



SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

NPDES Permit No. CA0109045
SDRWQCB Order No. R9-2013-0006

OCTOBER 2019
REVISED MARCH 2021

Environmental Monitoring and Technical Services
2392 Kincaid Road • Mail Station 45A • San Diego, CA 92101
Tel (619) 758-2300 Fax (619) 758-2309



April 1, 2021

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 revised October 2019 Monthly Receiving Waters Monitoring Report for the South Bay Ocean Outfall, South Bay Water Reclamation Plant as required per Order No. R9-2013-0006 as amended by Order Nos. R9-2014-0071 and R9-2017-0023, NPDES Permit No. CA0109045. This revised report is being submitted to address data integrity issues identified to the Board in the letter dated October 22, 2020, subject: "San Diego NPDES Shoreline Sampling Program Report."

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the South Bay outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan. These data are also presented in the monthly report submitted by the International Boundary and Water Commission, U.S. Section for discharge from the South Bay International Wastewater Treatment Plant (Order No. R9-2014-0009 as amended by Order Nos. R9-2014-0094, R9-2017-0024, R9-2019-0012, NPDES Permit No. CA0108928).

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

Sincerely,



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

PV/rk

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

INTRODUCTION

Monthly reports of water quality and ocean conditions from Playa Blanco, Mexico to Coronado, USA are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2013-0006 as amended by Order Nos. R9-2014-0071 and R9-2017-0023, NPDES Permit No. CA0109045, for the South Bay Water Reclamation Plant (SBWRP), South Bay Ocean Outfall (SBOO). 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 SBWRP are presented in separate reports.

MATERIALS AND METHODS

Shore Stations

Water quality monitoring was conducted at 11 stations located along the shore from Playa Blanca, Mexico to Coronado, USA (see station locations map). Three sites are located south of the international border (stations S0, S2, S3), while eight sites are in the United States (stations S4–S6 and S8–S12).

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

Kelp Bed Stations

Seven kelp bed and other nearshore stations (I19, I24, I25, I26, I32, I39, I40; collectively referred to as "kelp" stations herein) were sampled four times during the month according to NPDES permit specifications. Six stations (I19, I24, I25, I26, I32, I40) are located along the 9-m depth contour, and one (I39) is located along the 18-m depth contour. Three of these stations, I25, I26, and I39, were selected based on their proximity to suitable substrates for the Imperial Beach kelp bed (see station locations map); however, this kelp bed has been historically transient and variable in terms of size and density. Thus, these three stations are only occasionally located within an area where kelp is actually found.

The seven kelp stations are sampled on a weekly basis during the month. Routine monitoring at each kelp site consists of collecting seawater samples at three discrete depths for bacteriological analyses (total coliforms, fecal coliforms, and *Enterococcus* bacteria) and generating water column profiles of various physical/chemical parameters, including water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, and transmissivity. Visual observations of weather and water conditions are also recorded at all stations.

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of the various physical/chemical parameters were taken using a CTD. The CTD collected these physical/chemical data at a rate ≥ 4 scans per second. The data were then internally averaged using the CTD proprietary software, Seasoft, to create water column profiles equivalent

to one reading per meter. Additionally, CTD profile data for each water sample depth are presented with the bacteriological data.

Offshore Stations

Quarterly offshore water quality sampling is typically conducted over three days during February, May, August, and November for a total of 40 stations during each month (see station locations map). These offshore stations (I1–I40) are arranged in a grid surrounding the discharge site, and are generally located along the 9, 19, 28, 38, and 55-m depth contours. The seven offshore sites designated as kelp bed stations (described above) are included as part of the monthly offshore water quality sampling, however the data from these seven stations are reported within the kelp bed station section of the report with the other four days of kelp bed water quality sampling. Monitoring at all sites included measurements of various physical/chemical parameters, including water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, and chromomorphic dissolved organic matter (CDOM). Visual observations of weather and water conditions were also recorded at all stations. Seawater samples for the analysis of indicator bacteria, suspended solids, and oil and grease concentrations were collected at 28 of the stations.

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

Bacteriological Reporting and Quality Assurance

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

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

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

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

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

Single Sample Maximums:

- (1) Total coliform density shall not exceed 10,000 CFU/100 mL;
- (2) Fecal coliform density shall not exceed 400 CFU/100 mL;
- (3) *Enterococcus* density shall not exceed 104 CFU/100 mL;
- (4) Total coliform density shall not exceed 1,000 CFU/100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

Compliance with the seven Ocean Plan standards are summarized below for the stations located in USA waters. In contrast, no such compliance summaries are presented for the three shore stations located in Mexican waters south of the International Border (i.e., S0, S2, and S3) since this region is not subject to the Ocean Plan standards.

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, 1987²) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2019 Quality Assurance Report, which will be completed in March 2020.

SUMMARY OF RESULTS

➤ Shoreline Water Quality Sampling

- Due to site access restrictions in Mexico, the South Bay shoreline sampling is typically carried out on the same day each week (i.e., Tuesday) to coordinate sampling between the Mexican and USA based stations. Seawater samples at the three shore stations located south of the USA/Mexico border (i.e., stations S0, S2 and S3) are presently collected by the Comisión Internacional de Límites y Aguas (CILA) and transported to the USIBWC for subsequent delivery to the City's Marine Microbiology Lab, while samples from the eight stations located in USA waters are sampled by City staff.
- The 11 shore stations (S0, S2, S3, S4, S5, S6, S8, S9, S10, S11, S12) were sampled on October 1, 8, 15, 22, and 29. Subsequent to initial reporting, samples collected at stations S4, S6, S10, and S11 on October 8, and at stations S4 and S10 on October 29, were determined to be problematic. The results from these samples have been removed from this report.
- During October, one of eight shore stations located north of the border was out of compliance with California Ocean Plan (Ocean Plan) water contact standards as follows:

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

- The single sample maximum (SSM) standard for *Enterococcus* bacteria was exceeded at station S9 on October 15.
 - Per permit requirements, a resample was collected in response to this SSM exceedance (see Table 2.8 for details).
- Although the Ocean Plan standards do not apply to this station, bacteria densities exceeded one or more benchmark levels (i.e., total coliforms >10,000 CFU/100mL; fecal coliforms >400 CFU/100 mL; *Enterococcus* >104 CFU/100 mL; total >1000 CFU/100 mL & F:T ratio >0.1) in the seawater samples collected at station S0 on October 1, 8, and 15.
- Historical analyses of Ocean Plan compliance rates for the South Bay outfall shore and kelp monitoring stations, combined with the results of satellite imagery data, suggest that outflows from the Tijuana River and Los Buenos Creek, as well as surface runoff during or after rain events (storms), are likely to be the cause of impacted water quality along the shore and in near shore recreational waters in the South Bay region. See the City of San Diego's most recent *Biennial Receiving Waters Monitoring and Assessment Report for the Point Loma and South Bay Ocean Outfalls* for details (<https://www.sandiego.gov/public-utilities/sustainability/ocean-monitoring/reports>).
- Notable observations included a sewage-like odor on one or more days at S5, S6, and S9.

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled on October 9, 15, 22, and 29.
- During October, each of the kelp bed stations was in compliance with various Ocean Plan water contact standards.
- Water column temperatures ranged from 13.63 to 19.71°C. The difference between surface and bottom waters ranged from 0.16 to 4.97°C.
- Concentrations of Chlorophyll *a* ranged from 0.68 to 6.68 µg/L.

➤ **Offshore Water Quality Sampling**

- Quarterly offshore water quality sampling was not conducted during October. The next quarterly sampling is scheduled for November 2019.



TABLES AND FIGURES

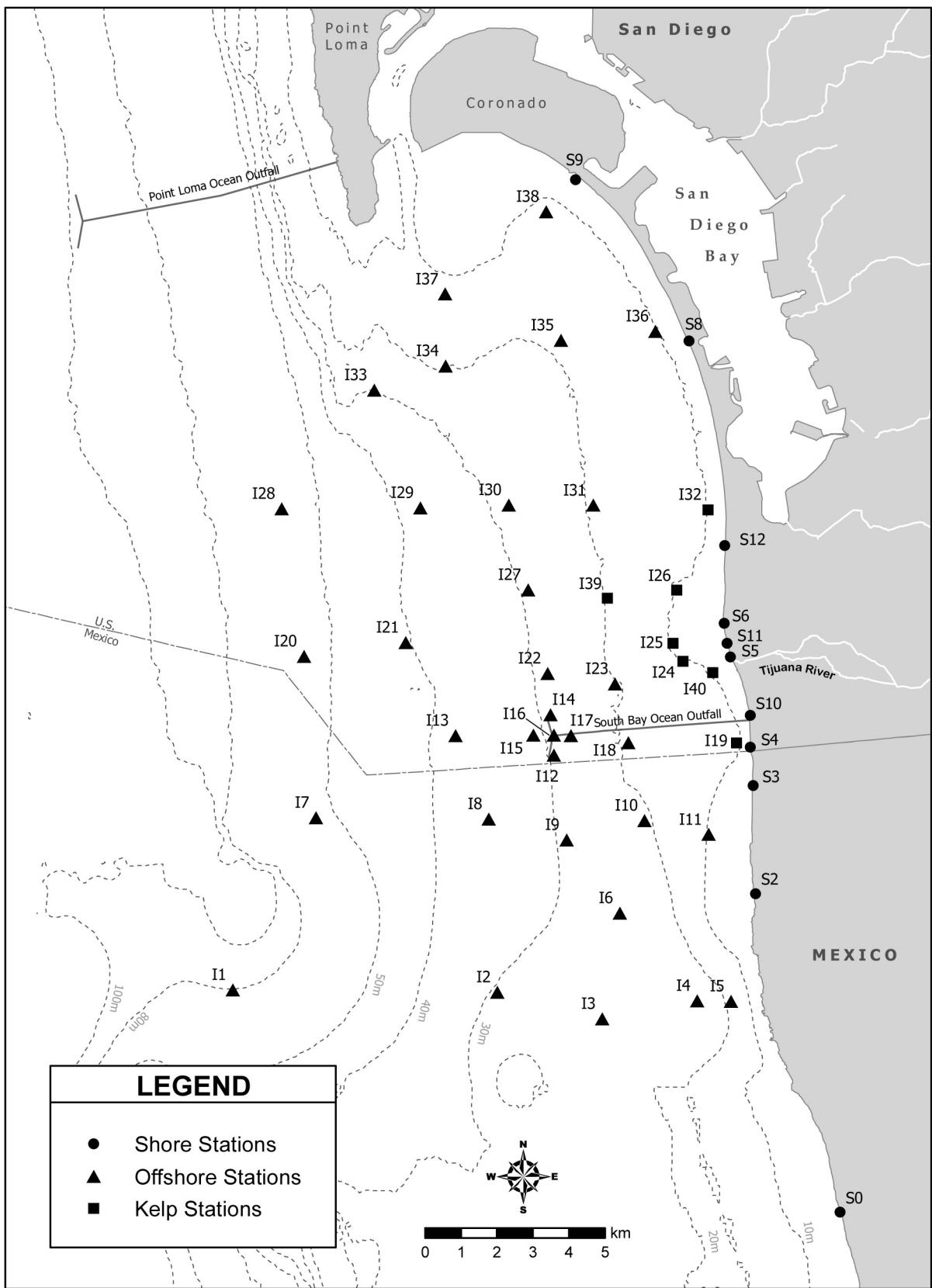


Figure 1.1 Station Map

Shore Stations

Table 2.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the SBOO 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	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	20	34	43	8	36	20	29	36
02 Oct 2019	20	34	43	8	36	20	29	36
03 Oct 2019	20	39	63	5	43	20	35	42
04 Oct 2019	20	39	63	5	43	20	35	42
05 Oct 2019	20	39	63	5	43	20	35	42
06 Oct 2019	20	39	63	5	43	20	35	42
07 Oct 2019	20	39	63	5	43	20	35	42
08 Oct 2019	20	54	63	13	63	20	35	36
09 Oct 2019	20	54	63	13	63	20	35	36
10 Oct 2019	20	36	63	20	93	20	35	36
11 Oct 2019	20	36	63	20	93	20	35	36
12 Oct 2019	20	36	63	20	93	20	35	36
13 Oct 2019	20	36	63	20	93	20	35	36
14 Oct 2019	20	36	63	20	93	20	35	36
15 Oct 2019	20	20	43	36	95	20	29	50
16 Oct 2019	20	20	43	36	95	20	29	50
17 Oct 2019	20	20	43	74	20	20	36	
18 Oct 2019	20	20	20	43	74	20	20	36
19 Oct 2019	20	20	20	43	74	20	20	36
20 Oct 2019	20	20	20	43	74	20	20	36
21 Oct 2019	20	20	20	43	74	20	20	36
22 Oct 2019	11	13	9	20	42	16	9	23
23 Oct 2019	11	13	9	20	42	16	9	23
24 Oct 2019	9	11	9	20	42	16	9	24
25 Oct 2019	9	11	9	20	42	16	9	24
26 Oct 2019	9	11	9	20	42	16	9	24
27 Oct 2019	9	11	9	20	42	16	9	24
28 Oct 2019	9	11	9	20	42	16	9	24
29 Oct 2019	9	13	11	20	26	16	11	26
30 Oct 2019	9	13	11	20	26	16	11	26
31 Oct 2019	6	11	9	36	28	14	9	28

* Geometric mean calculated using n<5

Table 2.2

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the SBOO 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	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	2	4	5	2	5	3	3	4
02 Oct 2019	2	4	5	2	5	3	3	4
03 Oct 2019	2	4	9	2	6	3	3	4
04 Oct 2019	2	4	9	2	6	3	3	4
05 Oct 2019	2	4	9	2	6	3	3	4
06 Oct 2019	2	4	9	2	6	3	3	4
07 Oct 2019	2	4	9	2	6	3	3	4
08 Oct 2019	2	4	9	2	5	3	3	3
09 Oct 2019	2	4	9	2	5	3	3	3
10 Oct 2019	3	2	9	2	6	3	3	3
11 Oct 2019	3	2	9	2	6	3	3	3
12 Oct 2019	3	2	9	2	6	3	3	3
13 Oct 2019	3	2	9	2	6	3	3	3
14 Oct 2019	3	2	9	2	6	3	3	3
15 Oct 2019	2	2	5	2	9	4	3	3
16 Oct 2019	2	2	5	2	9	4	3	3
17 Oct 2019	2	2	3	2	5	3	2	3
18 Oct 2019	2	2	3	2	5	3	2	3
19 Oct 2019	2	2	3	2	5	3	2	3
20 Oct 2019	2	2	3	2	5	3	2	3
21 Oct 2019	2	2	3	2	5	3	2	3
22 Oct 2019	2	2	3	2	4	3	2	3
23 Oct 2019	2	2	3	2	4	3	2	3
24 Oct 2019	2	2	3	2	4	3	2	3
25 Oct 2019	2	2	3	2	4	3	2	3
26 Oct 2019	2	2	3	2	4	3	2	3
27 Oct 2019	2	2	3	2	4	3	2	3
28 Oct 2019	2	2	3	2	4	3	2	3
29 Oct 2019	2	2	2	2	3	3	3	3
30 Oct 2019	2	2	2	2	3	3	3	3
31 Oct 2019	2	2	2	2	4	3	3	3

* Geometric mean calculated using n<5

Table 2.3

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the SBOO 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	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	2	5	3	2	6	3	4	4
02 Oct 2019	2	5	3	2	6	3	4	4
03 Oct 2019	2	4	2	2	5	3	2	3
04 Oct 2019	2	4	2	2	5	3	2	3
05 Oct 2019	2	4	2	2	5	3	2	3
06 Oct 2019	2	4	2	2	5	3	2	3
07 Oct 2019	2	4	2	2	5	3	2	3
08 Oct 2019	2	4	2	2	5	3	2	3
09 Oct 2019	2	4	2	2	5	3	2	3
10 Oct 2019	2	3	2	2	7	3	2	3
11 Oct 2019	2	3	2	2	7	3	2	3
12 Oct 2019	2	3	2	2	7	3	2	3
13 Oct 2019	2	3	2	2	7	3	2	3
14 Oct 2019	2	3	2	2	7	3	2	3
15 Oct 2019	3	3	2	2	20	4	2	3
16 Oct 2019	3	3	2	2	20	4	2	3
17 Oct 2019	3	3	2	2	13	4	2	3
18 Oct 2019	3	3	2	2	13	4	2	3
19 Oct 2019	3	3	2	2	13	4	2	3
20 Oct 2019	3	3	2	2	13	4	2	3
21 Oct 2019	3	3	2	2	13	4	2	3
22 Oct 2019	3	3	2	2	11	3	2	3
23 Oct 2019	3	3	2	2	11	3	2	3
24 Oct 2019	3	3	2	2	11	3	2	2
25 Oct 2019	3	3	2	2	11	3	2	2
26 Oct 2019	3	3	2	2	11	3	2	2
27 Oct 2019	3	3	2	2	11	3	2	2
28 Oct 2019	3	3	2	2	11	3	2	2
29 Oct 2019	3	4	3	2	9	3	3	3
30 Oct 2019	3	4	3	2	9	3	3	3
31 Oct 2019	3	4	3	2	11	4	3	3

* Geometric mean calculated using n<5

Table 2.4

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2019	ns	IC	ns	IC	IC	ns	ns	IC
15 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2019	ns	IC	IC	IC	IC	ns	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.5

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2019	ns	IC	ns	IC	IC	ns	ns	IC
15 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2019	ns	IC	IC	IC	IC	ns	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.6

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2019	ns	IC	ns	IC	IC	ns	ns	IC
15 Oct 2019	IC	IC	IC	IC	E	IC	IC	IC
17 Oct 2019	ns	ns	ns	ns	IC	ns	ns	ns
22 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2019	ns	IC	IC	IC	IC	ns	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.7

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
08 Oct 2019	ns	IC	ns	IC	IC	ns	ns	IC
15 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
22 Oct 2019	IC	IC	IC	IC	IC	IC	IC	IC
29 Oct 2019	ns	IC	IC	IC	IC	ns	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.8

Summary of water quality parameters at the SBOO 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
S0	01 Oct 2019	1040	3600e	280e	280e	0.08
S0	08 Oct 2019	1050	13000	3200e	5400	0.25
S0	15 Oct 2019	1030	9800	1000e	900	0.10
S0	22 Oct 2019	1025	42	2e	26e	0.05
S0	29 Oct 2019	1045	40e	<2	12e	0.05
S2	01 Oct 2019	1130	<20	2e	<2	0.10
S2	08 Oct 2019	1150	6e	<2	4e	0.33
S2	15 Oct 2019	1145	20e	14e	16e	0.70
S2	22 Oct 2019	1125	4e	<2	<2	0.50
S2	29 Oct 2019	1220	40e	<2	22e	0.05
S3	01 Oct 2019	1210	220e	12e	2e	0.05
S3	08 Oct 2019	1242	2e	<2	<2	1.00
S3	15 Oct 2019	1110	<200	28e	56	0.14
S3	22 Oct 2019	1152	18e	6e	2e	0.33
S3	29 Oct 2019	1135	60e	16e	60	0.27
S4	01 Oct 2019	851	<20	2e	<2	0.10
S4	08 Oct 2019		ns	ns	ns	ns
S4	15 Oct 2019	923	20e	<2	6e	0.10
S4	22 Oct 2019	956	<2	<2	<2	1.00
S4	29 Oct 2019		ns	ns	ns	ns
S5	01 Oct 2019	736	20e	2e	4e	0.10
S5	08 Oct 2019	908	<200	<2	6e	0.01
S5	15 Oct 2019	742	<2	<2	<2	1.00
S5	22 Oct 2019	1036	<2	<2	<2	1.00
S5	29 Oct 2019	840	20e	<2	10e	0.10
S6	01 Oct 2019	751	20e	4e	<2	0.20
S6	08 Oct 2019		ns	ns	ns	ns
S6	15 Oct 2019	758	<20	2e	<2	0.10
S6	22 Oct 2019	1053	<2	<2	<2	1.00
S6	29 Oct 2019	854	<20	<2	8e	0.10
S8	01 Oct 2019	942	<2	<2	<2	1.00
S8	08 Oct 2019	843	<200	<2	<2	0.01
S8	15 Oct 2019	1008	<200	<2	<2	0.01
S8	22 Oct 2019	758	<2	<2	<2	1.00
S8	29 Oct 2019	801	<20	<2	<2	0.10
S9	01 Oct 2019	1016	<20	<2	<2	0.10
S9	08 Oct 2019	826	<200	<2	4e	0.01
S9	15 Oct 2019	1031	100e	32e	500	0.32
S9	17 Oct 2019	942	ns	ns	8e	ns
S9	22 Oct 2019	733	8e	2e	6e	0.25
S9	29 Oct 2019	741	4e	2e	2e	0.50
S10	01 Oct 2019	837	<20	<2	2e	0.10
S10	08 Oct 2019		ns	ns	ns	ns
S10	15 Oct 2019	907	<20	4e	10e	0.20
S10	22 Oct 2019	936	10e	<2	<2	0.20
S10	29 Oct 2019		ns	ns	ns	ns

