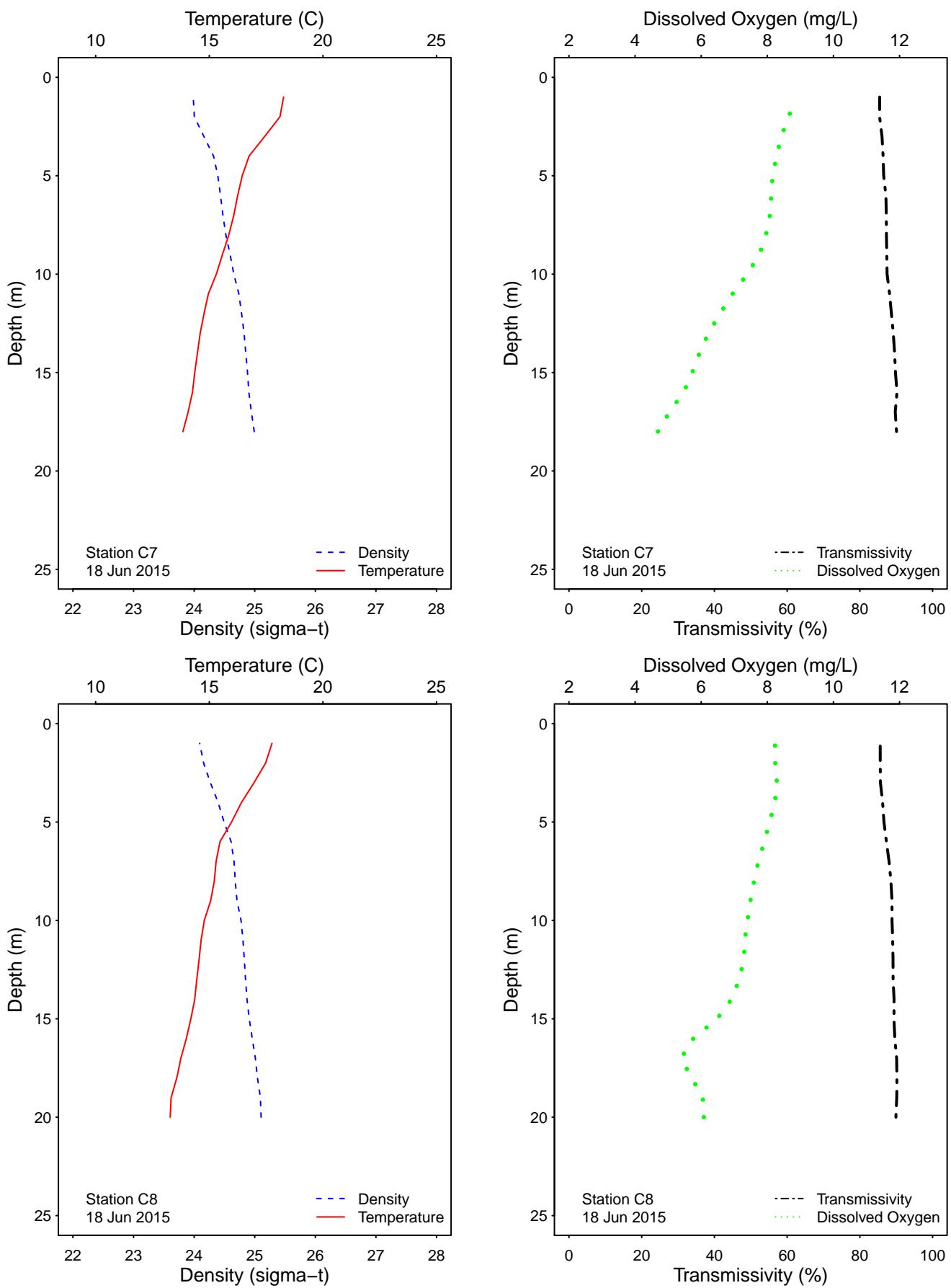


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

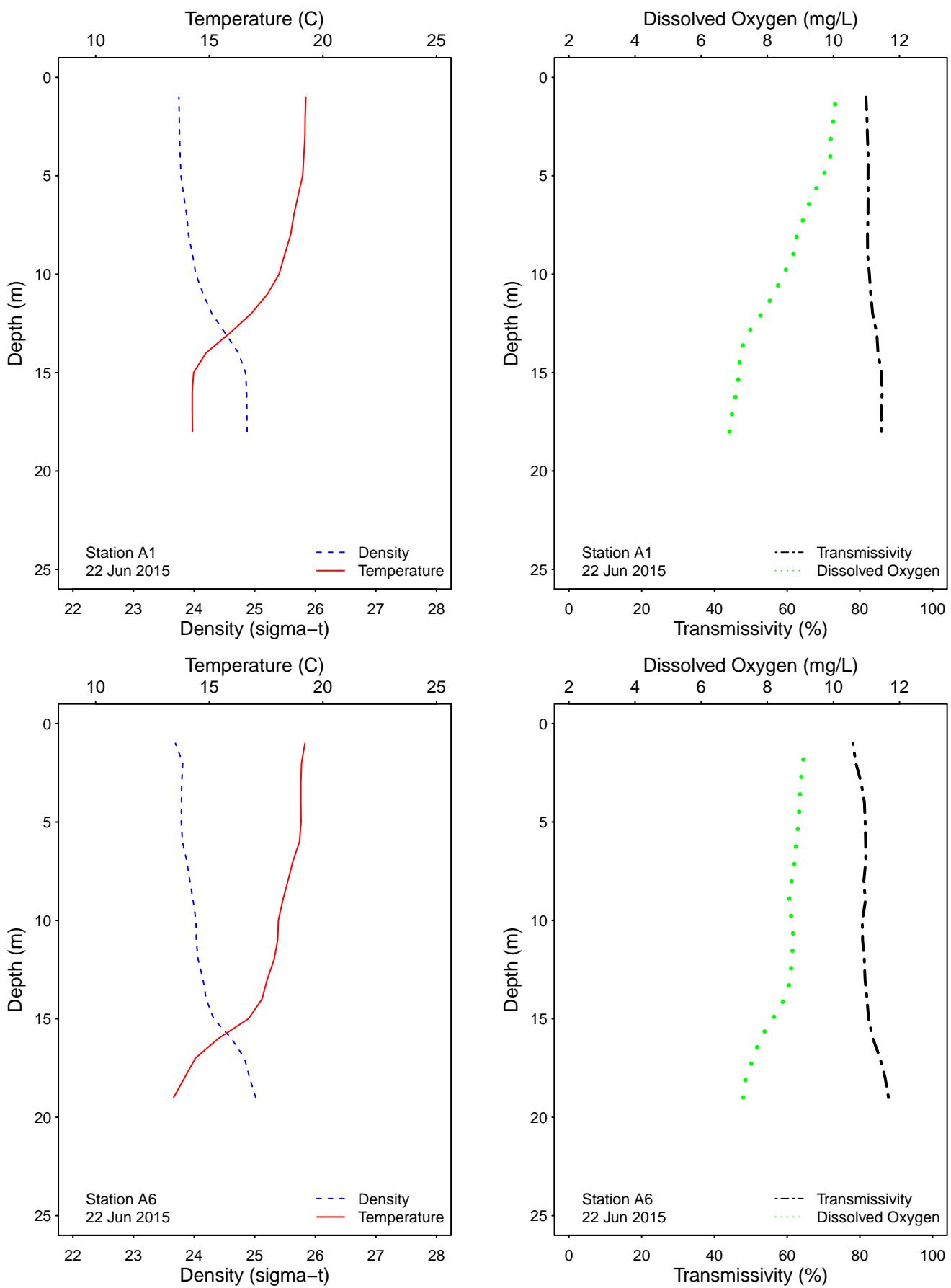


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

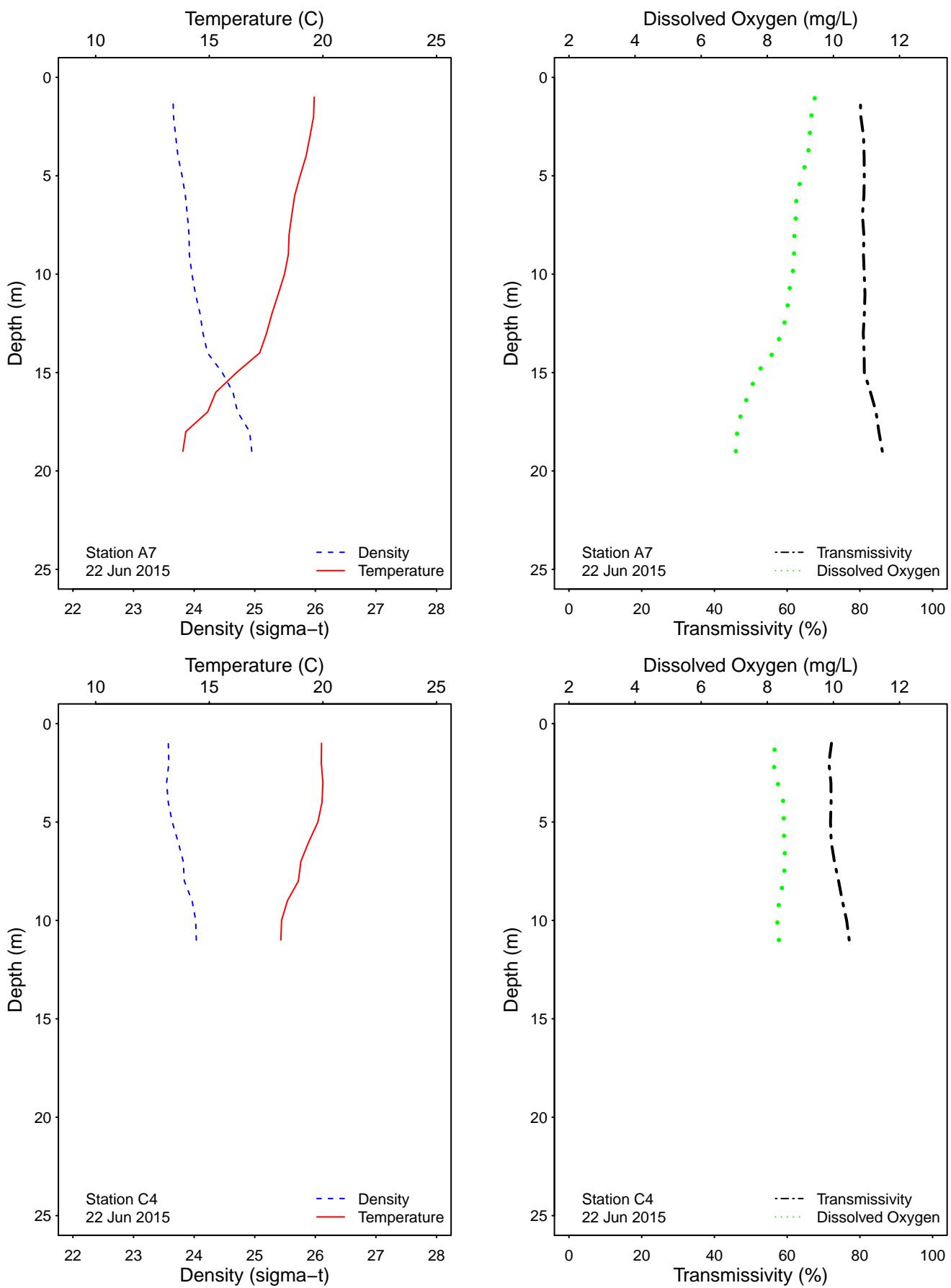


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

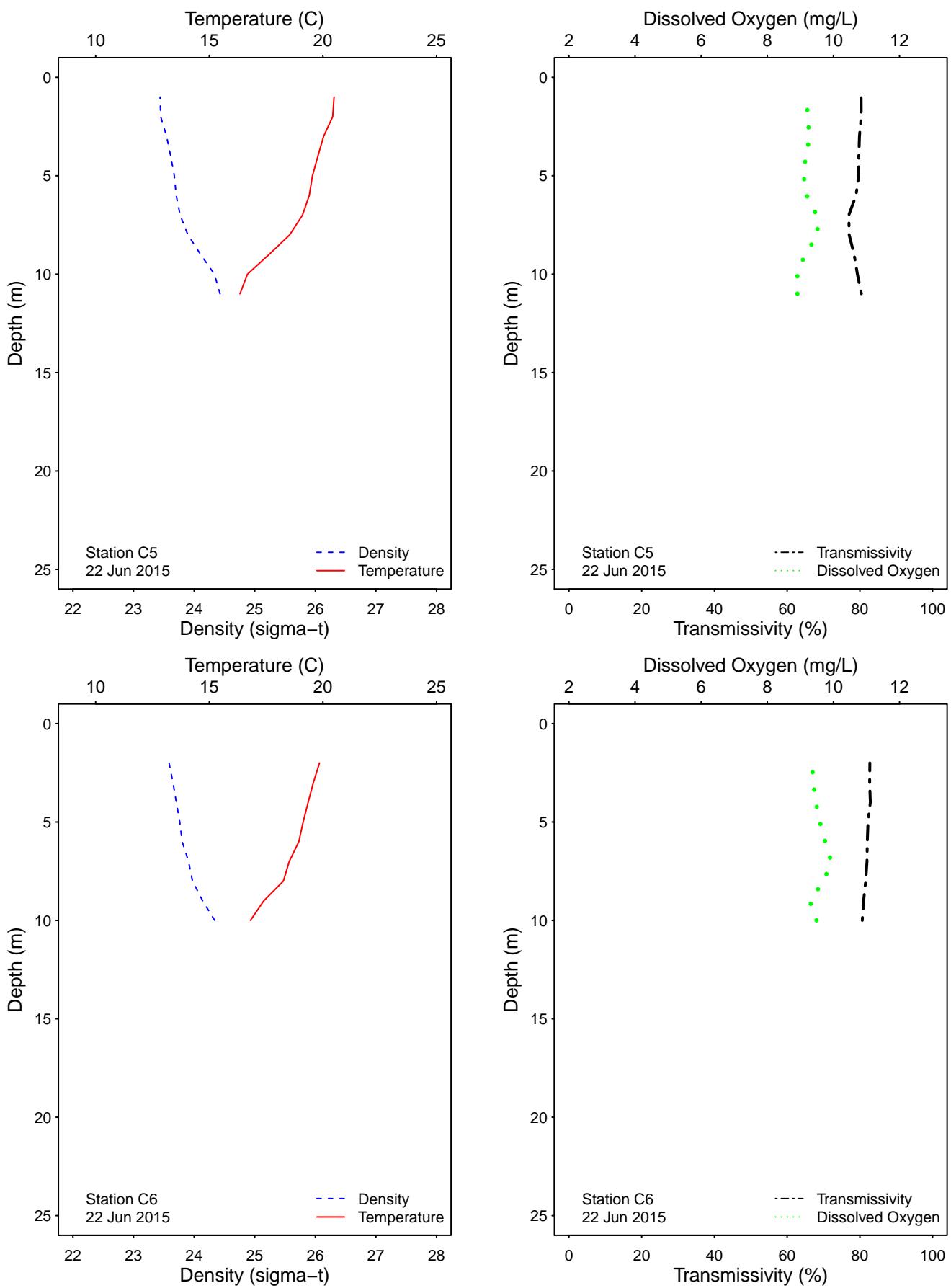


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

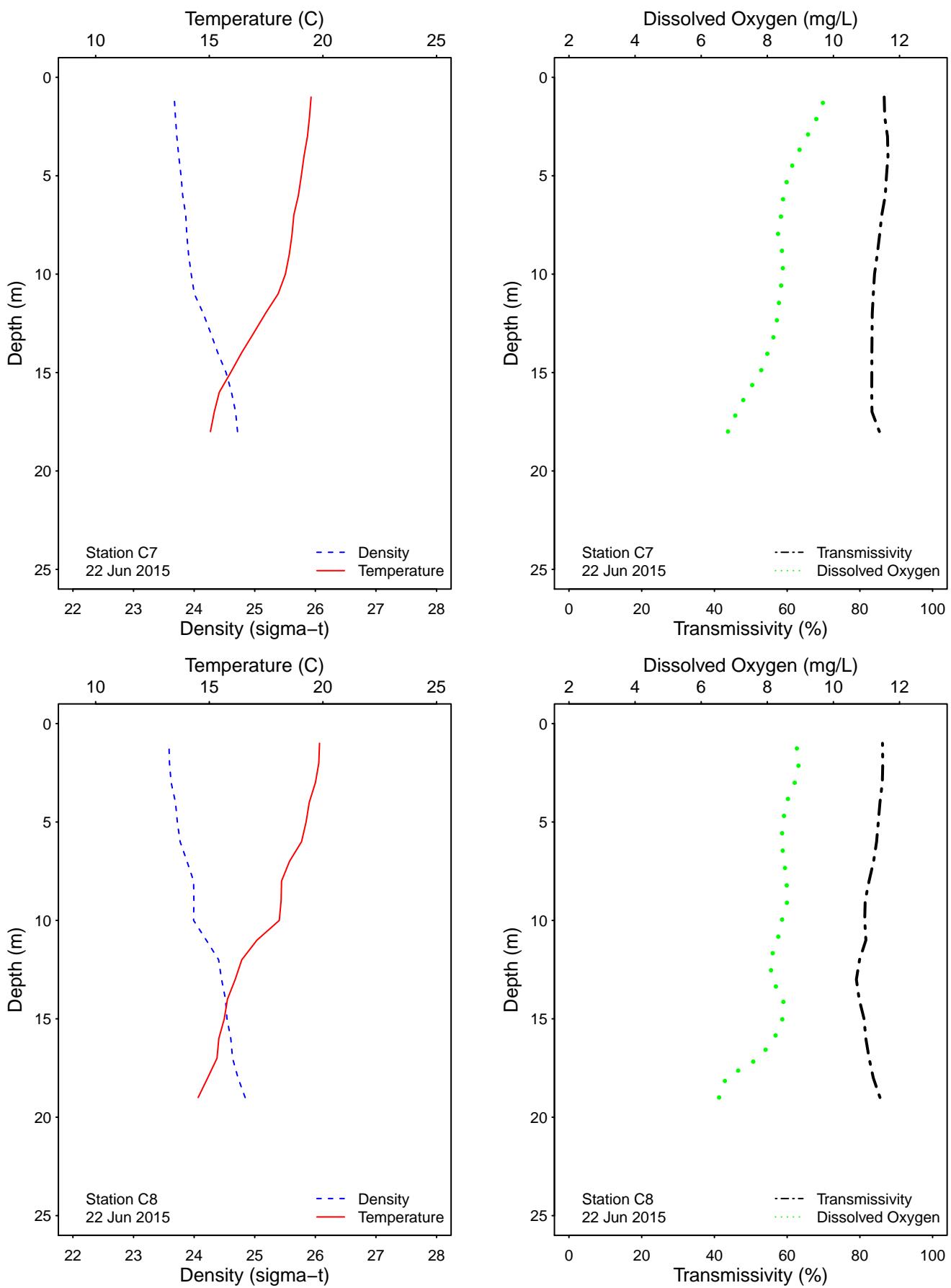


Figure 3.1: Graphics of CTD profile data from the PLOO kelp stations for each sample date.

APPENDIX A

Quality Assurance

Table A.1

Summary of bacteriological quality assurance field and laboratory 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	06 Jun 2015	18	LMA	LAB DUPLICATE	<2	<2	<2