Station	Date	Time	Total	Fecal	Enteric	F:T
S11	01 Oct 2019	747	<20	2e	2e	0.10
S11	08 Oct 2019		ns	ns	ns	ns
S11	15 Oct 2019	752	20e	<2	2e	0.10
S11	22 Oct 2019	1045	<2	<2	<2	1.00
S11	29 Oct 2019	849	20e	8e	10e	0.40
S12	01 Oct 2019	719	<20	<2	2e	0.10
S12	08 Oct 2019	853	<20	2e	4e	0.10
S12	15 Oct 2019	822	<200	8e	<2	0.04
S12	22 Oct 2019	825	4e	2e	2e	0.50
S12	29 Oct 2019	828	40e	<2	4e	0.05

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
S9	17 Oct 2019			Resample

Table 2.9

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

Station	Date	Parameter	Value
S0	01 Oct 2019	Arrive Time	1040
S0	01 Oct 2019	Weather	Sunny
S0	01 Oct 2019	Wind Speed (kts)	1.8
S0	01 Oct 2019	Wind Dir	SW
S0	01 Oct 2019	Animal Life	3 Dogs; 20 Seagulls
S0	01 Oct 2019	Floatables	None
S0	01 Oct 2019	Water Color	Green
S0	01 Oct 2019	Current Direction	N
S0	01 Oct 2019	Water Temp (C)	16
S0	01 Oct 2019	Wave Height Low (ft)	2
S0	01 Oct 2019	High Tide (ft)	5.9
S0	01 Oct 2019	High Tide Time	1117
S0	01 Oct 2019	Low Tide (ft)	0.9
S0	01 Oct 2019	Low Tide Time	509
S0	01 Oct 2019	Comments	Water turbid; 0.5L/s water flowing from storm drain
S0	08 Oct 2019	Arrive Time	1050
S0	08 Oct 2019	Weather	Cloudy
S0	08 Oct 2019	Wind Speed (kts)	0.8
S0	08 Oct 2019	Wind Dir	W
S0	08 Oct 2019	Animal Life	5 Shorebirds; 5 Dogs
S0	08 Oct 2019	Floatables	None
S0	08 Oct 2019	Water Color	Green
S0	08 Oct 2019	Current Direction	N
S0	08 Oct 2019	Water Temp (C)	17
S0	08 Oct 2019	Wave Height Low (ft)	3
S0	08 Oct 2019	High Tide (ft)	4.4
S0	08 Oct 2019	High Tide Time	737
S0	08 Oct 2019	Low Tide (ft)	2.2
S0	08 Oct 2019	Low Tide Time	1309
S0	08 Oct 2019	Comments	Kelp; Algae; 5 Persons; Water turbid; 0.5L/s water flowing from storm drain
S0	15 Oct 2019	Arrive Time	1030
S0	15 Oct 2019	Weather	Sunny
S0	15 Oct 2019	Wind Speed (kts)	6.1
S0	15 Oct 2019	Wind Dir	NE
S0	15 Oct 2019	Animal Life	>10 Shorebirds; 2 Dogs
S0	15 Oct 2019	Floatables	None
S0	15 Oct 2019	Water Color	Green
S0	15 Oct 2019	Current Direction	N
S0	15 Oct 2019	Water Temp (C)	18
S0	15 Oct 2019	Wave Height Low (ft)	3
S0	15 Oct 2019	High Tide (ft)	5.5
S0	15 Oct 2019	High Tide Time	1007
S0	15 Oct 2019	Low Tide (ft)	1.2
S0	15 Oct 2019	Low Tide Time	404
S0	15 Oct 2019	Comments	Kelp; Algae; 2 Persons; Water clear; 0.5L/s water flowing from storm drain
S0	22 Oct 2019	Arrive Time	1025
S0	22 Oct 2019	Weather	Sunny
S0	22 Oct 2019	Wind Speed (kts)	3.2
S0	22 Oct 2019	Wind Dir	W
S0	22 Oct 2019	Animal Life	5 Shorebirds
S0	22 Oct 2019	Floatables	None

Station	Date	Parameter	Value
S0	22 Oct 2019	Water Color	Green
S0	22 Oct 2019	Current Direction	N
S0	22 Oct 2019	Water Temp (C)	17
S0	22 Oct 2019	Wave Height Low (ft)	4
S0	22 Oct 2019	High Tide (ft)	4
S0	22 Oct 2019	High Tide Time	614
S0	22 Oct 2019	Low Tide (ft)	2.8
S0	22 Oct 2019	Low Tide Time	1114
S0	22 Oct 2019	Comments	Kelp; Algae; 5 Persons; Water turbid; 0.5L/s water flowing from storm drain
S0	29 Oct 2019	Arrive Time	1045
S0	29 Oct 2019	Weather	Sunny
S0	29 Oct 2019	Wind Speed (kts)	2.5
S0	29 Oct 2019	Wind Dir	NE
S0	29 Oct 2019	Animal Life	7 Shorebirds; 2 Dogs
S0	29 Oct 2019	Floatables	None
S0	29 Oct 2019	Water Color	Green
S0	29 Oct 2019	Current Direction	N
S0	29 Oct 2019	Water Temp (C)	15
S0	29 Oct 2019	Wave Height Low (ft)	3
S0	29 Oct 2019	High Tide (ft)	6.5
S0	29 Oct 2019	High Tide Time	1004
S0	29 Oct 2019	Low Tide (ft)	-0.7
S0	29 Oct 2019	Low Tide Time	1700
S0	29 Oct 2019	Comments	Kelp; Algae; 4 Persons; Water clear; 0.5L/s water flowing from strom drain
S2	01 Oct 2019	Arrive Time	1130
S2	01 Oct 2019	Weather	Sunny
S2	01 Oct 2019	Wind Speed (kts)	2.8
S2	01 Oct 2019	Wind Dir	SW
S2	01 Oct 2019	Animal Life	2 Dogs; 20 Seagulls
S2	01 Oct 2019	Floatables	None
S2	01 Oct 2019	Water Color	Green
S2	01 Oct 2019	Current Direction	N
S2	01 Oct 2019	Water Temp (C)	16
S2	01 Oct 2019	Wave Height Low (ft)	2
S2	01 Oct 2019	High Tide (ft)	5.9
S2	01 Oct 2019	High Tide Time	1117
S2	01 Oct 2019	Low Tide (ft)	0.9
S2	01 Oct 2019	Low Tide Time	509
S2	01 Oct 2019	Comments	Kelp; Algae; Water turbid; No flow from storm drain
S2	08 Oct 2019	Arrive Time	1150
S2	08 Oct 2019	Weather	Sunny
S2	08 Oct 2019	Wind Speed (kts)	0.9
S2	08 Oct 2019	Wind Dir	W
S2	08 Oct 2019	Animal Life	>20 Shorebirds
S2	08 Oct 2019	Floatables	None
S2	08 Oct 2019	Water Color	Green
S2	08 Oct 2019	Current Direction	N
S2	08 Oct 2019	Water Temp (C)	17
S2	08 Oct 2019	Wave Height Low (ft)	3
S2	08 Oct 2019	High Tide (ft)	4.4
S2	08 Oct 2019	High Tide Time	737
S2	08 Oct 2019	Low Tide (ft)	2.2
S2	08 Oct 2019	Low Tide Time	1309
S2	08 Oct 2019	Comments	Kelp; Algae; 15 Persons; Water turbid; No flow from storm drain

Station	Date	Parameter	Value
S2	15 Oct 2019	Arrive Time	1145
S2	15 Oct 2019	Weather	Sunny
S2	15 Oct 2019	Wind Speed (kts)	6.1
S2	15 Oct 2019	Wind Dir	NE
S2	15 Oct 2019	Animal Life	>10 Shorebirds; 2 Dogs
S2	15 Oct 2019	Floatables	None
S2	15 Oct 2019	Water Color	Green
S2	15 Oct 2019	Current Direction	N
S2	15 Oct 2019	Water Temp (C)	18
S2	15 Oct 2019	Wave Height Low (ft)	3
S2	15 Oct 2019	High Tide (ft)	5.5
S2	15 Oct 2019	High Tide Time	1007
S2	15 Oct 2019	Low Tide (ft)	0.3
S2	15 Oct 2019	Low Tide Time	1650
S2	15 Oct 2019	Comments	Kelp; Algae; >5 Persons; Water clear; No flow from storm drain
S2	22 Oct 2019	Arrive Time	1125
S2	22 Oct 2019	Weather	Sunny
S2	22 Oct 2019	Wind Speed (kts)	2.8
S2	22 Oct 2019	Wind Dir	W
S2	22 Oct 2019	Animal Life	15 Shorebirds; 5 Dogs
S2	22 Oct 2019	Floatables	None
S2	22 Oct 2019	Water Color	Green
S2	22 Oct 2019	Current Direction	N
S2	22 Oct 2019	Water Temp (C)	17
S2	22 Oct 2019	Wave Height Low (ft)	4
S2	22 Oct 2019	High Tide (ft)	4
S2	22 Oct 2019	High Tide Time	614
S2	22 Oct 2019	Low Tide (ft)	2.8
S2	22 Oct 2019	Low Tide Time	1114
S2	22 Oct 2019	Comments	Kelp; Algae; 15 Persons; Water turbid; No flow from storm drain
S2	29 Oct 2019	Arrive Time	1220
S2	29 Oct 2019	Weather	Sunny
S2	29 Oct 2019	Wind Speed (kts)	2.3
S2	29 Oct 2019	Wind Dir	NE
S2	29 Oct 2019	Animal Life	7 Shorebirds; 2 Dogs
S2	29 Oct 2019	Floatables	None
S2	29 Oct 2019	Water Color	Green
S2	29 Oct 2019	Current Direction	N
S2	29 Oct 2019	Water Temp (C)	15
S2	29 Oct 2019	Wave Height Low (ft)	3
S2	29 Oct 2019	High Tide (ft)	6.5
S2	29 Oct 2019	High Tide Time	1004
S2	29 Oct 2019	Low Tide (ft)	-0.7
S2	29 Oct 2019	Low Tide Time	1700
S2	29 Oct 2019	Comments	Kelp; Algae; 1 Person; Water clear; No flow from storm drain
S3	01 Oct 2019	Arrive Time	1210
S3	01 Oct 2019	Weather	Sunny
S3	01 Oct 2019	Wind Speed (kts)	3.6
S3	01 Oct 2019	Wind Dir	SW
S3	01 Oct 2019	Animal Life	5 Dogs; >20 Seagulls
S3	01 Oct 2019	Floatables	None
S3	01 Oct 2019	Water Color	Green
S3	01 Oct 2019	Current Direction	N
S3	01 Oct 2019	Water Temp (C)	16
S3	01 Oct 2019	Wave Height Low (ft)	2
S3	01 Oct 2019	High Tide (ft)	5.9

Station	Date	Parameter	Value
S3	01 Oct 2019	High Tide Time	1117
S3	01 Oct 2019	Low Tide (ft)	0
S3	01 Oct 2019	Low Tide Time	1805
S3	01 Oct 2019	Comments	Kelp; Algae; Water turbid; 0.5L/s water flowing from storm drain
S3	08 Oct 2019	Arrive Time	1242
S3	08 Oct 2019	Weather	Sunny
S3	08 Oct 2019	Wind Speed (kts)	0.8
S3	08 Oct 2019	Wind Dir	W
S3	08 Oct 2019	Animal Life	15 Shorebirds
S3	08 Oct 2019	Floatables	None
S3	08 Oct 2019	Water Color	Green
S3	08 Oct 2019	Current Direction	N
S3	08 Oct 2019	Water Temp (C)	17
S3	08 Oct 2019	Wave Height Low (ft)	3
S3	08 Oct 2019	High Tide (ft)	4.4
S3	08 Oct 2019	High Tide Time	737
S3	08 Oct 2019	Low Tide (ft)	2.2
S3	08 Oct 2019	Low Tide Time	1309
S3	08 Oct 2019	Comments	Kelp; Algae; 5 Persons; Water turbid; 0.5L/s water flowing from storm drain
S3	15 Oct 2019	Arrive Time	1110
S3	15 Oct 2019	Weather	Sunny
S3	15 Oct 2019	Wind Speed (kts)	6.3
S3	15 Oct 2019	Wind Dir	NE
S3	15 Oct 2019	Animal Life	>10 Shorebirds; 2 Dogs
S3	15 Oct 2019	Floatables	None
S3	15 Oct 2019	Water Color	Green
S3	15 Oct 2019	Current Direction	N
S3	15 Oct 2019	Water Temp (C)	18
S3	15 Oct 2019	Wave Height Low (ft)	3
S3	15 Oct 2019	High Tide (ft)	5.5
S3	15 Oct 2019	High Tide Time	1007
S3	15 Oct 2019	Low Tide (ft)	0.3
S3	15 Oct 2019	Low Tide Time	1650
S3	15 Oct 2019	Comments	Kelp; Algae; >5 Persons; Water clear; 0.5L/s water flowing from storm drain
S3	22 Oct 2019	Arrive Time	1152
S3	22 Oct 2019	Weather	Sunny
S3	22 Oct 2019	Wind Speed (kts)	2.1
S3	22 Oct 2019	Wind Dir	W
S3	22 Oct 2019	Animal Life	15 Shorebirds
S3	22 Oct 2019	Floatables	None
S3	22 Oct 2019	Water Color	Green
S3	22 Oct 2019	Current Direction	N
S3	22 Oct 2019	Water Temp (C)	17
S3	22 Oct 2019	Wave Height Low (ft)	4
S3	22 Oct 2019	High Tide (ft)	4.8
S3	22 Oct 2019	High Tide Time	1650
S3	22 Oct 2019	Low Tide (ft)	2.8
S3	22 Oct 2019	Low Tide Time	1114
S3	22 Oct 2019	Comments	Kelp; Algae; 15 Persons; 3 Surfers; Water turbid; 0.5L/s water flowing from storm drain
S3	29 Oct 2019	Arrive Time	1135
S3	29 Oct 2019	Weather	Sunny
S3	29 Oct 2019	Wind Speed (kts)	2.6
S3	29 Oct 2019	Wind Dir	NE

Station	Date	Parameter	Value
S3	29 Oct 2019	Animal Life	7 Shorebirds; 1 Dog
	29 Oct 2019	Floatables	None
	29 Oct 2019	Water Color	Green
	29 Oct 2019	Current Direction	N
	29 Oct 2019	Water Temp (C)	15
	29 Oct 2019	Wave Height Low (ft)	3
	29 Oct 2019	High Tide (ft)	6.5
	29 Oct 2019	High Tide Time	1004
	29 Oct 2019	Low Tide (ft)	-0.7
	29 Oct 2019	Low Tide Time	1700
	29 Oct 2019	Comments	Kelp; Algae; 2 Persons; Water clear; No flow from storm drain
S4	01 Oct 2019	Arrive Time	851
	01 Oct 2019	Weather	Sunny
	01 Oct 2019	Wind Speed (kts)	3.3
	01 Oct 2019	Wind Dir	NE
	01 Oct 2019	Animal Life	60 Godwits; 35 Seagulls
	01 Oct 2019	Floatables	Foam; Film
	01 Oct 2019	Water Color	Green
	01 Oct 2019	Current Direction	N
	01 Oct 2019	Water Temp (C)	20.2
	01 Oct 2019	Wave Height Low (ft)	3
	01 Oct 2019	High Tide (ft)	5.9
	01 Oct 2019	High Tide Time	1117
S4	01 Oct 2019	Low Tide (ft)	0.9
	01 Oct 2019	Low Tide Time	509
	01 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
	15 Oct 2019	Arrive Time	923
	15 Oct 2019	Weather	Sunny
	15 Oct 2019	Wind Speed (kts)	2.1
	15 Oct 2019	Wind Dir	W
	15 Oct 2019	Animal Life	100 Godwits; 100 Seagulls
	15 Oct 2019	Floatables	Foam; Film
	15 Oct 2019	Water Color	Green
	15 Oct 2019	Current Direction	S
	15 Oct 2019	Water Temp (C)	18.1
S4	15 Oct 2019	Wave Height Low (ft)	3
	15 Oct 2019	High Tide (ft)	5.5
	15 Oct 2019	High Tide Time	1007
	15 Oct 2019	Low Tide (ft)	1.2
	15 Oct 2019	Low Tide Time	404
	15 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
	22 Oct 2019	Arrive Time	956
	22 Oct 2019	Weather	Sunny
	22 Oct 2019	Wind Speed (kts)	6
	22 Oct 2019	Wind Dir	W
	22 Oct 2019	Animal Life	3 Cormorants; 150 Godwits; 1 Sand Piper; 30 Seagulls; 1 Albatross
	22 Oct 2019	Floatables	Foam; Film
S4	22 Oct 2019	Water Color	Green
	22 Oct 2019	Current Direction	S
	22 Oct 2019	Water Temp (C)	22.4
	22 Oct 2019	Wave Height Low (ft)	3
	22 Oct 2019	High Tide (ft)	4
	22 Oct 2019	High Tide Time	614
	22 Oct 2019	Low Tide (ft)	2.8
	22 Oct 2019	Low Tide Time	1114
S4	22 Oct 2019	Comments	Kelp; Seagrass; Water clear

Station	Date	Parameter	Value
S5	01 Oct 2019	Arrive Time	736
S5	01 Oct 2019	Weather	Sunny
S5	01 Oct 2019	Wind Speed (kts)	5
S5	01 Oct 2019	Wind Dir	W
S5	01 Oct 2019	Animal Life	None
S5	01 Oct 2019	Floatables	Foam; Film
S5	01 Oct 2019	Water Color	Brown
S5	01 Oct 2019	Current Direction	N
S5	01 Oct 2019	Water Temp (C)	18.4
S5	01 Oct 2019	Wave Height Low (ft)	4
S5	01 Oct 2019	High Tide (ft)	5.9
S5	01 Oct 2019	High Tide Time	1117
S5	01 Oct 2019	Low Tide (ft)	0.9
S5	01 Oct 2019	Low Tide Time	509
S5	01 Oct 2019	Comments	Kelp; Seagrass; Debris; Sewage-like odor; Water clear
S5	08 Oct 2019	Arrive Time	908
S5	08 Oct 2019	Weather	Overcast
S5	08 Oct 2019	Wind Speed (kts)	31
S5	08 Oct 2019	Wind Dir	W
S5	08 Oct 2019	Animal Life	None
S5	08 Oct 2019	Floatables	None
S5	08 Oct 2019	Water Color	Green
S5	08 Oct 2019	Current Direction	N
S5	08 Oct 2019	Water Temp (C)	19.1
S5	08 Oct 2019	Wave Height Low (ft)	4
S5	08 Oct 2019	High Tide (ft)	4.4
S5	08 Oct 2019	High Tide Time	737
S5	08 Oct 2019	Low Tide (ft)	2.2
S5	08 Oct 2019	Low Tide Time	1309
S5	08 Oct 2019	Comments	Kelp; Seagrass; 4 Persons; Water clear
S5	15 Oct 2019	Arrive Time	742
S5	15 Oct 2019	Weather	Sunny
S5	15 Oct 2019	Wind Speed (kts)	4.8
S5	15 Oct 2019	Wind Dir	W
S5	15 Oct 2019	Animal Life	8 Seagulls
S5	15 Oct 2019	Floatables	Foam; Film
S5	15 Oct 2019	Water Color	Green
S5	15 Oct 2019	Current Direction	S
S5	15 Oct 2019	Water Temp (C)	17.1
S5	15 Oct 2019	Wave Height Low (ft)	2
S5	15 Oct 2019	High Tide (ft)	5.5
S5	15 Oct 2019	High Tide Time	1007
S5	15 Oct 2019	Low Tide (ft)	1.2
S5	15 Oct 2019	Low Tide Time	404
S5	15 Oct 2019	Comments	Kelp; Seagrass; Debris; Sewage-like odor; Water clear
S5	22 Oct 2019	Arrive Time	1036
S5	22 Oct 2019	Weather	Sunny
S5	22 Oct 2019	Wind Speed (kts)	6.6
S5	22 Oct 2019	Wind Dir	W
S5	22 Oct 2019	Animal Life	9 Cormorants; 12 Grebes; 1 Pelican; 3 Seagulls
S5	22 Oct 2019	Floatables	Film
S5	22 Oct 2019	Water Color	Green
S5	22 Oct 2019	Current Direction	S
S5	22 Oct 2019	Water Temp (C)	21.6
S5	22 Oct 2019	Wave Height Low (ft)	4
S5	22 Oct 2019	High Tide (ft)	4
S5	22 Oct 2019	High Tide Time	614
S5	22 Oct 2019	Low Tide (ft)	2.8

Station	Date	Parameter	Value
S5	22 Oct 2019	Low Tide Time	1114
S5	22 Oct 2019	Comments	Kelp; Seagrass; Algae; Water clear
S5	29 Oct 2019	Arrive Time	840
S5	29 Oct 2019	Weather	Sunny
S5	29 Oct 2019	Wind Speed (kts)	0.2
S5	29 Oct 2019	Wind Dir	E
S5	29 Oct 2019	Animal Life	None
S5	29 Oct 2019	Floatables	None
S5	29 Oct 2019	Water Color	Green
S5	29 Oct 2019	Current Direction	N
S5	29 Oct 2019	Water Temp (C)	15.4
S5	29 Oct 2019	Wave Height Low (ft)	3
S5	29 Oct 2019	High Tide (ft)	6.5
S5	29 Oct 2019	High Tide Time	1004
S5	29 Oct 2019	Low Tide (ft)	1
S5	29 Oct 2019	Low Tide Time	357
S5	29 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
S6	01 Oct 2019	Arrive Time	751
S6	01 Oct 2019	Weather	Sunny
S6	01 Oct 2019	Wind Speed (kts)	2.3
S6	01 Oct 2019	Wind Dir	W
S6	01 Oct 2019	Animal Life	1 Dog
S6	01 Oct 2019	Floatables	Foam; Film
S6	01 Oct 2019	Water Color	Brown
S6	01 Oct 2019	Current Direction	N
S6	01 Oct 2019	Water Temp (C)	17.2
S6	01 Oct 2019	Wave Height Low (ft)	4
S6	01 Oct 2019	High Tide (ft)	5.9
S6	01 Oct 2019	High Tide Time	1117
S6	01 Oct 2019	Low Tide (ft)	0.9
S6	01 Oct 2019	Low Tide Time	509
S6	01 Oct 2019	Comments	Kelp; Seagrass; Debris; Sewage-like odor; 4 Persons; 18 Surfers; Water clear
S6	15 Oct 2019	Arrive Time	758
S6	15 Oct 2019	Weather	Sunny
S6	15 Oct 2019	Wind Speed (kts)	2.3
S6	15 Oct 2019	Wind Dir	W
S6	15 Oct 2019	Animal Life	2 Pelicans
S6	15 Oct 2019	Floatables	Foam; Film
S6	15 Oct 2019	Water Color	Green
S6	15 Oct 2019	Current Direction	N
S6	15 Oct 2019	Water Temp (C)	18.9
S6	15 Oct 2019	Wave Height Low (ft)	3
S6	15 Oct 2019	High Tide (ft)	5.5
S6	15 Oct 2019	High Tide Time	1007
S6	15 Oct 2019	Low Tide (ft)	1.2
S6	15 Oct 2019	Low Tide Time	404
S6	15 Oct 2019	Comments	Kelp; Seagrass; Debris; Sewage-like odor; 2 Surfers; Water clear
S6	22 Oct 2019	Arrive Time	1053
S6	22 Oct 2019	Weather	Sunny
S6	22 Oct 2019	Wind Speed (kts)	3.8
S6	22 Oct 2019	Wind Dir	SE
S6	22 Oct 2019	Animal Life	1 Cormorant
S6	22 Oct 2019	Floatables	Foam; Film
S6	22 Oct 2019	Water Color	Green
S6	22 Oct 2019	Current Direction	S

Station	Date	Parameter	Value
S6	22 Oct 2019	Water Temp (C)	21.6
S6	22 Oct 2019	Wave Height Low (ft)	3
S6	22 Oct 2019	High Tide (ft)	4
S6	22 Oct 2019	High Tide Time	614
S6	22 Oct 2019	Low Tide (ft)	2.8
S6	22 Oct 2019	Low Tide Time	1114
S6	22 Oct 2019	Comments	5 Persons; 4 Surfers; Water clear
S6	29 Oct 2019	Arrive Time	854
S6	29 Oct 2019	Weather	Sunny
S6	29 Oct 2019	Wind Speed (kts)	4.2
S6	29 Oct 2019	Wind Dir	E
S6	29 Oct 2019	Animal Life	None
S6	29 Oct 2019	Floatables	None
S6	29 Oct 2019	Water Color	Green
S6	29 Oct 2019	Current Direction	N
S6	29 Oct 2019	Water Temp (C)	16.3
S6	29 Oct 2019	Wave Height Low (ft)	6
S6	29 Oct 2019	High Tide (ft)	6.5
S6	29 Oct 2019	High Tide Time	1004
S6	29 Oct 2019	Low Tide (ft)	1
S6	29 Oct 2019	Low Tide Time	357
S6	29 Oct 2019	Comments	Kelp; Seagrass; 1 Person; Water clear
S8	01 Oct 2019	Arrive Time	942
S8	01 Oct 2019	Weather	Sunny
S8	01 Oct 2019	Wind Speed (kts)	2.5
S8	01 Oct 2019	Wind Dir	E
S8	01 Oct 2019	Animal Life	100 Grebes; 3 Seagulls
S8	01 Oct 2019	Floatables	Foam; Film
S8	01 Oct 2019	Water Color	Green
S8	01 Oct 2019	Current Direction	N
S8	01 Oct 2019	Water Temp (C)	21.3
S8	01 Oct 2019	Wave Height Low (ft)	3
S8	01 Oct 2019	High Tide (ft)	5.9
S8	01 Oct 2019	High Tide Time	1117
S8	01 Oct 2019	Low Tide (ft)	0.9
S8	01 Oct 2019	Low Tide Time	509
S8	01 Oct 2019	Comments	Kelp; Seagrass; 35 Persons; 2 Fishermen; Water clear
S8	08 Oct 2019	Arrive Time	843
S8	08 Oct 2019	Weather	Overcast
S8	08 Oct 2019	Wind Speed (kts)	1.4
S8	08 Oct 2019	Wind Dir	W
S8	08 Oct 2019	Animal Life	None
S8	08 Oct 2019	Floatables	None
S8	08 Oct 2019	Water Color	Green
S8	08 Oct 2019	Current Direction	N
S8	08 Oct 2019	Water Temp (C)	19.2
S8	08 Oct 2019	Wave Height Low (ft)	3
S8	08 Oct 2019	High Tide (ft)	4.4
S8	08 Oct 2019	High Tide Time	737
S8	08 Oct 2019	Low Tide (ft)	2.2
S8	08 Oct 2019	Low Tide Time	1309
S8	08 Oct 2019	Comments	Kelp; Seagrass; 7 Persons; Water clear
S8	15 Oct 2019	Arrive Time	1008
S8	15 Oct 2019	Weather	Sunny
S8	15 Oct 2019	Wind Speed (kts)	3.4
S8	15 Oct 2019	Wind Dir	E
S8	15 Oct 2019	Animal Life	3 Seagulls

Station	Date	Parameter	Value
S8	15 Oct 2019	Floatables	Foam; Film
S8	15 Oct 2019	Water Color	Green
S8	15 Oct 2019	Current Direction	S
S8	15 Oct 2019	Water Temp (C)	20
S8	15 Oct 2019	Wave Height Low (ft)	3
S8	15 Oct 2019	High Tide (ft)	5.5
S8	15 Oct 2019	High Tide Time	1007
S8	15 Oct 2019	Low Tide (ft)	1.2
S8	15 Oct 2019	Low Tide Time	404
S8	15 Oct 2019	Comments	Kelp; Seagrass; Debris; 9 Persons; 1 Fisherman; Water clear
S8	22 Oct 2019	Arrive Time	758
S8	22 Oct 2019	Weather	Sunny
S8	22 Oct 2019	Wind Speed (kts)	5
S8	22 Oct 2019	Wind Dir	W
S8	22 Oct 2019	Animal Life	3 Grebes; 4 Seagulls
S8	22 Oct 2019	Floatables	Foam; Film
S8	22 Oct 2019	Water Color	Green
S8	22 Oct 2019	Current Direction	N
S8	22 Oct 2019	Water Temp (C)	19.1
S8	22 Oct 2019	Wave Height Low (ft)	3
S8	22 Oct 2019	High Tide (ft)	4
S8	22 Oct 2019	High Tide Time	614
S8	22 Oct 2019	Low Tide (ft)	2.8
S8	22 Oct 2019	Low Tide Time	1114
S8	22 Oct 2019	Comments	Kelp; Seagrass; 3 Persons; 1 Surfer; Water clear
S8	29 Oct 2019	Arrive Time	801
S8	29 Oct 2019	Weather	Sunny
S8	29 Oct 2019	Wind Speed (kts)	3.5
S8	29 Oct 2019	Wind Dir	SE
S8	29 Oct 2019	Animal Life	15 Plovers
S8	29 Oct 2019	Floatables	None
S8	29 Oct 2019	Water Color	Green
S8	29 Oct 2019	Current Direction	N
S8	29 Oct 2019	Water Temp (C)	15.6
S8	29 Oct 2019	Wave Height Low (ft)	3
S8	29 Oct 2019	High Tide (ft)	6.5
S8	29 Oct 2019	High Tide Time	1004
S8	29 Oct 2019	Low Tide (ft)	1
S8	29 Oct 2019	Low Tide Time	357
S8	29 Oct 2019	Comments	Kelp; Seagrass; Water clear
S9	01 Oct 2019	Arrive Time	1016
S9	01 Oct 2019	Weather	Sunny
S9	01 Oct 2019	Wind Speed (kts)	5.6
S9	01 Oct 2019	Wind Dir	NE
S9	01 Oct 2019	Animal Life	None
S9	01 Oct 2019	Floatables	Foam; Film
S9	01 Oct 2019	Water Color	Green
S9	01 Oct 2019	Current Direction	N
S9	01 Oct 2019	Water Temp (C)	21.8
S9	01 Oct 2019	Wave Height Low (ft)	2
S9	01 Oct 2019	High Tide (ft)	5.9
S9	01 Oct 2019	High Tide Time	1117
S9	01 Oct 2019	Low Tide (ft)	0.9
S9	01 Oct 2019	Low Tide Time	509
S9	01 Oct 2019	Comments	Kelp; Seagrass; 11 Persons; 14 Surfers; Water clear
S9	08 Oct 2019	Arrive Time	826
S9	08 Oct 2019	Weather	Overcast

Station	Date	Parameter	Value
S9	08 Oct 2019	Wind Speed (kts)	3
S9	08 Oct 2019	Wind Dir	W
S9	08 Oct 2019	Animal Life	None
S9	08 Oct 2019	Floatables	None
S9	08 Oct 2019	Water Color	Green
S9	08 Oct 2019	Current Direction	N
S9	08 Oct 2019	Water Temp (C)	18.9
S9	08 Oct 2019	Wave Height Low (ft)	1.3
S9	08 Oct 2019	High Tide (ft)	4.4
S9	08 Oct 2019	High Tide Time	737
S9	08 Oct 2019	Low Tide (ft)	2.2
S9	08 Oct 2019	Low Tide Time	1309
S9	08 Oct 2019	Comments	Kelp; Seagrass; Water clear
S9	15 Oct 2019	Arrive Time	1031
S9	15 Oct 2019	Weather	Sunny
S9	15 Oct 2019	Wind Speed (kts)	1.5
S9	15 Oct 2019	Wind Dir	E
S9	15 Oct 2019	Animal Life	25 Seagulls
S9	15 Oct 2019	Floatables	Foam; Film
S9	15 Oct 2019	Water Color	Green
S9	15 Oct 2019	Current Direction	S
S9	15 Oct 2019	Water Temp (C)	21
S9	15 Oct 2019	Wave Height Low (ft)	2
S9	15 Oct 2019	High Tide (ft)	5.5
S9	15 Oct 2019	High Tide Time	1007
S9	15 Oct 2019	Low Tide (ft)	1.2
S9	15 Oct 2019	Low Tide Time	404
S9	15 Oct 2019	Comments	Kelp; Seagrass; Algae; Debris; Sewage-like odor; 1 Jogger; 15 Persons; Water clear
S9	17 Oct 2019	Arrive Time	942
S9	17 Oct 2019	Weather	Sunny
S9	17 Oct 2019	Wind Speed (kts)	2.1
S9	17 Oct 2019	Wind Dir	W
S9	17 Oct 2019	Animal Life	None
S9	17 Oct 2019	Floatables	None
S9	17 Oct 2019	Water Color	Green
S9	17 Oct 2019	Current Direction	N
S9	17 Oct 2019	Water Temp (C)	19.3
S9	17 Oct 2019	Wave Height Low (ft)	2
S9	17 Oct 2019	High Tide (ft)	5.4
S9	17 Oct 2019	High Tide Time	1100
S9	17 Oct 2019	Low Tide (ft)	1.9
S9	17 Oct 2019	Low Tide Time	448
S9	17 Oct 2019	Comments	Resample; Kelp; Seagrass; Water clear
S9	22 Oct 2019	Arrive Time	733
S9	22 Oct 2019	Weather	Sunny
S9	22 Oct 2019	Wind Speed (kts)	3.6
S9	22 Oct 2019	Wind Dir	W
S9	22 Oct 2019	Animal Life	1 Cormorant; 2 Godwits; 1 Pelican; 2 Seagulls
S9	22 Oct 2019	Floatables	Foam
S9	22 Oct 2019	Water Color	Green
S9	22 Oct 2019	Current Direction	N
S9	22 Oct 2019	Water Temp (C)	18.1
S9	22 Oct 2019	Wave Height Low (ft)	2
S9	22 Oct 2019	High Tide (ft)	4
S9	22 Oct 2019	High Tide Time	614
S9	22 Oct 2019	Low Tide (ft)	2.8
S9	22 Oct 2019	Low Tide Time	1114

Station	Date	Parameter	Value
S9	22 Oct 2019	Comments	Kelp; Seagrass; 6 Persons; 4 Surfers; 2 Boats; 1 Fisherman; Water clear
S9	29 Oct 2019	Arrive Time	741
S9	29 Oct 2019	Weather	Sunny
S9	29 Oct 2019	Wind Speed (kts)	1.3
S9	29 Oct 2019	Wind Dir	W
S9	29 Oct 2019	Animal Life	None
S9	29 Oct 2019	Floatables	None
S9	29 Oct 2019	Water Color	Green
S9	29 Oct 2019	Current Direction	N
S9	29 Oct 2019	Water Temp (C)	16.2
S9	29 Oct 2019	Wave Height Low (ft)	3
S9	29 Oct 2019	High Tide (ft)	6.5
S9	29 Oct 2019	High Tide Time	1004
S9	29 Oct 2019	Low Tide (ft)	1
S9	29 Oct 2019	Low Tide Time	357
S9	29 Oct 2019	Comments	Kelp; Seagrass; 1 Person; Water clear
S10	01 Oct 2019	Arrive Time	837
S10	01 Oct 2019	Weather	Sunny
S10	01 Oct 2019	Wind Speed (kts)	5.8
S10	01 Oct 2019	Wind Dir	W
S10	01 Oct 2019	Animal Life	2 Godwits; 8 Grebes
S10	01 Oct 2019	Floatables	Foam; Film
S10	01 Oct 2019	Water Color	Colorless
S10	01 Oct 2019	Current Direction	N
S10	01 Oct 2019	Water Temp (C)	19.4
S10	01 Oct 2019	Wave Height Low (ft)	3
S10	01 Oct 2019	High Tide (ft)	5.9
S10	01 Oct 2019	High Tide Time	1117
S10	01 Oct 2019	Low Tide (ft)	0.9
S10	01 Oct 2019	Low Tide Time	509
S10	01 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
S10	15 Oct 2019	Arrive Time	907
S10	15 Oct 2019	Weather	Sunny
S10	15 Oct 2019	Wind Speed (kts)	3.8
S10	15 Oct 2019	Wind Dir	W
S10	15 Oct 2019	Animal Life	2 Godwits; 50 Seagulls
S10	15 Oct 2019	Floatables	Foam; Film
S10	15 Oct 2019	Water Color	Green
S10	15 Oct 2019	Current Direction	S
S10	15 Oct 2019	Water Temp (C)	18.7
S10	15 Oct 2019	Wave Height Low (ft)	3
S10	15 Oct 2019	High Tide (ft)	5.5
S10	15 Oct 2019	High Tide Time	1007
S10	15 Oct 2019	Low Tide (ft)	1.2
S10	15 Oct 2019	Low Tide Time	404
S10	15 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
S10	22 Oct 2019	Arrive Time	936
S10	22 Oct 2019	Weather	Sunny
S10	22 Oct 2019	Wind Speed (kts)	3.4
S10	22 Oct 2019	Wind Dir	W
S10	22 Oct 2019	Animal Life	2 Cormorants; 2 Dolphins; 1 Pelican; 50 Seagulls
S10	22 Oct 2019	Floatables	Foam
S10	22 Oct 2019	Water Color	Green
S10	22 Oct 2019	Current Direction	S
S10	22 Oct 2019	Water Temp (C)	20.9
S10	22 Oct 2019	Wave Height Low (ft)	4