A7	10 Jun 2015	18	SR	LAB DUPLICATE	<20	<2	<2
A7	18 Jun 2015	18	SR	LAB DUPLICATE	18e	<2	<2
A7	22 Jun 2015	18	JT	LAB DUPLICATE	8e	2e	<2
C7	06 Jun 2015	18	LMA	LAB DUPLICATE	2e	<2	<2
C7	10 Jun 2015	18	SR	LAB DUPLICATE	<20	<2	<2
C7	18 Jun 2015	18	SR	LAB DUPLICATE	2e	<2	<2
C7	22 Jun 2015	18	JT	LAB DUPLICATE	4e	<2	<2
C8	06 Jun 2015	12	LMA	LAB DUPLICATE	<2	<2	<2
C8	10 Jun 2015	12	SR	LAB DUPLICATE	<2	<2	<2
C8	18 Jun 2015	12	SR	LAB DUPLICATE	<2	<2	<2
C8	22 Jun 2015	12	JT	LAB DUPLICATE	4e	<2	<2
D8	04 Jun 2015		AR	FIELD DUPLICATE	20e	<2	6e
D8	04 Jun 2015		JT	LAB DUPLICATE	<20	2e	4e
D8	10 Jun 2015		SR	FIELD DUPLICATE	<20	<2	<2
D8	10 Jun 2015		SR	LAB DUPLICATE	20e	6e	<2
D8	16 Jun 2015		JT	FIELD DUPLICATE	20e	<2	24e
D8	16 Jun 2015		JT	LAB DUPLICATE	<20	6e	6e
D8	22 Jun 2015		LMA	FIELD DUPLICATE	<20	6e	2e
D8	22 Jun 2015		LMA	LAB DUPLICATE	<20	10e	4e
D8	28 Jun 2015		ZV	FIELD DUPLICATE	<20	2e	2e
D8	28 Jun 2015		ZV	LAB DUPLICATE	<20	<2	2e

ns = not sampled

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