Station	Date	Parameter	Value
S10	22 Oct 2019	High Tide (ft)	4
S10	22 Oct 2019	High Tide Time	614
S10	22 Oct 2019	Low Tide (ft)	2.8
S10	22 Oct 2019	Low Tide Time	1114
S10	22 Oct 2019	Comments	Kelp; Seagrass; 1 Person; Water clear
S11	01 Oct 2019	Arrive Time	747
S11	01 Oct 2019	Weather	Sunny
S11	01 Oct 2019	Wind Speed (kts)	4.6
S11	01 Oct 2019	Wind Dir	W
S11	01 Oct 2019	Animal Life	1 Dog
S11	01 Oct 2019	Floatables	Foam; Film
S11	01 Oct 2019	Water Color	Brown
S11	01 Oct 2019	Current Direction	N
S11	01 Oct 2019	Water Temp (C)	17.5
S11	01 Oct 2019	Wave Height Low (ft)	3
S11	01 Oct 2019	High Tide (ft)	5.9
S11	01 Oct 2019	High Tide Time	1117
S11	01 Oct 2019	Low Tide (ft)	0.9
S11	01 Oct 2019	Low Tide Time	509
S11	01 Oct 2019	Comments	Kelp; Seagrass; Debris; 1 Person; Water clear
S11	15 Oct 2019	Arrive Time	752
S11	15 Oct 2019	Weather	Sunny
S11	15 Oct 2019	Wind Speed (kts)	2.7
S11	15 Oct 2019	Wind Dir	W
S11	15 Oct 2019	Animal Life	3 Grebes; 6 Pelicans
S11	15 Oct 2019	Floatables	Foam; Film
S11	15 Oct 2019	Water Color	Green
S11	15 Oct 2019	Current Direction	N
S11	15 Oct 2019	Water Temp (C)	18.4
S11	15 Oct 2019	Wave Height Low (ft)	2
S11	15 Oct 2019	High Tide (ft)	5.5
S11	15 Oct 2019	High Tide Time	1007
S11	15 Oct 2019	Low Tide (ft)	1.2
S11	15 Oct 2019	Low Tide Time	404
S11	15 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear
S11	22 Oct 2019	Arrive Time	1045
S11	22 Oct 2019	Weather	Sunny
S11	22 Oct 2019	Wind Speed (kts)	6.6
S11	22 Oct 2019	Wind Dir	W
S11	22 Oct 2019	Animal Life	4 Godwits; 2 Seagulls
S11	22 Oct 2019	Floatables	Foam; Film
S11	22 Oct 2019	Water Color	Green
S11	22 Oct 2019	Current Direction	S
S11	22 Oct 2019	Water Temp (C)	20.6
S11	22 Oct 2019	Wave Height Low (ft)	3
S11	22 Oct 2019	High Tide (ft)	4
S11	22 Oct 2019	High Tide Time	614
S11	22 Oct 2019	Low Tide (ft)	2.8
S11	22 Oct 2019	Low Tide Time	1114
S11	22 Oct 2019	Comments	Kelp; Seagrass; 3 Persons; Water clear
S11	29 Oct 2019	Arrive Time	849
S11	29 Oct 2019	Weather	Sunny
S11	29 Oct 2019	Wind Speed (kts)	3.6
S11	29 Oct 2019	Wind Dir	E
S11	29 Oct 2019	Animal Life	None
S11	29 Oct 2019	Floatables	None
S11	29 Oct 2019	Water Color	Green

Station	Date	Parameter	Value
S11	29 Oct 2019	Current Direction	N
S11	29 Oct 2019	Water Temp (C)	16.6
S11	29 Oct 2019	Wave Height Low (ft)	4
S11	29 Oct 2019	High Tide (ft)	6.5
S11	29 Oct 2019	High Tide Time	1004
S11	29 Oct 2019	Low Tide (ft)	1
S11	29 Oct 2019	Low Tide Time	357
S11	29 Oct 2019	Comments	Kelp; Seagrass; Water clear
S12	01 Oct 2019	Arrive Time	719
S12	01 Oct 2019	Weather	Sunny
S12	01 Oct 2019	Wind Speed (kts)	3.8
S12	01 Oct 2019	Wind Dir	E
S12	01 Oct 2019	Animal Life	2 Dogs; 30 Grebes; 3 Seagulls
S12	01 Oct 2019	Floatables	Foam; Film
S12	01 Oct 2019	Water Color	Green
S12	01 Oct 2019	Current Direction	N
S12	01 Oct 2019	Water Temp (C)	18.1
S12	01 Oct 2019	Wave Height Low (ft)	2
S12	01 Oct 2019	High Tide (ft)	5.9
S12	01 Oct 2019	High Tide Time	1117
S12	01 Oct 2019	Low Tide (ft)	0.9
S12	01 Oct 2019	Low Tide Time	509
S12	01 Oct 2019	Comments	Kelp; Seagrass; 5 Persons; Water clear
S12	08 Oct 2019	Arrive Time	853
S12	08 Oct 2019	Weather	Overcast
S12	08 Oct 2019	Wind Speed (kts)	2.5
S12	08 Oct 2019	Wind Dir	W
S12	08 Oct 2019	Animal Life	None
S12	08 Oct 2019	Floatables	None
S12	08 Oct 2019	Water Color	Green
S12	08 Oct 2019	Current Direction	N
S12	08 Oct 2019	Water Temp (C)	19.5
S12	08 Oct 2019	Wave Height Low (ft)	3
S12	08 Oct 2019	High Tide (ft)	4.4
S12	08 Oct 2019	High Tide Time	737
S12	08 Oct 2019	Low Tide (ft)	2.2
S12	08 Oct 2019	Low Tide Time	1309
S12	08 Oct 2019	Comments	Kelp; Seagrass; 2 Persons; 3 Swimmers; Water clear
S12	15 Oct 2019	Arrive Time	822
S12	15 Oct 2019	Weather	Sunny
S12	15 Oct 2019	Wind Speed (kts)	1.7
S12	15 Oct 2019	Wind Dir	W
S12	15 Oct 2019	Animal Life	None
S12	15 Oct 2019	Floatables	Foam; Film
S12	15 Oct 2019	Water Color	Green
S12	15 Oct 2019	Current Direction	S
S12	15 Oct 2019	Water Temp (C)	18.1
S12	15 Oct 2019	Wave Height Low (ft)	2
S12	15 Oct 2019	High Tide (ft)	5.5
S12	15 Oct 2019	High Tide Time	1007
S12	15 Oct 2019	Low Tide (ft)	1.2
S12	15 Oct 2019	Low Tide Time	404
S12	15 Oct 2019	Comments	Kelp; Seagrass; Debris; 2 Persons; 2 Surfers; 2 Fishermen; Water clear
S12	22 Oct 2019	Arrive Time	825
S12	22 Oct 2019	Weather	Sunny
S12	22 Oct 2019	Wind Speed (kts)	4.4

Station	Date	Parameter	Value
S12	22 Oct 2019	Wind Dir	W
	22 Oct 2019	Animal Life	1 Dolphin; 2 Pelicans; 10 Seagulls; 1 Seal
	22 Oct 2019	Floatables	Foam; Film
	22 Oct 2019	Water Color	Green
	22 Oct 2019	Current Direction	N
	22 Oct 2019	Water Temp (C)	19.8
	22 Oct 2019	Wave Height Low (ft)	3
	22 Oct 2019	High Tide (ft)	4
	22 Oct 2019	High Tide Time	614
	22 Oct 2019	Low Tide (ft)	2.8
	22 Oct 2019	Low Tide Time	1114
	22 Oct 2019	Comments	Kelp; Seagrass; 9 Persons; 1 Surfer; 2 Fishermen; Water clear
	29 Oct 2019	Arrive Time	828
S12	29 Oct 2019	Weather	Sunny
	29 Oct 2019	Wind Speed (kts)	2.9
	29 Oct 2019	Wind Dir	E
	29 Oct 2019	Animal Life	None
	29 Oct 2019	Floatables	None
	29 Oct 2019	Water Color	Green
	29 Oct 2019	Current Direction	N
	29 Oct 2019	Water Temp (C)	16.3
	29 Oct 2019	Wave Height Low (ft)	3
	29 Oct 2019	High Tide (ft)	6.5
	29 Oct 2019	High Tide Time	1004
	29 Oct 2019	Low Tide (ft)	1
	29 Oct 2019	Low Tide Time	357
	29 Oct 2019	Comments	Kelp; Seagrass; Debris; Water clear

Kelp Stations

Table 3.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for total coliform bacteria at the SBOO 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	I19	I24	I25	I26	I32	I39	I40
01 Oct 2019	25	14	8	6	7	6	11
02 Oct 2019	25	14	8	6	7	6	11
03 Oct 2019	25	8	5	5	5	5	6
04 Oct 2019	25	8	5	5	5	5	6
05 Oct 2019	25	8	5	5	5	5	6
06 Oct 2019	25	8	5	5	5	5	6
07 Oct 2019	25	8	5	5	5	5	6
08 Oct 2019	25	8	5	5	5	5	6
09 Oct 2019	23	9	6	5	6	5	7
10 Oct 2019	5	5	3	2	5	3	6
11 Oct 2019	5	5	3	2	5	3	6
12 Oct 2019	5	5	3	2	5	3	6
13 Oct 2019	5	5	3	2	5	3	6
14 Oct 2019	5	5	3	2	5	3	6
15 Oct 2019	4	4	3	2	4	3	6
16 Oct 2019	4	4	3	2	4	3	6
17 Oct 2019	5	5	3	2	5	3	8
18 Oct 2019	5	5	3	2	5	3	8
19 Oct 2019	5	5	3	2	5	3	8
20 Oct 2019	5	5	3	2	5	3	8
21 Oct 2019	5	5	3	2	5	3	8
22 Oct 2019	4	4	3	2	4	3	6
23 Oct 2019	4	4	3	2	4	3	6
24 Oct 2019	5	5	3	2	5	3	8
25 Oct 2019	5	5	3	2	5	3	8
26 Oct 2019	5	5	3	2	5	3	8
27 Oct 2019	5	5	3	2	5	3	8
28 Oct 2019	5	5	3	2	5	3	8
29 Oct 2019	9	7	5	4	8	6	10
30 Oct 2019	9	5	6	5	8	7	8
31 Oct 2019	9	5	6	5	8	7	8

* Geometric mean calculated using n<5

Table 3.2

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for fecal coliform bacteria at the SBOO 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	I19	I24	I25	I26	I32	I39	I40
01 Oct 2019	6	3	3	2	2	2	2
02 Oct 2019	6	3	3	2	2	2	2
03 Oct 2019	7	3	3	2	2	2	2
04 Oct 2019	7	3	3	2	2	2	2
05 Oct 2019	7	3	3	2	2	2	2
06 Oct 2019	7	3	3	2	2	2	2
07 Oct 2019	7	3	3	2	2	2	2
08 Oct 2019	7	3	3	2	2	2	2
09 Oct 2019	5	2	3	2	2	2	2
10 Oct 2019	2	2	2	2	2	2	2
11 Oct 2019	2	2	2	2	2	2	2
12 Oct 2019	2	2	2	2	2	2	2
13 Oct 2019	2	2	2	2	2	2	2
14 Oct 2019	2	2	2	2	2	2	2
15 Oct 2019	2	2	2	2	2	2	2
16 Oct 2019	2	2	2	2	2	2	2
17 Oct 2019	2	2	2	2	2	2	2
18 Oct 2019	2	2	2	2	2	2	2
19 Oct 2019	2	2	2	2	2	2	2
20 Oct 2019	2	2	2	2	2	2	2
21 Oct 2019	2	2	2	2	2	2	2
22 Oct 2019	2	2	2	2	2	2	2
23 Oct 2019	2	2	2	2	2	2	2
24 Oct 2019	2	2	2	2	2	2	2
25 Oct 2019	2	2	2	2	2	2	2
26 Oct 2019	2	2	2	2	2	2	2
27 Oct 2019	2	2	2	2	2	2	2
28 Oct 2019	2	2	2	2	2	2	2
29 Oct 2019	2	2	2	2	2	2	2
30 Oct 2019	2	2	3	2	2	2	2
31 Oct 2019	2	2	3	2	2	2	2

* Geometric mean calculated using n<5

Table 3.3

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for *Enterococcus* at the SBOO 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	I19	I24	I25	I26	I32	I39	I40
01 Oct 2019	9	3	4	3	2	2	3
02 Oct 2019	9	3	4	3	2	2	3
03 Oct 2019	10	3	3	3	2	3	2
04 Oct 2019	10	3	3	3	2	3	2
05 Oct 2019	10	3	3	3	2	3	2
06 Oct 2019	10	3	3	3	2	3	2
07 Oct 2019	10	3	3	3	2	3	2
08 Oct 2019	10	3	3	3	2	3	2
09 Oct 2019	7	3	3	3	2	2	2
10 Oct 2019	2	2	2	2	2	2	2
11 Oct 2019	2	2	2	2	2	2	2
12 Oct 2019	2	2	2	2	2	2	2
13 Oct 2019	2	2	2	2	2	2	2
14 Oct 2019	2	2	2	2	2	2	2
15 Oct 2019	2	2	2	2	2	2	2
16 Oct 2019	2	2	2	2	2	2	2
17 Oct 2019	2	2	2	2	2	2	2
18 Oct 2019	2	2	2	2	2	2	2
19 Oct 2019	2	2	2	2	2	2	2
20 Oct 2019	2	2	2	2	2	2	2
21 Oct 2019	2	2	2	2	2	2	2
22 Oct 2019	2	2	2	2	2	2	2
23 Oct 2019	2	2	2	2	2	2	2
24 Oct 2019	2	2	2	2	2	2	2
25 Oct 2019	2	2	2	2	2	2	2
26 Oct 2019	2	2	2	2	2	2	2
27 Oct 2019	2	2	2	2	2	2	2
28 Oct 2019	2	2	2	2	2	2	2
29 Oct 2019	3	3	2	2	2	3	2
30 Oct 2019	3	3	3	3	3	3	2
31 Oct 2019	3	3	3	3	3	3	2

* Geometric mean calculated using n<5

Table 3.4

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

Date	I19	I24	I25	I26	I32	I39	I40
09 Oct 2019	IC						
15 Oct 2019	IC						
22 Oct 2019	IC						
29 Oct 2019	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.5

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

Date	I19	I24	I25	I26	I32	I39	I40
09 Oct 2019	IC						
15 Oct 2019	IC						
22 Oct 2019	IC						
29 Oct 2019	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.6

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

Date	I19	I24	I25	I26	I32	I39	I40
09 Oct 2019	IC						
15 Oct 2019	IC						
22 Oct 2019	IC						
29 Oct 2019	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.7

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

Date	I19	I24	I25	I26	I32	I39	I40
09 Oct 2019	IC						
15 Oct 2019	IC						
22 Oct 2019	IC						
29 Oct 2019	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.8

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

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
I19	09 Oct 2019	1116	2	<2	<2	<2	1.00	18.0	68.88	8.6	33.55	8.2
I19	09 Oct 2019	1116	6	20e	<2	4e	0.10	16.4	72.11	8.1	33.55	8.1
I19	09 Oct 2019	1116	11	26e	<2	<2	0.08	15.7	67.64	7.6	33.53	8.1
I19	15 Oct 2019	1045	2	<2	<2	<2	1.00	16.9	69.37	8.2	33.55	8.1
I19	15 Oct 2019	1045	6	<2	<2	<2	1.00	16.1	72.15	8.0	33.54	8.1
I19	15 Oct 2019	1045	11	<2	<2	<2	1.00	15.2	66.43	7.1	33.55	8.0
I19	22 Oct 2019	1033	2	2e	<2	<2	1.00	16.8	68.85	7.8	33.60	8.1
I19	22 Oct 2019	1033	6	<2	<2	<2	1.00	14.6	69.61	7.2	33.55	8.0
I19	22 Oct 2019	1033	11	<2	<2	<2	1.00	13.9	57.94	6.2	33.54	7.9
I19	29 Oct 2019	1029	2	2e	<2	2e	1.00	17.8	74.61	8.4	33.55	8.2
I19	29 Oct 2019	1029	6	48	<2	16e	0.04	17.7	72.41	8.3	33.56	8.2
I19	29 Oct 2019	1029	11	<200	8e	24e	0.04	17.7	72.07	8.2	33.57	8.1
I24	09 Oct 2019	1138	2	<2	<2	<2	1.00	19.0	75.63	8.7	33.63	8.2
I24	09 Oct 2019	1138	6	18e	2e	4e	0.11	17.7	64.70	8.9	33.56	8.2
I24	09 Oct 2019	1138	11	12e	<2	<2	0.17	15.9	73.03	8.0	33.54	8.1
I24	15 Oct 2019	1106	2	<2	<2	<2	1.00	18.3	67.49	8.1	33.59	8.1
I24	15 Oct 2019	1106	6	<2	<2	<2	1.00	16.7	71.00	7.7	33.55	8.1
I24	15 Oct 2019	1106	11	<2	<2	<2	1.00	15.0	75.17	6.4	33.52	8.0
I24	22 Oct 2019	1054	2	<2	<2	<2	1.00	15.3	75.85	7.8	33.60	8.1
I24	22 Oct 2019	1054	6	<2	<2	<2	1.00	14.8	79.13	7.6	33.51	8.0
I24	22 Oct 2019	1054	11	<2	<2	<2	1.00	14.3	62.10	6.6	33.54	8.0
I24	29 Oct 2019	1048	2	6e	<2	<2	0.33	17.6	75.01	8.6	33.57	8.2
I24	29 Oct 2019	1048	6	34e	4e	10e	0.12	17.5	74.49	8.4	33.57	8.2
I24	29 Oct 2019	1048	11	20e	<2	14e	0.10	17.5	73.41	8.3	33.57	8.2
I25	09 Oct 2019	1144	2	<2	<2	<2	1.00	19.6	78.56	8.3	33.65	8.2
I25	09 Oct 2019	1144	6	20e	<2	2e	0.10	17.8	65.51	9.0	33.55	8.2
I25	09 Oct 2019	1144	9	4e	<2	<2	0.50	16.2	73.62	8.3	33.53	8.1
I25	15 Oct 2019	1115	2	<2	<2	<2	1.00	17.8	70.03	8.3	33.57	8.1
I25	15 Oct 2019	1115	6	<2	<2	<2	1.00	17.1	70.89	8.2	33.55	8.1
I25	15 Oct 2019	1115	9	<2	<2	<2	1.00	15.0	76.12	7.2	33.51	8.0
I25	22 Oct 2019	1102	2	<2	<2	<2	1.00	17.1	73.74	8.2	33.62	8.1
I25	22 Oct 2019	1102	6	<2	<2	<2	1.00	14.3	79.14	7.6	33.55	8.0
I25	22 Oct 2019	1102	9	<2	<2	<2	1.00	14.2	79.48	7.5	33.51	8.0
I25	29 Oct 2019	1055	2	<2	2e	<2	1.00	17.6	76.17	8.6	33.58	8.2
I25	29 Oct 2019	1055	6	60e	10e	6e	0.17	17.5	74.12	8.5	33.57	8.2
I25	29 Oct 2019	1055	9	80e	4e	8e	0.05	17.5	74.69	8.3	33.58	8.2
I26	09 Oct 2019	1155	2	<2	<2	<2	1.00	19.4	77.36	8.6	33.64	8.2
I26	09 Oct 2019	1155	6	2e	2e	<2	1.00	18.3	60.14	8.8	33.53	8.2
I26	09 Oct 2019	1155	9	10e	2e	2e	0.20	15.8	73.62	7.9	33.54	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
I26	15 Oct 2019	1126	2	<2	<2	<2	1.00	17.9	69.77	8.4	33.58	8.1
I26	15 Oct 2019	1126	6	<2	<2	<2	1.00	16.7	72.56	8.5	33.56	8.2
I26	15 Oct 2019	1126	9	<2	<2	<2	1.00	15.0	74.51	7.1	33.52	8.1
I26	22 Oct 2019	1112	2	<2	<2	<2	1.00	17.0	70.82	7.9	33.64	8.1
I26	22 Oct 2019	1112	6	<2	<2	<2	1.00	14.2	76.88	7.1	33.52	8.0
I26	22 Oct 2019	1112	9	<2	<2	<2	1.00	14.2	77.44	7.0	33.52	8.0
I26	29 Oct 2019	1104	2	6e	<2	<2	0.33	17.6	74.93	8.5	33.59	8.2
I26	29 Oct 2019	1104	6	34e	<2	<2	0.06	17.5	73.11	8.5	33.58	8.2
I26	29 Oct 2019	1104	9	60e	4e	12e	0.07	17.4	74.02	8.4	33.58	8.2
I32	09 Oct 2019	1214	2	4e	<2	<2	0.50	18.4	62.65	8.8	33.55	8.2
I32	09 Oct 2019	1214	6	8e	<2	<2	0.25	16.3	65.33	7.0	33.54	8.1
I32	09 Oct 2019	1214	9	24e	2e	<2	0.08	15.6	71.03	6.2	33.54	8.0
I32	15 Oct 2019	1136	2	<2	<2	<2	1.00	16.7	73.00	7.5	33.55	8.1
I32	15 Oct 2019	1136	6	<2	<2	<2	1.00	15.3	70.59	6.9	33.50	8.0
I32	15 Oct 2019	1136	9	2e	<2	<2	1.00	15.2	72.04	6.7	33.51	8.0
I32	22 Oct 2019	1124	2	<2	<2	<2	1.00	17.5	72.18	7.8	33.65	8.1
I32	22 Oct 2019	1124	6	2e	<2	<2	1.00	15.0	59.76	6.9	33.62	8.0
I32	22 Oct 2019	1124	9	<2	<2	<2	1.00	14.6	62.70	6.5	33.54	8.0
I32	29 Oct 2019	1115	2	<2	<2	<2	1.00	17.3	73.78	8.2	33.57	8.1
I32	29 Oct 2019	1115	6	<200	2e	2e	0.01	17.1	72.08	8.1	33.56	8.1
I32	29 Oct 2019	1115	9	<20	<2	12e	0.10	17.1	72.22	8.2	33.56	8.1
I39	09 Oct 2019	1051	2	<2	<2	<2	1.00	19.4	79.35	8.4	33.65	8.2
I39	09 Oct 2019	1051	12	22e	<2	<2	0.09	15.3	76.86	8.0	33.51	8.1
I39	09 Oct 2019	1051	18	<2	<2	<2	1.00	14.6	78.17	7.6	33.51	8.1
I39	15 Oct 2019	1025	2	<2	<2	<2	1.00	18.4	74.39	8.7	33.60	8.2
I39	15 Oct 2019	1025	12	<2	<2	<2	1.00	15.8	78.04	8.4	33.53	8.1
I39	15 Oct 2019	1025	18	<2	<2	<2	1.00	14.8	79.18	7.5	33.55	8.1
I39	22 Oct 2019	1014	2	2e	<2	4e	1.00	17.7	79.03	8.3	33.61	8.1
I39	22 Oct 2019	1014	12	2e	<2	<2	1.00	16.1	77.51	8.2	33.58	8.1
I39	22 Oct 2019	1014	18	<2	<2	<2	1.00	13.6	80.48	7.0	33.55	8.0
I39	29 Oct 2019	1003	2	12e	<2	<2	0.17	17.6	79.12	8.6	33.60	8.2
I39	29 Oct 2019	1003	12	70	2e	18e	0.03	17.5	78.44	8.5	33.59	8.2
I39	29 Oct 2019	1003	18	160e	2e	16e	0.01	17.4	78.10	8.3	33.58	8.2
I40	09 Oct 2019	1129	2	10e	<2	<2	0.20	17.6	68.22	8.4	33.60	8.2
I40	09 Oct 2019	1129	6	16e	<2	<2	0.12	16.1	64.68	7.5	33.54	8.1
I40	09 Oct 2019	1129	9	16e	2e	2e	0.12	15.5	69.76	7.4	33.53	8.1
I40	15 Oct 2019	1057	2	<2	<2	<2	1.00	17.6	66.04	7.7	33.58	8.1
I40	15 Oct 2019	1057	6	<20	<2	<2	0.10	15.8	70.57	7.5	33.55	8.1
I40	15 Oct 2019	1057	9	2e	4e	<2	2.00	15.1	71.06	6.9	33.52	8.0
I40	22 Oct 2019	1045	2	<2	<2	<2	1.00	16.5	69.31	7.5	33.59	8.0
I40	22 Oct 2019	1045	6	<2	<2	<2	1.00	14.7	77.68	7.2	33.55	8.0
I40	22 Oct 2019	1045	9	<2	<2	<2	1.00	14.1	65.52	6.5	33.53	8.0
I40	29 Oct 2019	1040	2	<20	2e	2e	0.10	17.7	74.85	8.6	33.58	8.2
I40	29 Oct 2019	1040	6	<20	<2	2e	0.10	17.6	74.81	8.5	33.58	8.2
I40	29 Oct 2019	1040	9	24e	2e	4e	0.08	17.6	75.01	8.5	33.58	8.2

ns = not sampled

ND = no data

Table 3.9

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

Station	Date	Parameter	Value
I19	09 Oct 2019	Depth (m)	11
I19	09 Oct 2019	Arrive Time	1116
I19	09 Oct 2019	Depart Time	1123
I19	09 Oct 2019	Air Temp (C)	18
I19	09 Oct 2019	Weather	Partly Cloudy
I19	09 Oct 2019	Visibility (mi)	9
I19	09 Oct 2019	Wind Speed (kts)	6
I19	09 Oct 2019	Wind Dir	S
I19	09 Oct 2019	Water Color	Bluish-Green
I19	09 Oct 2019	Wave Ht Low (ft)	3
I19	09 Oct 2019	Wave Period (sec)	13
I19	09 Oct 2019	Sea State	Wind ripples
I19	09 Oct 2019	High Tide (ft)	4.59
I19	09 Oct 2019	High Tide Time	758
I19	09 Oct 2019	Low Tide (ft)	1.76
I19	09 Oct 2019	Low Tide Time	1343
I19	09 Oct 2019	Comments	none
I19	15 Oct 2019	Depth (m)	11
I19	15 Oct 2019	Arrive Time	1045
I19	15 Oct 2019	Depart Time	1047
I19	15 Oct 2019	Air Temp (C)	18
I19	15 Oct 2019	Weather	Haze
I19	15 Oct 2019	Visibility (mi)	11
I19	15 Oct 2019	Wind Speed (kts)	3
I19	15 Oct 2019	Wind Dir	SW
I19	15 Oct 2019	Water Color	Greenish-Brown
I19	15 Oct 2019	Wave Ht Low (ft)	1
I19	15 Oct 2019	Wave Period (sec)	13
I19	15 Oct 2019	Sea State	Calm
I19	15 Oct 2019	High Tide (ft)	6.33
I19	15 Oct 2019	High Tide Time	2106
I19	15 Oct 2019	Low Tide (ft)	-0.71
I19	15 Oct 2019	Low Tide Time	405
I19	15 Oct 2019	Comments	none
I19	22 Oct 2019	Depth (m)	11
I19	22 Oct 2019	Arrive Time	1033
I19	22 Oct 2019	Depart Time	1035
I19	22 Oct 2019	Air Temp (C)	22
I19	22 Oct 2019	Weather	Haze
I19	22 Oct 2019	Visibility (mi)	12
I19	22 Oct 2019	Wind Speed (kts)	3
I19	22 Oct 2019	Wind Dir	W
I19	22 Oct 2019	Water Color	Greenish-Brown
I19	22 Oct 2019	Wave Ht Low (ft)	2
I19	22 Oct 2019	Wave Period (sec)	13
I19	22 Oct 2019	Sea State	Calm
I19	22 Oct 2019	High Tide (ft)	6.33
I19	22 Oct 2019	High Tide Time	2106
I19	22 Oct 2019	Low Tide (ft)	-0.71
I19	22 Oct 2019	Low Tide Time	405
I19	22 Oct 2019	Comments	none
I19	29 Oct 2019	Depth (m)	13
I19	29 Oct 2019	Arrive Time	1029

Station	Date	Parameter	Value
I19	29 Oct 2019	Depart Time	1034
I19	29 Oct 2019	Air Temp (C)	17
I19	29 Oct 2019	Weather	Clear
I19	29 Oct 2019	Visibility (mi)	11
I19	29 Oct 2019	Wind Speed (kts)	4
I19	29 Oct 2019	Wind Dir	SE
I19	29 Oct 2019	Water Color	Green
I19	29 Oct 2019	Wave Ht Low (ft)	3
I19	29 Oct 2019	Wave Period (sec)	9
I19	29 Oct 2019	Sea State	Wind ripples
I19	29 Oct 2019	High Tide (ft)	6.33
I19	29 Oct 2019	High Tide Time	2106
I19	29 Oct 2019	Low Tide (ft)	-0.71
I19	29 Oct 2019	Low Tide Time	405
I19	29 Oct 2019	Comments	none
I24	09 Oct 2019	Depth (m)	10
I24	09 Oct 2019	Arrive Time	1138
I24	09 Oct 2019	Depart Time	1142
I24	09 Oct 2019	Air Temp (C)	18
I24	09 Oct 2019	Weather	Clear
I24	09 Oct 2019	Visibility (mi)	11
I24	09 Oct 2019	Wind Speed (kts)	7
I24	09 Oct 2019	Wind Dir	SW
I24	09 Oct 2019	Water Color	Bluish-Green
I24	09 Oct 2019	Wave Ht Low (ft)	3
I24	09 Oct 2019	Wave Period (sec)	13
I24	09 Oct 2019	Sea State	Wind ripples
I24	09 Oct 2019	High Tide (ft)	4.59
I24	09 Oct 2019	High Tide Time	758
I24	09 Oct 2019	Low Tide (ft)	1.76
I24	09 Oct 2019	Low Tide Time	1343
I24	09 Oct 2019	Comments	none
I24	15 Oct 2019	Depth (m)	12
I24	15 Oct 2019	Arrive Time	1106
I24	15 Oct 2019	Depart Time	1108
I24	15 Oct 2019	Air Temp (C)	18
I24	15 Oct 2019	Weather	Haze
I24	15 Oct 2019	Visibility (mi)	11
I24	15 Oct 2019	Wind Speed (kts)	6
I24	15 Oct 2019	Wind Dir	SW
I24	15 Oct 2019	Water Color	Greenish-Brown
I24	15 Oct 2019	Wave Ht Low (ft)	1
I24	15 Oct 2019	Wave Period (sec)	13
I24	15 Oct 2019	Sea State	Calm
I24	15 Oct 2019	High Tide (ft)	6.33
I24	15 Oct 2019	High Tide Time	2106
I24	15 Oct 2019	Low Tide (ft)	-0.71
I24	15 Oct 2019	Low Tide Time	405
I24	15 Oct 2019	Comments	none
I24	22 Oct 2019	Depth (m)	11
I24	22 Oct 2019	Arrive Time	1054
I24	22 Oct 2019	Depart Time	1057
I24	22 Oct 2019	Air Temp (C)	21
I24	22 Oct 2019	Weather	Haze
I24	22 Oct 2019	Visibility (mi)	12
I24	22 Oct 2019	Wind Speed (kts)	8
I24	22 Oct 2019	Wind Dir	W
I24	22 Oct 2019	Water Color	Greenish-Brown

Station	Date	Parameter	Value
I24	22 Oct 2019	Wave Ht Low (ft)	2
I24	22 Oct 2019	Wave Period (sec)	13
I24	22 Oct 2019	Sea State	Calm
I24	22 Oct 2019	High Tide (ft)	6.33
I24	22 Oct 2019	High Tide Time	2106
I24	22 Oct 2019	Low Tide (ft)	-0.71
I24	22 Oct 2019	Low Tide Time	405
I24	22 Oct 2019	Comments	none
I24	29 Oct 2019	Depth (m)	15
I24	29 Oct 2019	Arrive Time	1048
I24	29 Oct 2019	Depart Time	1052
I24	29 Oct 2019	Air Temp (C)	17
I24	29 Oct 2019	Weather	Clear
I24	29 Oct 2019	Visibility (mi)	11
I24	29 Oct 2019	Wind Speed (kts)	4
I24	29 Oct 2019	Wind Dir	SE
I24	29 Oct 2019	Water Color	Green
I24	29 Oct 2019	Wave Ht Low (ft)	3
I24	29 Oct 2019	Wave Period (sec)	9
I24	29 Oct 2019	Sea State	Wind ripples
I24	29 Oct 2019	High Tide (ft)	6.33
I24	29 Oct 2019	High Tide Time	2106
I24	29 Oct 2019	Low Tide (ft)	-0.71
I24	29 Oct 2019	Low Tide Time	405
I24	29 Oct 2019	Comments	none
I25	09 Oct 2019	Depth (m)	10
I25	09 Oct 2019	Arrive Time	1144
I25	09 Oct 2019	Depart Time	1149
I25	09 Oct 2019	Air Temp (C)	18
I25	09 Oct 2019	Weather	Clear
I25	09 Oct 2019	Visibility (mi)	11
I25	09 Oct 2019	Wind Speed (kts)	6
I25	09 Oct 2019	Wind Dir	SW
I25	09 Oct 2019	Water Color	Bluish-Green
I25	09 Oct 2019	Wave Ht Low (ft)	3
I25	09 Oct 2019	Wave Period (sec)	13
I25	09 Oct 2019	Sea State	Wind ripples
I25	09 Oct 2019	High Tide (ft)	4.59
I25	09 Oct 2019	High Tide Time	758
I25	09 Oct 2019	Low Tide (ft)	1.76
I25	09 Oct 2019	Low Tide Time	1343
I25	09 Oct 2019	Comments	none
I25	15 Oct 2019	Depth (m)	10
I25	15 Oct 2019	Arrive Time	1115
I25	15 Oct 2019	Depart Time	1118
I25	15 Oct 2019	Air Temp (C)	18
I25	15 Oct 2019	Weather	Haze
I25	15 Oct 2019	Visibility (mi)	11
I25	15 Oct 2019	Wind Speed (kts)	10
I25	15 Oct 2019	Wind Dir	S
I25	15 Oct 2019	Water Color	Greenish-Brown
I25	15 Oct 2019	Wave Ht Low (ft)	1
I25	15 Oct 2019	Wave Period (sec)	13
I25	15 Oct 2019	Sea State	Calm
I25	15 Oct 2019	High Tide (ft)	6.33
I25	15 Oct 2019	High Tide Time	2106
I25	15 Oct 2019	Low Tide (ft)	-0.71
I25	15 Oct 2019	Low Tide Time	405

Station	Date	Parameter	Value
I25	15 Oct 2019	Comments	none
I25	22 Oct 2019	Depth (m)	9
I25	22 Oct 2019	Arrive Time	1102
I25	22 Oct 2019	Depart Time	1104
I25	22 Oct 2019	Air Temp (C)	21
I25	22 Oct 2019	Weather	Haze
I25	22 Oct 2019	Visibility (mi)	12
I25	22 Oct 2019	Wind Speed (kts)	3
I25	22 Oct 2019	Wind Dir	SW
I25	22 Oct 2019	Water Color	Greenish-Brown
I25	22 Oct 2019	Wave Ht Low (ft)	2
I25	22 Oct 2019	Wave Period (sec)	13
I25	22 Oct 2019	Sea State	Calm
I25	22 Oct 2019	High Tide (ft)	6.33
I25	22 Oct 2019	High Tide Time	2106
I25	22 Oct 2019	Low Tide (ft)	-0.71
I25	22 Oct 2019	Low Tide Time	405
I25	22 Oct 2019	Comments	none
I25	29 Oct 2019	Depth (m)	10
I25	29 Oct 2019	Arrive Time	1055
I25	29 Oct 2019	Depart Time	1059
I25	29 Oct 2019	Air Temp (C)	18
I25	29 Oct 2019	Weather	Clear
I25	29 Oct 2019	Visibility (mi)	11
I25	29 Oct 2019	Wind Speed (kts)	5
I25	29 Oct 2019	Wind Dir	SE
I25	29 Oct 2019	Water Color	Green
I25	29 Oct 2019	Wave Ht Low (ft)	3
I25	29 Oct 2019	Wave Period (sec)	9
I25	29 Oct 2019	Sea State	Wind ripples
I25	29 Oct 2019	High Tide (ft)	6.33
I25	29 Oct 2019	High Tide Time	2106
I25	29 Oct 2019	Low Tide (ft)	-0.71
I25	29 Oct 2019	Low Tide Time	405
I25	29 Oct 2019	Comments	none
I26	09 Oct 2019	Depth (m)	10
I26	09 Oct 2019	Arrive Time	1155
I26	09 Oct 2019	Depart Time	1205
I26	09 Oct 2019	Air Temp (C)	19
I26	09 Oct 2019	Weather	Clear
I26	09 Oct 2019	Visibility (mi)	11
I26	09 Oct 2019	Wind Speed (kts)	5
I26	09 Oct 2019	Wind Dir	S
I26	09 Oct 2019	Water Color	Bluish-Green
I26	09 Oct 2019	Wave Ht Low (ft)	3
I26	09 Oct 2019	Wave Period (sec)	13
I26	09 Oct 2019	Sea State	Wind ripples
I26	09 Oct 2019	High Tide (ft)	4.59
I26	09 Oct 2019	High Tide Time	758
I26	09 Oct 2019	Low Tide (ft)	1.76
I26	09 Oct 2019	Low Tide Time	1343
I26	09 Oct 2019	Comments	none
I26	15 Oct 2019	Depth (m)	9
I26	15 Oct 2019	Arrive Time	1126
I26	15 Oct 2019	Depart Time	1129
I26	15 Oct 2019	Air Temp (C)	18
I26	15 Oct 2019	Weather	Haze

Station	Date	Parameter	Value
I26	15 Oct 2019	Visibility (mi)	11
I26	15 Oct 2019	Wind Speed (kts)	8
I26	15 Oct 2019	Wind Dir	S
I26	15 Oct 2019	Water Color	Greenish-Brown
I26	15 Oct 2019	Wave Ht Low (ft)	1
I26	15 Oct 2019	Wave Period (sec)	13
I26	15 Oct 2019	Sea State	Calm
I26	15 Oct 2019	High Tide (ft)	6.33
I26	15 Oct 2019	High Tide Time	2106
I26	15 Oct 2019	Low Tide (ft)	-0.71
I26	15 Oct 2019	Low Tide Time	405
I26	15 Oct 2019	Comments	none
I26	22 Oct 2019	Depth (m)	10
I26	22 Oct 2019	Arrive Time	1112
I26	22 Oct 2019	Depart Time	1114
I26	22 Oct 2019	Air Temp (C)	21
I26	22 Oct 2019	Weather	Haze
I26	22 Oct 2019	Visibility (mi)	12
I26	22 Oct 2019	Wind Speed (kts)	6
I26	22 Oct 2019	Wind Dir	W
I26	22 Oct 2019	Water Color	Greenish-Brown
I26	22 Oct 2019	Wave Ht Low (ft)	2
I26	22 Oct 2019	Wave Period (sec)	13
I26	22 Oct 2019	Sea State	Calm
I26	22 Oct 2019	High Tide (ft)	6.33
I26	22 Oct 2019	High Tide Time	2106
I26	22 Oct 2019	Low Tide (ft)	-0.71
I26	22 Oct 2019	Low Tide Time	405
I26	22 Oct 2019	Comments	none
I26	29 Oct 2019	Depth (m)	11
I26	29 Oct 2019	Arrive Time	1104
I26	29 Oct 2019	Depart Time	1110
I26	29 Oct 2019	Air Temp (C)	18
I26	29 Oct 2019	Weather	Clear
I26	29 Oct 2019	Visibility (mi)	11
I26	29 Oct 2019	Wind Speed (kts)	4
I26	29 Oct 2019	Wind Dir	SE
I26	29 Oct 2019	Water Color	Green
I26	29 Oct 2019	Wave Ht Low (ft)	3
I26	29 Oct 2019	Wave Period (sec)	9
I26	29 Oct 2019	Sea State	Wind ripples
I26	29 Oct 2019	High Tide (ft)	6.33
I26	29 Oct 2019	High Tide Time	2106
I26	29 Oct 2019	Low Tide (ft)	-0.71
I26	29 Oct 2019	Low Tide Time	405
I26	29 Oct 2019	Comments	none
I32	09 Oct 2019	Depth (m)	11
I32	09 Oct 2019	Arrive Time	1214
I32	09 Oct 2019	Depart Time	1219
I32	09 Oct 2019	Air Temp (C)	19
I32	09 Oct 2019	Weather	Clear
I32	09 Oct 2019	Visibility (mi)	11
I32	09 Oct 2019	Wind Speed (kts)	8
I32	09 Oct 2019	Wind Dir	SW
I32	09 Oct 2019	Water Color	Bluish-Green
I32	09 Oct 2019	Wave Ht Low (ft)	3
I32	09 Oct 2019	Wave Period (sec)	13
I32	09 Oct 2019	Sea State	Wind ripples

Station	Date	Parameter	Value
I32	09 Oct 2019	High Tide (ft)	4.59
I32	09 Oct 2019	High Tide Time	758
I32	09 Oct 2019	Low Tide (ft)	1.76
I32	09 Oct 2019	Low Tide Time	1343
I32	09 Oct 2019	Comments	none
I32	15 Oct 2019	Depth (m)	10
I32	15 Oct 2019	Arrive Time	1136
I32	15 Oct 2019	Depart Time	1138
I32	15 Oct 2019	Air Temp (C)	18
I32	15 Oct 2019	Weather	Haze
I32	15 Oct 2019	Visibility (mi)	11
I32	15 Oct 2019	Wind Speed (kts)	10
I32	15 Oct 2019	Wind Dir	SW
I32	15 Oct 2019	Water Color	Greenish-Brown
I32	15 Oct 2019	Wave Ht Low (ft)	1
I32	15 Oct 2019	Wave Period (sec)	13
I32	15 Oct 2019	Sea State	Calm
I32	15 Oct 2019	High Tide (ft)	6.33
I32	15 Oct 2019	High Tide Time	2106
I32	15 Oct 2019	Low Tide (ft)	-0.71
I32	15 Oct 2019	Low Tide Time	405
I32	15 Oct 2019	Comments	none
I32	22 Oct 2019	Depth (m)	10
I32	22 Oct 2019	Arrive Time	1124
I32	22 Oct 2019	Depart Time	1126
I32	22 Oct 2019	Air Temp (C)	21
I32	22 Oct 2019	Weather	Haze
I32	22 Oct 2019	Visibility (mi)	12
I32	22 Oct 2019	Wind Speed (kts)	4
I32	22 Oct 2019	Wind Dir	SW
I32	22 Oct 2019	Water Color	Greenish-Brown
I32	22 Oct 2019	Wave Ht Low (ft)	2
I32	22 Oct 2019	Wave Period (sec)	13
I32	22 Oct 2019	Sea State	Calm
I32	22 Oct 2019	High Tide (ft)	6.33
I32	22 Oct 2019	High Tide Time	2106
I32	22 Oct 2019	Low Tide (ft)	-0.71
I32	22 Oct 2019	Low Tide Time	405
I32	22 Oct 2019	Comments	none
I32	29 Oct 2019	Depth (m)	11
I32	29 Oct 2019	Arrive Time	1115
I32	29 Oct 2019	Depart Time	1121
I32	29 Oct 2019	Air Temp (C)	18
I32	29 Oct 2019	Weather	Clear
I32	29 Oct 2019	Visibility (mi)	11
I32	29 Oct 2019	Wind Speed (kts)	4
I32	29 Oct 2019	Wind Dir	SE
I32	29 Oct 2019	Water Color	Green
I32	29 Oct 2019	Wave Ht Low (ft)	3
I32	29 Oct 2019	Wave Period (sec)	9
I32	29 Oct 2019	Sea State	Wind ripples
I32	29 Oct 2019	High Tide (ft)	6.33
I32	29 Oct 2019	High Tide Time	2106
I32	29 Oct 2019	Low Tide (ft)	-0.71
I32	29 Oct 2019	Low Tide Time	405
I32	29 Oct 2019	Comments	none
I39	09 Oct 2019	Depth (m)	20

Station	Date	Parameter	Value
I39	09 Oct 2019	Arrive Time	1051
I39	09 Oct 2019	Depart Time	1057
I39	09 Oct 2019	Air Temp (C)	18
I39	09 Oct 2019	Weather	Partly Cloudy
I39	09 Oct 2019	Visibility (mi)	9
I39	09 Oct 2019	Wind Speed (kts)	6
I39	09 Oct 2019	Wind Dir	SW
I39	09 Oct 2019	Water Color	Bluish-Green
I39	09 Oct 2019	Wave Ht Low (ft)	3
I39	09 Oct 2019	Wave Period (sec)	13
I39	09 Oct 2019	Sea State	Wind ripples
I39	09 Oct 2019	High Tide (ft)	4.59
I39	09 Oct 2019	High Tide Time	758
I39	09 Oct 2019	Low Tide (ft)	1.76
I39	09 Oct 2019	Low Tide Time	1343
I39	09 Oct 2019	Comments	Kelp debris
I39	15 Oct 2019	Depth (m)	18
I39	15 Oct 2019	Arrive Time	1025
I39	15 Oct 2019	Depart Time	1029
I39	15 Oct 2019	Air Temp (C)	18
I39	15 Oct 2019	Weather	Clear
I39	15 Oct 2019	Visibility (mi)	11
I39	15 Oct 2019	Wind Speed (kts)	8
I39	15 Oct 2019	Wind Dir	SW
I39	15 Oct 2019	Water Color	Greenish-Blue
I39	15 Oct 2019	Wave Ht Low (ft)	1
I39	15 Oct 2019	Wave Period (sec)	13
I39	15 Oct 2019	Sea State	Calm
I39	15 Oct 2019	High Tide (ft)	6.33
I39	15 Oct 2019	High Tide Time	2106
I39	15 Oct 2019	Low Tide (ft)	-0.71
I39	15 Oct 2019	Low Tide Time	405
I39	15 Oct 2019	Comments	none
I39	22 Oct 2019	Depth (m)	19
I39	22 Oct 2019	Arrive Time	1014
I39	22 Oct 2019	Depart Time	1016
I39	22 Oct 2019	Air Temp (C)	20
I39	22 Oct 2019	Weather	Haze
I39	22 Oct 2019	Visibility (mi)	12
I39	22 Oct 2019	Wind Speed (kts)	1
I39	22 Oct 2019	Wind Dir	W
I39	22 Oct 2019	Water Color	Greenish-Brown
I39	22 Oct 2019	Wave Ht Low (ft)	2
I39	22 Oct 2019	Wave Period (sec)	13
I39	22 Oct 2019	Sea State	Calm
I39	22 Oct 2019	High Tide (ft)	6.33
I39	22 Oct 2019	High Tide Time	2106
I39	22 Oct 2019	Low Tide (ft)	-0.71
I39	22 Oct 2019	Low Tide Time	405
I39	22 Oct 2019	Comments	none
I39	29 Oct 2019	Depth (m)	18
I39	29 Oct 2019	Arrive Time	1003
I39	29 Oct 2019	Depart Time	1014
I39	29 Oct 2019	Air Temp (C)	18
I39	29 Oct 2019	Weather	Clear
I39	29 Oct 2019	Visibility (mi)	11
I39	29 Oct 2019	Wind Speed (kts)	0
I39	29 Oct 2019	Wind Dir	

Station	Date	Parameter	Value
I39	29 Oct 2019	Water Color	Green
I39	29 Oct 2019	Wave Ht Low (ft)	3
I39	29 Oct 2019	Wave Period (sec)	9
I39	29 Oct 2019	Sea State	Wind ripples
I39	29 Oct 2019	High Tide (ft)	6.33
I39	29 Oct 2019	High Tide Time	2106
I39	29 Oct 2019	Low Tide (ft)	-0.71
I39	29 Oct 2019	Low Tide Time	405
I39	29 Oct 2019	Comments	none
I40	09 Oct 2019	Depth (m)	10
I40	09 Oct 2019	Arrive Time	1129
I40	09 Oct 2019	Depart Time	1133
I40	09 Oct 2019	Air Temp (C)	18
I40	09 Oct 2019	Weather	Haze
I40	09 Oct 2019	Visibility (mi)	10
I40	09 Oct 2019	Wind Speed (kts)	6
I40	09 Oct 2019	Wind Dir	SW
I40	09 Oct 2019	Water Color	Bluish-Green
I40	09 Oct 2019	Wave Ht Low (ft)	3
I40	09 Oct 2019	Wave Period (sec)	13
I40	09 Oct 2019	Sea State	Wind ripples
I40	09 Oct 2019	High Tide (ft)	4.59
I40	09 Oct 2019	High Tide Time	758
I40	09 Oct 2019	Low Tide (ft)	1.76
I40	09 Oct 2019	Low Tide Time	1343
I40	09 Oct 2019	Comments	none
I40	15 Oct 2019	Depth (m)	11
I40	15 Oct 2019	Arrive Time	1057
I40	15 Oct 2019	Depart Time	1105
I40	15 Oct 2019	Air Temp (C)	18
I40	15 Oct 2019	Weather	Haze
I40	15 Oct 2019	Visibility (mi)	11
I40	15 Oct 2019	Wind Speed (kts)	7
I40	15 Oct 2019	Wind Dir	S
I40	15 Oct 2019	Water Color	Greenish-Brown
I40	15 Oct 2019	Wave Ht Low (ft)	1
I40	15 Oct 2019	Wave Period (sec)	13
I40	15 Oct 2019	Sea State	Calm
I40	15 Oct 2019	High Tide (ft)	6.33
I40	15 Oct 2019	High Tide Time	2106
I40	15 Oct 2019	Low Tide (ft)	-0.71
I40	15 Oct 2019	Low Tide Time	405
I40	15 Oct 2019	Comments	none
I40	22 Oct 2019	Depth (m)	10
I40	22 Oct 2019	Arrive Time	1045
I40	22 Oct 2019	Depart Time	1047
I40	22 Oct 2019	Air Temp (C)	22
I40	22 Oct 2019	Weather	Haze
I40	22 Oct 2019	Visibility (mi)	12
I40	22 Oct 2019	Wind Speed (kts)	3
I40	22 Oct 2019	Wind Dir	W
I40	22 Oct 2019	Water Color	Greenish-Brown
I40	22 Oct 2019	Wave Ht Low (ft)	2
I40	22 Oct 2019	Wave Period (sec)	13
I40	22 Oct 2019	Sea State	Calm
I40	22 Oct 2019	High Tide (ft)	6.33
I40	22 Oct 2019	High Tide Time	2106
I40	22 Oct 2019	Low Tide (ft)	-0.71

Station	Date	Parameter	Value
I40	22 Oct 2019	Low Tide Time	405
I40	22 Oct 2019	Comments	none
I40	29 Oct 2019	Depth (m)	12
I40	29 Oct 2019	Arrive Time	1040
I40	29 Oct 2019	Depart Time	1045
I40	29 Oct 2019	Air Temp (C)	17
I40	29 Oct 2019	Weather	Clear
I40	29 Oct 2019	Visibility (mi)	11
I40	29 Oct 2019	Wind Speed (kts)	4
I40	29 Oct 2019	Wind Dir	SE
I40	29 Oct 2019	Water Color	Green
I40	29 Oct 2019	Wave Ht Low (ft)	3
I40	29 Oct 2019	Wave Period (sec)	9
I40	29 Oct 2019	Sea State	Wind ripples
I40	29 Oct 2019	High Tide (ft)	6.33
I40	29 Oct 2019	High Tide Time	2106
I40	29 Oct 2019	Low Tide (ft)	-0.71
I40	29 Oct 2019	Low Tide Time	405
I40	29 Oct 2019	Comments	none

Table 3.10

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma\text{-t}$)	Chlor ($\mu\text{g/L}$)
I19	09 Oct 2019	1	18.36	67.62	8.7	33.55	8.2	24.1	1.83
I19	09 Oct 2019	2	17.99	68.88	8.6	33.55	8.2	24.2	1.75
I19	09 Oct 2019	3	17.95	69.23	8.6	33.53	8.2	24.2	1.86
I19	09 Oct 2019	4	17.79	68.99	8.4	33.55	8.2	24.2	1.97
I19	09 Oct 2019	5	16.88	69.61	8.2	33.57	8.1	24.4	1.97
I19	09 Oct 2019	6	16.45	72.11	8.1	33.55	8.1	24.5	1.97
I19	09 Oct 2019	7	16.01	72.09	7.9	33.55	8.1	24.6	2.31
I19	09 Oct 2019	8	15.86	72.69	7.8	33.53	8.1	24.6	2.93
I19	09 Oct 2019	9	15.80	72.63	7.8	33.53	8.1	24.7	3.34
I19	09 Oct 2019	10	15.69	67.64	7.6	33.53	8.1	24.7	3.81
I19	15 Oct 2019	1	17.08	69.85	8.2	33.55	8.1	24.4	1.33
I19	15 Oct 2019	2	16.92	69.37	8.2	33.55	8.1	24.4	1.47
I19	15 Oct 2019	3	16.87	68.95	8.2	33.54	8.1	24.4	1.77
I19	15 Oct 2019	4	16.81	68.67	8.2	33.55	8.1	24.4	2.13
I19	15 Oct 2019	5	16.54	69.19	8.1	33.54	8.1	24.5	2.50
I19	15 Oct 2019	6	16.14	72.15	8.0	33.54	8.1	24.6	2.90
I19	15 Oct 2019	7	15.82	72.93	7.7	33.53	8.1	24.7	3.37
I19	15 Oct 2019	8	15.58	71.25	7.5	33.52	8.1	24.7	4.16
I19	15 Oct 2019	9	15.56	69.31	7.4	33.52	8.1	24.7	4.70
I19	15 Oct 2019	10	15.21	66.43	7.1	33.55	8.0	24.8	5.16
I19	22 Oct 2019	1	17.02	69.20	7.9	33.59	8.1	24.4	0.93
I19	22 Oct 2019	2	16.78	68.85	7.8	33.60	8.1	24.5	1.01
I19	22 Oct 2019	3	16.27	68.36	7.7	33.60	8.1	24.6	1.44
I19	22 Oct 2019	4	15.54	69.76	7.6	33.58	8.1	24.8	1.85
I19	22 Oct 2019	5	15.08	70.13	7.4	33.57	8.0	24.9	2.25
I19	22 Oct 2019	6	14.55	69.61	7.2	33.55	8.0	25.0	2.89
I19	22 Oct 2019	7	14.45	67.47	7.0	33.53	8.0	25.0	3.68
I19	22 Oct 2019	8	14.20	62.57	6.7	33.55	8.0	25.0	4.08
I19	22 Oct 2019	9	13.99	58.25	6.4	33.55	8.0	25.1	4.07
I19	22 Oct 2019	10	13.88	57.94	6.2	33.54	7.9	25.1	3.77
I19	29 Oct 2019	1	17.84	75.20	8.4	33.55	8.2	24.2	1.26
I19	29 Oct 2019	2	17.82	74.61	8.4	33.55	8.2	24.2	1.34
I19	29 Oct 2019	3	17.76	74.03	8.4	33.55	8.2	24.2	1.56
I19	29 Oct 2019	4	17.70	73.01	8.4	33.55	8.2	24.2	2.34
I19	29 Oct 2019	5	17.69	72.54	8.3	33.55	8.2	24.2	2.92
I19	29 Oct 2019	6	17.69	72.41	8.3	33.56	8.2	24.2	3.04
I19	29 Oct 2019	7	17.69	72.02	8.3	33.56	8.2	24.2	2.96
I19	29 Oct 2019	8	17.68	71.87	8.3	33.56	8.2	24.2	2.80
I19	29 Oct 2019	9	17.68	71.85	8.2	33.56	8.2	24.2	2.53
I19	29 Oct 2019	10	17.67	72.07	8.2	33.57	8.1	24.3	2.20
I24	09 Oct 2019	1	19.28	75.10	8.6	33.61	8.2	23.9	1.42
I24	09 Oct 2019	2	19.02	75.63	8.7	33.63	8.2	24.0	1.59
I24	09 Oct 2019	3	18.55	70.21	9.0	33.59	8.2	24.1	2.65
I24	09 Oct 2019	4	18.12	65.53	9.1	33.55	8.2	24.1	4.57
I24	09 Oct 2019	5	18.04	62.89	9.1	33.53	8.2	24.1	6.64
I24	09 Oct 2019	6	17.74	64.70	8.9	33.56	8.2	24.2	6.31
I24	09 Oct 2019	7	17.09	69.04	8.5	33.57	8.2	24.4	4.65
I24	09 Oct 2019	8	16.34	71.06	8.1	33.57	8.1	24.6	3.67
I24	09 Oct 2019	9	15.86	73.03	8.0	33.54	8.1	24.7	3.03
I24	15 Oct 2019	1	18.51	67.73	8.1	33.59	8.1	24.1	1.68
I24	15 Oct 2019	2	18.31	67.49	8.1	33.59	8.1	24.1	1.92

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I24	15 Oct 2019	3	18.26	66.52	8.1	33.58	8.1	24.1	2.29
I24	15 Oct 2019	4	18.00	67.26	8.0	33.58	8.1	24.2	2.77
I24	15 Oct 2019	5	17.33	69.77	7.9	33.59	8.1	24.4	2.95
I24	15 Oct 2019	6	16.71	71.00	7.7	33.55	8.1	24.5	3.08
I24	15 Oct 2019	7	15.73	73.78	7.2	33.53	8.1	24.7	2.88
I24	15 Oct 2019	8	15.61	75.39	7.0	33.51	8.0	24.7	2.87
I24	15 Oct 2019	9	15.53	75.84	6.9	33.51	8.0	24.7	2.68
I24	15 Oct 2019	10	15.30	77.02	6.6	33.52	8.0	24.8	2.18
I24	15 Oct 2019	11	14.97	75.17	6.4	33.52	8.0	24.8	1.56
I24	22 Oct 2019	1	17.09	74.99	8.0	33.58	8.1	24.4	0.78
I24	22 Oct 2019	2	15.30	75.85	7.8	33.60	8.1	24.8	0.95
I24	22 Oct 2019	3	14.89	77.95	7.7	33.52	8.1	24.9	1.06
I24	22 Oct 2019	4	14.81	78.89	7.7	33.51	8.0	24.9	1.09
I24	22 Oct 2019	5	14.78	79.06	7.6	33.51	8.0	24.9	1.12
I24	22 Oct 2019	6	14.76	79.13	7.6	33.51	8.0	24.9	1.16
I24	22 Oct 2019	7	14.73	79.33	7.6	33.52	8.0	24.9	1.19
I24	22 Oct 2019	8	14.69	78.93	7.4	33.52	8.0	24.9	1.20
I24	22 Oct 2019	9	14.51	77.45	7.1	33.53	8.0	24.9	1.22
I24	22 Oct 2019	10	14.26	62.10	6.6	33.54	8.0	25.0	1.34
I24	29 Oct 2019	1	17.70	76.27	8.6	33.57	8.2	24.2	1.33
I24	29 Oct 2019	2	17.59	75.01	8.6	33.57	8.2	24.3	1.74
I24	29 Oct 2019	3	17.54	74.38	8.6	33.57	8.2	24.3	2.27
I24	29 Oct 2019	4	17.52	74.09	8.6	33.57	8.2	24.3	2.87
I24	29 Oct 2019	5	17.51	74.45	8.5	33.57	8.2	24.3	3.16
I24	29 Oct 2019	6	17.50	74.49	8.4	33.57	8.2	24.3	3.20
I24	29 Oct 2019	7	17.49	74.53	8.4	33.57	8.2	24.3	3.13
I24	29 Oct 2019	8	17.48	74.44	8.4	33.57	8.2	24.3	2.93
I24	29 Oct 2019	9	17.47	74.03	8.3	33.57	8.2	24.3	2.71
I24	29 Oct 2019	10	17.47	73.67	8.3	33.57	8.2	24.3	2.67
I24	29 Oct 2019	11	17.46	73.41	8.3	33.57	8.2	24.3	2.60
I25	09 Oct 2019	1	19.71	78.76	8.3	33.64	8.2	23.8	0.90
I25	09 Oct 2019	2	19.61	78.56	8.3	33.65	8.2	23.8	0.96
I25	09 Oct 2019	3	18.87	73.71	8.8	33.65	8.2	24.0	1.88
I25	09 Oct 2019	4	18.57	67.03	8.9	33.58	8.2	24.0	3.60
I25	09 Oct 2019	5	17.97	64.65	9.0	33.57	8.2	24.2	4.88
I25	09 Oct 2019	6	17.78	65.51	9.0	33.55	8.2	24.2	5.49
I25	09 Oct 2019	7	17.46	67.88	8.6	33.55	8.2	24.3	5.09
I25	09 Oct 2019	8	16.39	71.63	8.3	33.58	8.2	24.6	3.73
I25	09 Oct 2019	9	16.24	73.62	8.3	33.53	8.1	24.6	2.98
I25	15 Oct 2019	1	17.86	69.61	8.3	33.57	8.1	24.2	1.47
I25	15 Oct 2019	2	17.83	70.03	8.3	33.57	8.1	24.2	1.47
I25	15 Oct 2019	3	17.78	70.22	8.3	33.56	8.1	24.2	1.61
I25	15 Oct 2019	4	17.59	71.25	8.2	33.57	8.1	24.3	1.84
I25	15 Oct 2019	5	17.36	70.48	8.3	33.56	8.1	24.3	2.35
I25	15 Oct 2019	6	17.06	70.89	8.2	33.55	8.1	24.4	2.68
I25	15 Oct 2019	7	15.98	72.25	7.7	33.58	8.1	24.7	2.90
I25	15 Oct 2019	8	15.27	74.67	7.3	33.52	8.1	24.8	3.03
I25	15 Oct 2019	9	15.04	76.12	7.2	33.51	8.0	24.8	2.76
I25	22 Oct 2019	1	17.74	71.49	8.1	33.59	8.1	24.3	0.81
I25	22 Oct 2019	2	17.15	73.74	8.2	33.62	8.1	24.4	0.82
I25	22 Oct 2019	3	16.51	78.16	8.4	33.56	8.1	24.5	0.75
I25	22 Oct 2019	4	16.03	80.34	8.3	33.56	8.1	24.6	0.72
I25	22 Oct 2019	5	15.01	80.23	7.9	33.59	8.1	24.9	0.83
I25	22 Oct 2019	6	14.32	79.14	7.6	33.55	8.0	25.0	1.11
I25	22 Oct 2019	7	14.24	79.24	7.5	33.52	8.0	25.0	1.32
I25	22 Oct 2019	8	14.18	79.35	7.5	33.52	8.0	25.0	1.49

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I25	22 Oct 2019	9	14.19	79.48	7.5	33.51	8.0	25.0	1.58
I25	29 Oct 2019	1	17.73	76.70	8.6	33.57	8.2	24.2	1.45
I25	29 Oct 2019	2	17.58	76.17	8.6	33.58	8.2	24.3	1.68
I25	29 Oct 2019	3	17.54	74.51	8.6	33.57	8.2	24.3	2.25
I25	29 Oct 2019	4	17.51	73.89	8.6	33.57	8.2	24.3	2.78
I25	29 Oct 2019	5	17.49	73.89	8.5	33.57	8.2	24.3	3.25
I25	29 Oct 2019	6	17.47	74.12	8.5	33.57	8.2	24.3	3.37
I25	29 Oct 2019	7	17.47	74.23	8.4	33.57	8.2	24.3	3.36
I25	29 Oct 2019	8	17.46	74.32	8.4	33.57	8.2	24.3	3.25
I25	29 Oct 2019	9	17.46	74.69	8.3	33.58	8.2	24.3	3.16
I26	09 Oct 2019	1	19.56	77.57	8.5	33.64	8.2	23.8	0.98
I26	09 Oct 2019	2	19.45	77.36	8.6	33.64	8.2	23.9	1.32
I26	09 Oct 2019	3	18.66	67.82	9.2	33.57	8.2	24.0	3.72
I26	09 Oct 2019	4	18.48	59.57	9.3	33.52	8.2	24.0	5.93
I26	09 Oct 2019	5	18.38	59.13	9.2	33.52	8.2	24.0	6.67
I26	09 Oct 2019	6	18.28	60.14	8.8	33.53	8.2	24.1	6.68
I26	09 Oct 2019	7	17.30	65.35	8.2	33.60	8.2	24.4	5.07
I26	09 Oct 2019	8	16.26	70.96	7.9	33.58	8.1	24.6	3.85
I26	09 Oct 2019	9	15.77	73.62	7.9	33.54	8.1	24.7	2.94
I26	15 Oct 2019	1	18.00	69.36	8.4	33.57	8.1	24.2	1.51
I26	15 Oct 2019	2	17.93	69.77	8.4	33.58	8.1	24.2	1.57
I26	15 Oct 2019	3	17.57	70.05	8.5	33.58	8.2	24.3	1.80
I26	15 Oct 2019	4	17.46	70.89	8.6	33.56	8.2	24.3	2.18
I26	15 Oct 2019	5	17.31	72.02	8.6	33.56	8.2	24.3	2.51
I26	15 Oct 2019	6	16.69	72.56	8.5	33.56	8.2	24.5	2.84
I26	15 Oct 2019	7	16.12	74.18	8.2	33.54	8.1	24.6	2.81
I26	15 Oct 2019	8	15.47	75.32	7.6	33.52	8.1	24.7	2.88
I26	15 Oct 2019	9	15.04	74.51	7.1	33.52	8.1	24.8	3.72
I26	22 Oct 2019	1	17.61	70.90	8.1	33.60	8.1	24.3	1.09
I26	22 Oct 2019	2	16.99	70.82	7.9	33.64	8.1	24.5	1.13
I26	22 Oct 2019	3	15.49	74.94	7.9	33.60	8.1	24.8	1.11
I26	22 Oct 2019	4	14.70	77.80	7.6	33.56	8.1	24.9	1.26
I26	22 Oct 2019	5	14.27	76.41	7.3	33.54	8.0	25.0	1.66
I26	22 Oct 2019	6	14.18	76.88	7.1	33.52	8.0	25.0	1.75
I26	22 Oct 2019	7	14.17	77.30	7.1	33.52	8.0	25.0	1.81
I26	22 Oct 2019	8	14.17	77.42	7.1	33.52	8.0	25.0	1.90
I26	22 Oct 2019	9	14.17	77.44	7.0	33.52	8.0	25.0	2.00
I26	29 Oct 2019	1	17.73	75.52	8.5	33.58	8.2	24.3	1.27
I26	29 Oct 2019	2	17.55	74.93	8.5	33.59	8.2	24.3	1.72
I26	29 Oct 2019	3	17.50	73.07	8.5	33.58	8.2	24.3	2.31
I26	29 Oct 2019	4	17.48	72.79	8.5	33.58	8.2	24.3	2.79
I26	29 Oct 2019	5	17.46	72.95	8.5	33.58	8.2	24.3	3.21
I26	29 Oct 2019	6	17.47	73.11	8.5	33.58	8.2	24.3	3.49
I26	29 Oct 2019	7	17.45	73.32	8.4	33.58	8.2	24.3	3.56
I26	29 Oct 2019	8	17.45	73.83	8.4	33.58	8.2	24.3	3.45
I26	29 Oct 2019	9	17.44	74.02	8.4	33.58	8.2	24.3	3.28
I32	09 Oct 2019	1	18.56	62.67	9.0	33.53	8.2	24.0	2.26
I32	09 Oct 2019	2	18.38	62.65	8.8	33.55	8.2	24.1	2.50
I32	09 Oct 2019	3	17.56	63.24	8.3	33.58	8.2	24.3	3.18
I32	09 Oct 2019	4	16.97	63.92	7.8	33.56	8.1	24.4	3.98
I32	09 Oct 2019	5	16.66	64.32	7.3	33.55	8.1	24.5	4.76
I32	09 Oct 2019	6	16.32	65.33	7.0	33.54	8.1	24.6	5.06
I32	09 Oct 2019	7	16.23	68.59	6.9	33.53	8.0	24.6	5.00
I32	09 Oct 2019	8	15.91	70.87	6.6	33.55	8.0	24.6	4.42
I32	09 Oct 2019	9	15.55	71.03	6.2	33.54	8.0	24.7	3.59

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I32	09 Oct 2019	10	15.54	67.78	6.1	33.53	8.0	24.7	3.08
I32	15 Oct 2019	1	16.85	72.77	7.7	33.53	8.1	24.4	1.09
I32	15 Oct 2019	2	16.74	73.00	7.5	33.55	8.1	24.5	1.12
I32	15 Oct 2019	3	16.00	72.29	7.3	33.57	8.1	24.7	1.37
I32	15 Oct 2019	4	15.56	69.67	7.2	33.52	8.0	24.7	1.99
I32	15 Oct 2019	5	15.41	69.75	7.0	33.51	8.0	24.7	2.47
I32	15 Oct 2019	6	15.34	70.59	6.9	33.50	8.0	24.7	2.85
I32	15 Oct 2019	7	15.29	71.07	6.8	33.51	8.0	24.8	3.02
I32	15 Oct 2019	8	15.20	72.03	6.7	33.50	8.0	24.8	3.35
I32	15 Oct 2019	9	15.18	72.04	6.7	33.51	8.0	24.8	3.53
I32	15 Oct 2019	10	15.18	70.97	6.7	33.51	8.0	24.8	3.57
I32	22 Oct 2019	1	17.49	71.47	8.0	33.57	8.1	24.3	0.99
I32	22 Oct 2019	2	17.46	72.18	7.8	33.65	8.1	24.4	0.92
I32	22 Oct 2019	3	16.74	70.10	7.8	33.65	8.1	24.5	0.99
I32	22 Oct 2019	4	15.85	69.68	7.5	33.65	8.1	24.7	1.33
I32	22 Oct 2019	5	15.56	64.43	7.2	33.59	8.0	24.8	1.96
I32	22 Oct 2019	6	15.00	59.76	6.9	33.62	8.0	24.9	2.78
I32	22 Oct 2019	7	14.66	64.93	6.7	33.57	8.0	24.9	3.16
I32	22 Oct 2019	8	14.60	63.86	6.6	33.54	8.0	24.9	3.39
I32	22 Oct 2019	9	14.55	62.70	6.5	33.54	8.0	24.9	3.31
I32	22 Oct 2019	10	14.53	48.46	6.4	33.53	8.0	24.9	3.22
I32	29 Oct 2019	1	17.46	74.61	8.2	33.56	8.1	24.3	1.20
I32	29 Oct 2019	2	17.29	73.78	8.2	33.57	8.1	24.4	1.36
I32	29 Oct 2019	3	17.18	72.14	8.2	33.56	8.1	24.4	2.01
I32	29 Oct 2019	4	17.15	71.57	8.2	33.56	8.1	24.4	2.69
I32	29 Oct 2019	5	17.14	71.88	8.2	33.56	8.1	24.4	3.08
I32	29 Oct 2019	6	17.13	72.08	8.1	33.56	8.1	24.4	3.27
I32	29 Oct 2019	7	17.11	72.31	8.2	33.56	8.1	24.4	3.44
I32	29 Oct 2019	8	17.11	72.29	8.2	33.56	8.1	24.4	3.58
I32	29 Oct 2019	9	17.11	72.22	8.2	33.56	8.1	24.4	3.65
I32	29 Oct 2019	10	17.10	72.24	8.2	33.56	8.1	24.4	3.64
I39	09 Oct 2019	1	19.61	79.52	8.4	33.65	8.2	23.8	0.69
I39	09 Oct 2019	2	19.45	79.35	8.4	33.65	8.2	23.9	0.74
I39	09 Oct 2019	3	19.16	79.14	8.5	33.65	8.2	23.9	0.82
I39	09 Oct 2019	4	18.73	79.24	8.5	33.63	8.2	24.0	0.95
I39	09 Oct 2019	5	18.05	79.27	8.6	33.62	8.2	24.2	1.08
I39	09 Oct 2019	6	17.63	79.52	8.7	33.58	8.2	24.3	1.17
I39	09 Oct 2019	7	17.06	78.61	8.5	33.58	8.2	24.4	1.33
I39	09 Oct 2019	8	16.70	75.44	8.4	33.53	8.2	24.5	1.70
I39	09 Oct 2019	9	16.56	74.68	8.4	33.54	8.2	24.5	2.07
I39	09 Oct 2019	10	16.20	75.26	8.2	33.54	8.2	24.6	2.45
I39	09 Oct 2019	11	15.55	76.08	8.1	33.54	8.1	24.7	2.74
I39	09 Oct 2019	12	15.31	76.86	8.0	33.51	8.1	24.8	2.88
I39	09 Oct 2019	13	15.23	76.90	8.0	33.51	8.1	24.8	3.06
I39	09 Oct 2019	14	15.15	77.36	7.9	33.51	8.1	24.8	3.07
I39	09 Oct 2019	15	14.95	77.40	7.8	33.52	8.1	24.8	3.50
I39	09 Oct 2019	16	14.84	77.09	7.7	33.52	8.1	24.9	3.87
I39	09 Oct 2019	17	14.66	77.22	7.6	33.52	8.1	24.9	3.78
I39	09 Oct 2019	18	14.64	78.17	7.6	33.51	8.1	24.9	3.15
I39	15 Oct 2019	1	18.52	74.29	8.7	33.59	8.2	24.1	0.94
I39	15 Oct 2019	2	18.40	74.39	8.7	33.60	8.2	24.1	0.99
I39	15 Oct 2019	3	18.30	73.81	8.8	33.60	8.2	24.1	1.26
I39	15 Oct 2019	4	18.26	73.36	8.8	33.59	8.2	24.1	1.58
I39	15 Oct 2019	5	18.24	73.42	8.7	33.59	8.2	24.1	1.96
I39	15 Oct 2019	6	18.20	73.57	8.7	33.59	8.2	24.1	2.27
I39	15 Oct 2019	7	18.17	73.86	8.7	33.59	8.2	24.2	2.48

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I39	15 Oct 2019	8	18.14	74.38	8.7	33.59	8.2	24.2	2.59
I39	15 Oct 2019	9	18.07	74.90	8.6	33.60	8.2	24.2	2.67
I39	15 Oct 2019	10	17.88	75.49	8.3	33.60	8.2	24.2	2.63
I39	15 Oct 2019	11	16.52	76.41	8.3	33.67	8.2	24.6	2.65
I39	15 Oct 2019	12	15.77	78.04	8.4	33.53	8.1	24.7	2.62
I39	15 Oct 2019	13	15.71	78.36	8.4	33.51	8.1	24.7	2.66
I39	15 Oct 2019	14	15.67	78.54	8.4	33.51	8.1	24.7	2.64
I39	15 Oct 2019	15	15.65	78.63	8.4	33.51	8.1	24.7	2.68
I39	15 Oct 2019	16	15.62	78.51	8.3	33.51	8.1	24.7	2.66
I39	15 Oct 2019	17	15.42	78.51	7.9	33.53	8.1	24.7	2.63
I39	15 Oct 2019	18	14.76	79.18	7.5	33.55	8.1	24.9	2.45
I39	22 Oct 2019	1	17.83	78.46	8.4	33.60	8.1	24.2	0.68
I39	22 Oct 2019	2	17.69	79.03	8.3	33.61	8.1	24.3	0.70
I39	22 Oct 2019	3	17.54	78.74	8.4	33.60	8.1	24.3	0.79
I39	22 Oct 2019	4	17.49	78.70	8.4	33.60	8.1	24.3	0.90
I39	22 Oct 2019	5	17.40	78.31	8.3	33.59	8.1	24.3	1.07
I39	22 Oct 2019	6	17.35	77.53	8.3	33.59	8.1	24.4	1.37
I39	22 Oct 2019	7	17.30	76.68	8.3	33.59	8.1	24.4	1.67
I39	22 Oct 2019	8	17.27	76.43	8.3	33.59	8.1	24.4	1.81
I39	22 Oct 2019	9	17.25	76.49	8.3	33.59	8.1	24.4	1.85
I39	22 Oct 2019	10	17.17	76.59	8.2	33.59	8.1	24.4	1.83
I39	22 Oct 2019	11	16.75	76.87	8.2	33.59	8.1	24.5	1.86
I39	22 Oct 2019	12	16.12	77.51	8.2	33.58	8.1	24.6	1.86
I39	22 Oct 2019	13	15.15	80.28	8.3	33.55	8.1	24.8	1.79
I39	22 Oct 2019	14	14.72	81.65	8.3	33.51	8.1	24.9	1.75
I39	22 Oct 2019	15	14.46	82.60	8.3	33.49	8.1	24.9	1.86
I39	22 Oct 2019	16	14.37	83.10	8.2	33.50	8.1	24.9	1.94
I39	22 Oct 2019	17	14.09	83.14	7.8	33.52	8.1	25.0	2.53
I39	22 Oct 2019	18	13.63	80.48	7.0	33.55	8.0	25.1	3.12
I39	29 Oct 2019	1	17.61	79.17	8.5	33.59	8.2	24.3	1.48
I39	29 Oct 2019	2	17.59	79.12	8.6	33.60	8.2	24.3	1.47
I39	29 Oct 2019	3	17.56	78.62	8.6	33.59	8.2	24.3	1.53
I39	29 Oct 2019	4	17.56	78.56	8.6	33.59	8.2	24.3	1.74
I39	29 Oct 2019	5	17.56	78.56	8.6	33.59	8.2	24.3	1.98
I39	29 Oct 2019	6	17.56	78.63	8.6	33.59	8.2	24.3	2.24
I39	29 Oct 2019	7	17.55	78.66	8.6	33.59	8.2	24.3	2.42
I39	29 Oct 2019	8	17.55	78.59	8.6	33.59	8.2	24.3	2.56
I39	29 Oct 2019	9	17.55	78.64	8.6	33.59	8.2	24.3	2.67
I39	29 Oct 2019	10	17.54	78.66	8.6	33.59	8.2	24.3	2.56
I39	29 Oct 2019	11	17.53	78.51	8.6	33.59	8.2	24.3	2.82
I39	29 Oct 2019	12	17.51	78.44	8.5	33.59	8.2	24.3	2.89
I39	29 Oct 2019	13	17.48	78.47	8.5	33.59	8.2	24.3	2.90
I39	29 Oct 2019	14	17.45	78.22	8.4	33.59	8.2	24.3	2.94
I39	29 Oct 2019	15	17.43	78.12	8.4	33.59	8.2	24.3	2.86
I39	29 Oct 2019	16	17.42	78.06	8.3	33.58	8.2	24.3	2.82
I39	29 Oct 2019	17	17.41	78.04	8.3	33.58	8.2	24.3	2.74
I39	29 Oct 2019	18	17.40	78.10	8.3	33.58	8.2	24.3	2.64
I40	09 Oct 2019	1	18.19	68.34	8.7	33.54	8.2	24.1	1.71
I40	09 Oct 2019	2	17.62	68.22	8.4	33.60	8.2	24.3	1.78
I40	09 Oct 2019	3	16.63	70.25	8.2	33.56	8.1	24.5	1.91
I40	09 Oct 2019	4	16.43	69.74	8.0	33.54	8.1	24.5	2.22
I40	09 Oct 2019	5	16.32	67.67	7.7	33.53	8.1	24.5	2.85
I40	09 Oct 2019	6	16.07	64.68	7.5	33.54	8.1	24.6	3.36
I40	09 Oct 2019	7	15.87	64.83	7.5	33.54	8.1	24.7	3.85
I40	09 Oct 2019	8	15.72	68.02	7.4	33.53	8.1	24.7	4.29
I40	09 Oct 2019	9	15.52	69.76	7.4	33.53	8.1	24.7	4.38
I40	09 Oct 2019	10	15.38	66.08	7.2	33.53	8.1	24.8	3.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I40	15 Oct 2019	1	18.00	67.12	7.6	33.56	8.1	24.2	1.16
I40	15 Oct 2019	2	17.62	66.04	7.7	33.58	8.1	24.3	1.39
I40	15 Oct 2019	3	17.32	66.16	7.8	33.56	8.1	24.3	2.12
I40	15 Oct 2019	4	16.86	68.01	7.9	33.57	8.1	24.4	2.99
I40	15 Oct 2019	5	16.48	68.89	7.8	33.55	8.1	24.5	3.69
I40	15 Oct 2019	6	15.84	70.57	7.5	33.55	8.1	24.7	4.14
I40	15 Oct 2019	7	15.65	73.06	7.4	33.51	8.1	24.7	4.30
I40	15 Oct 2019	8	15.36	72.91	7.2	33.53	8.1	24.8	4.31
I40	15 Oct 2019	9	15.14	71.06	6.9	33.52	8.0	24.8	3.65
I40	15 Oct 2019	10	15.00	67.93	6.8	33.51	8.0	24.8	3.07
I40	22 Oct 2019	1	16.88	69.48	7.7	33.58	8.0	24.5	0.87
I40	22 Oct 2019	2	16.54	69.31	7.5	33.59	8.0	24.5	0.92
I40	22 Oct 2019	3	15.90	71.01	7.5	33.60	8.0	24.7	1.15
I40	22 Oct 2019	4	15.29	76.03	7.4	33.55	8.0	24.8	1.32
I40	22 Oct 2019	5	15.02	77.03	7.3	33.53	8.0	24.8	1.45
I40	22 Oct 2019	6	14.67	77.68	7.2	33.55	8.0	24.9	1.72
I40	22 Oct 2019	7	14.44	75.04	7.0	33.54	8.0	25.0	2.14
I40	22 Oct 2019	8	14.22	71.66	6.8	33.54	8.0	25.0	3.26
I40	22 Oct 2019	9	14.13	65.52	6.5	33.53	8.0	25.0	3.10
I40	22 Oct 2019	10	14.10	57.50	6.4	33.53	8.0	25.0	2.66
I40	29 Oct 2019	1	17.73	74.93	8.5	33.58	8.2	24.3	1.62
I40	29 Oct 2019	2	17.69	74.85	8.6	33.58	8.2	24.3	1.86
I40	29 Oct 2019	3	17.69	75.00	8.6	33.58	8.2	24.3	1.98
I40	29 Oct 2019	4	17.70	75.11	8.6	33.58	8.2	24.3	2.09
I40	29 Oct 2019	5	17.68	75.09	8.6	33.58	8.2	24.3	2.25
I40	29 Oct 2019	6	17.64	74.81	8.5	33.58	8.2	24.3	2.92
I40	29 Oct 2019	7	17.64	75.03	8.5	33.58	8.2	24.3	3.28
I40	29 Oct 2019	8	17.63	75.24	8.5	33.58	8.2	24.3	3.52
I40	29 Oct 2019	9	17.61	75.01	8.5	33.58	8.2	24.3	3.31
I40	29 Oct 2019	10	17.57	73.87	8.4	33.58	8.2	24.3	3.12

NA = not available

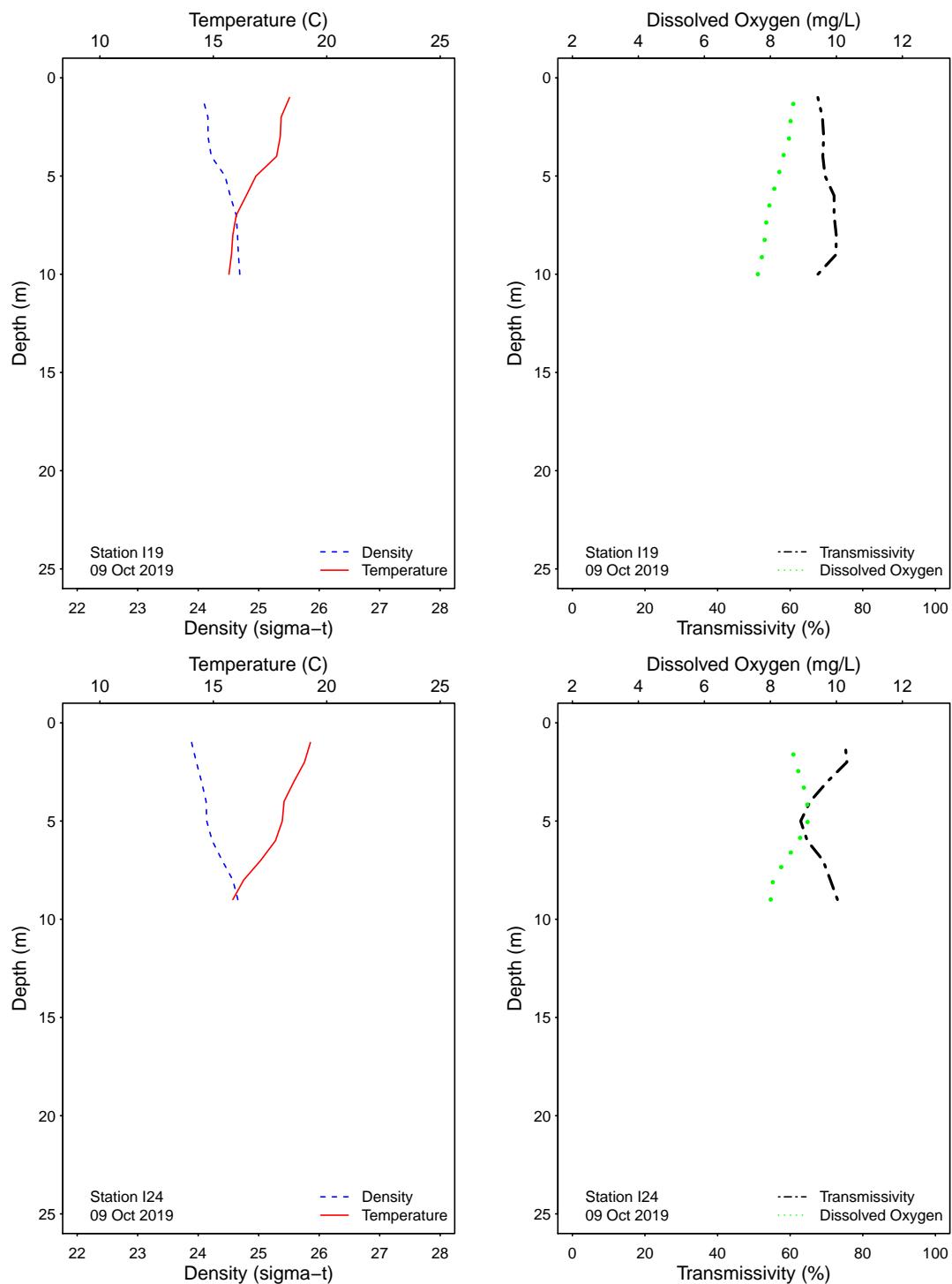


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

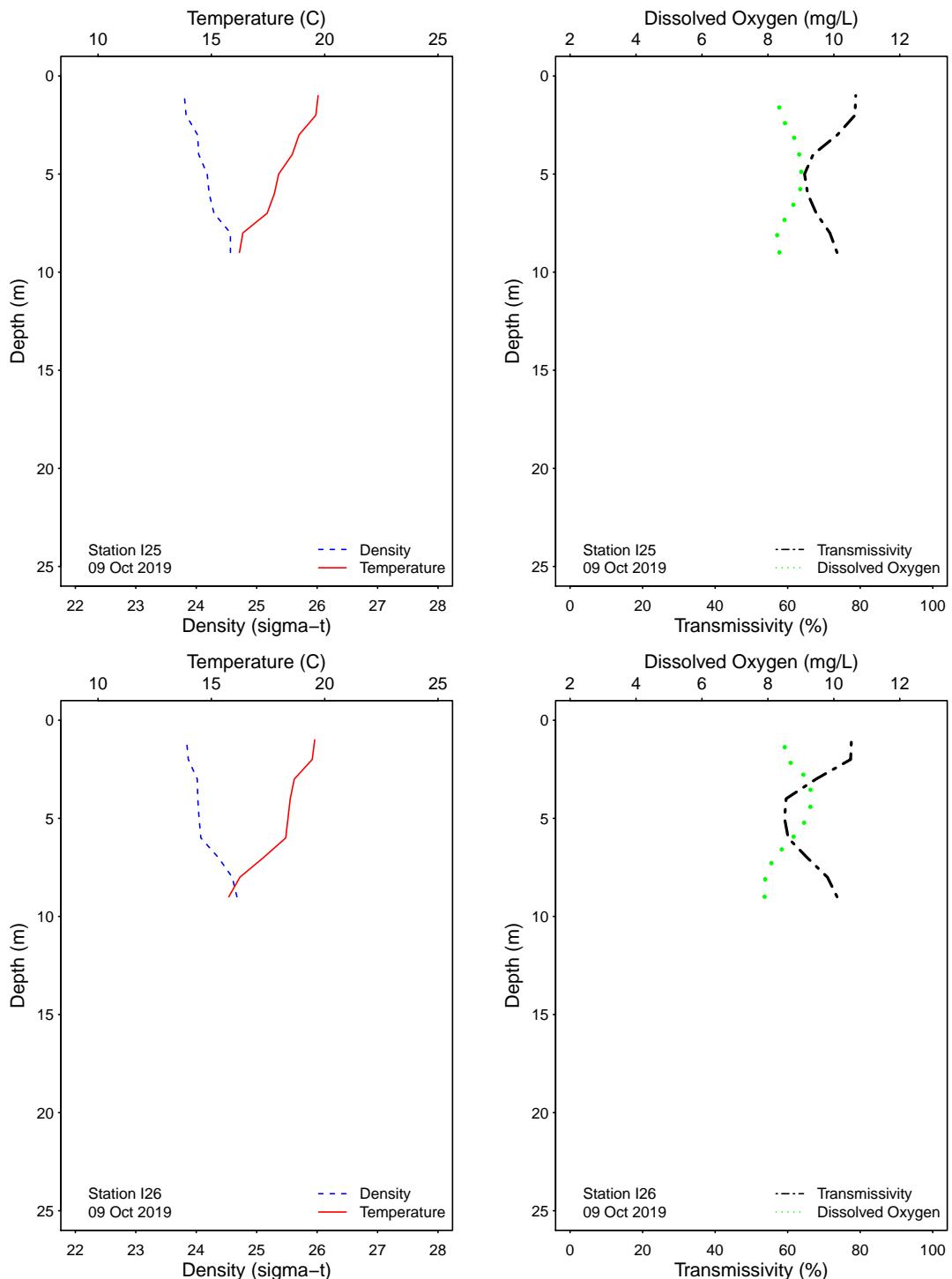


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

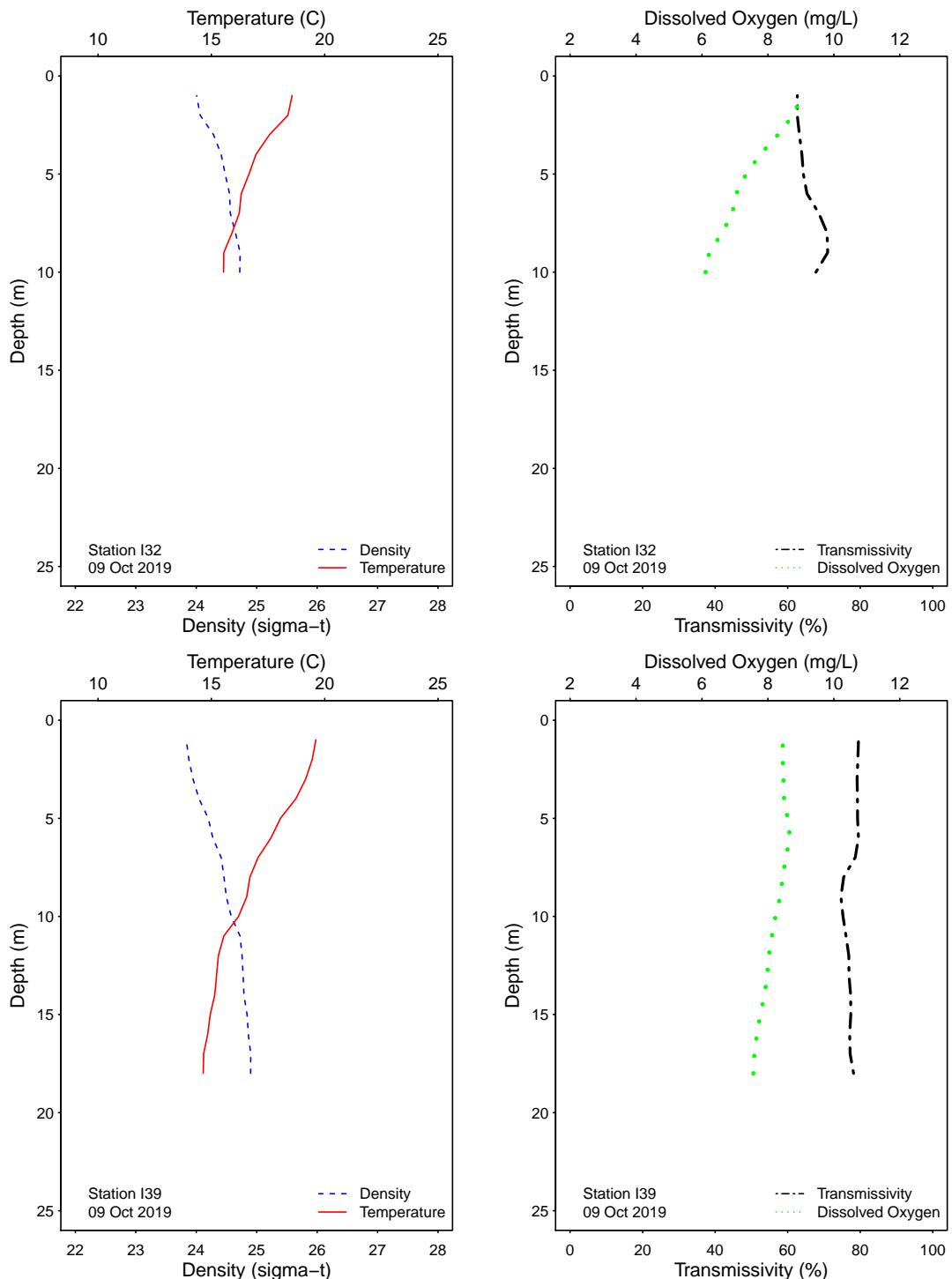


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

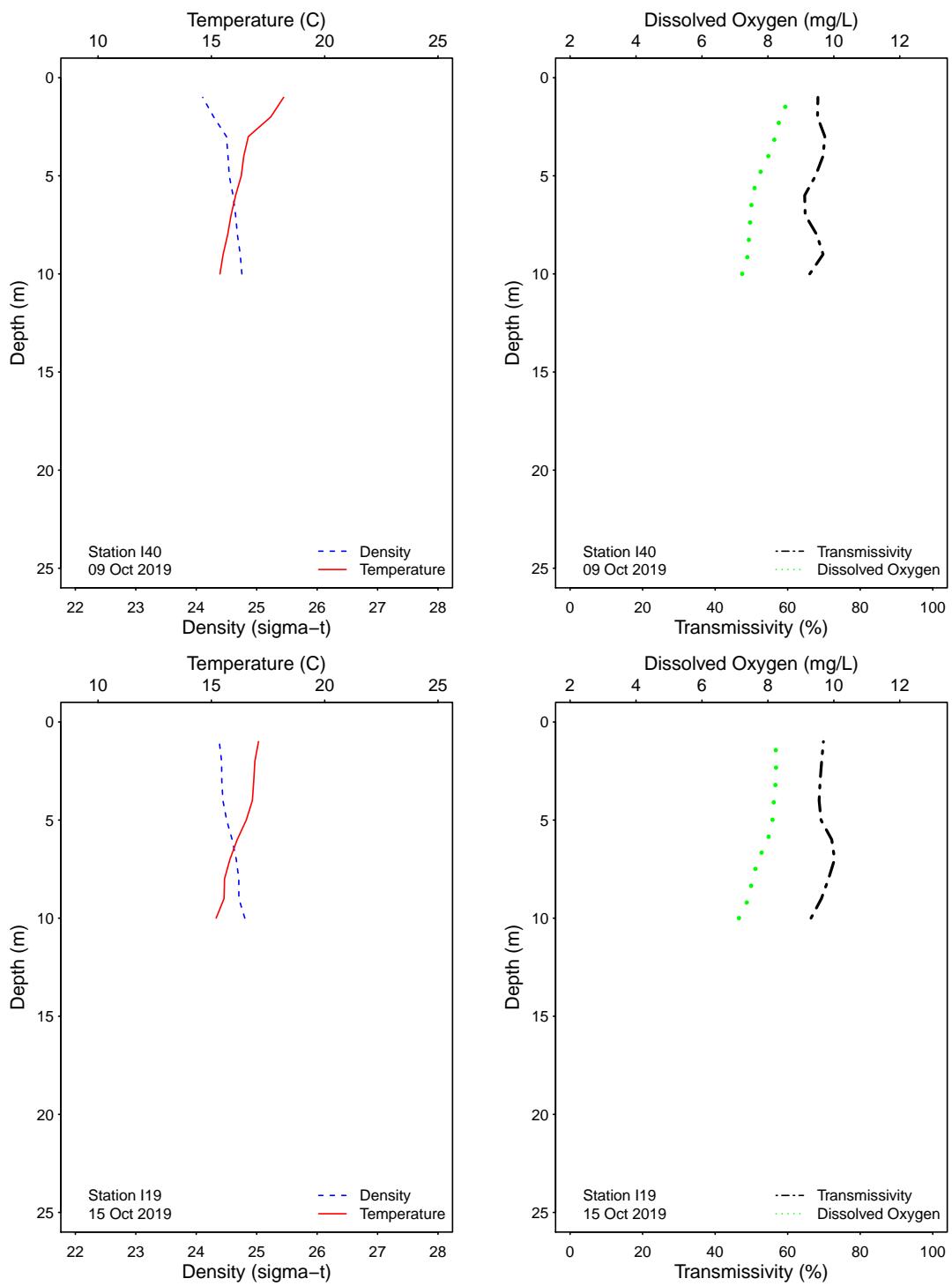


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

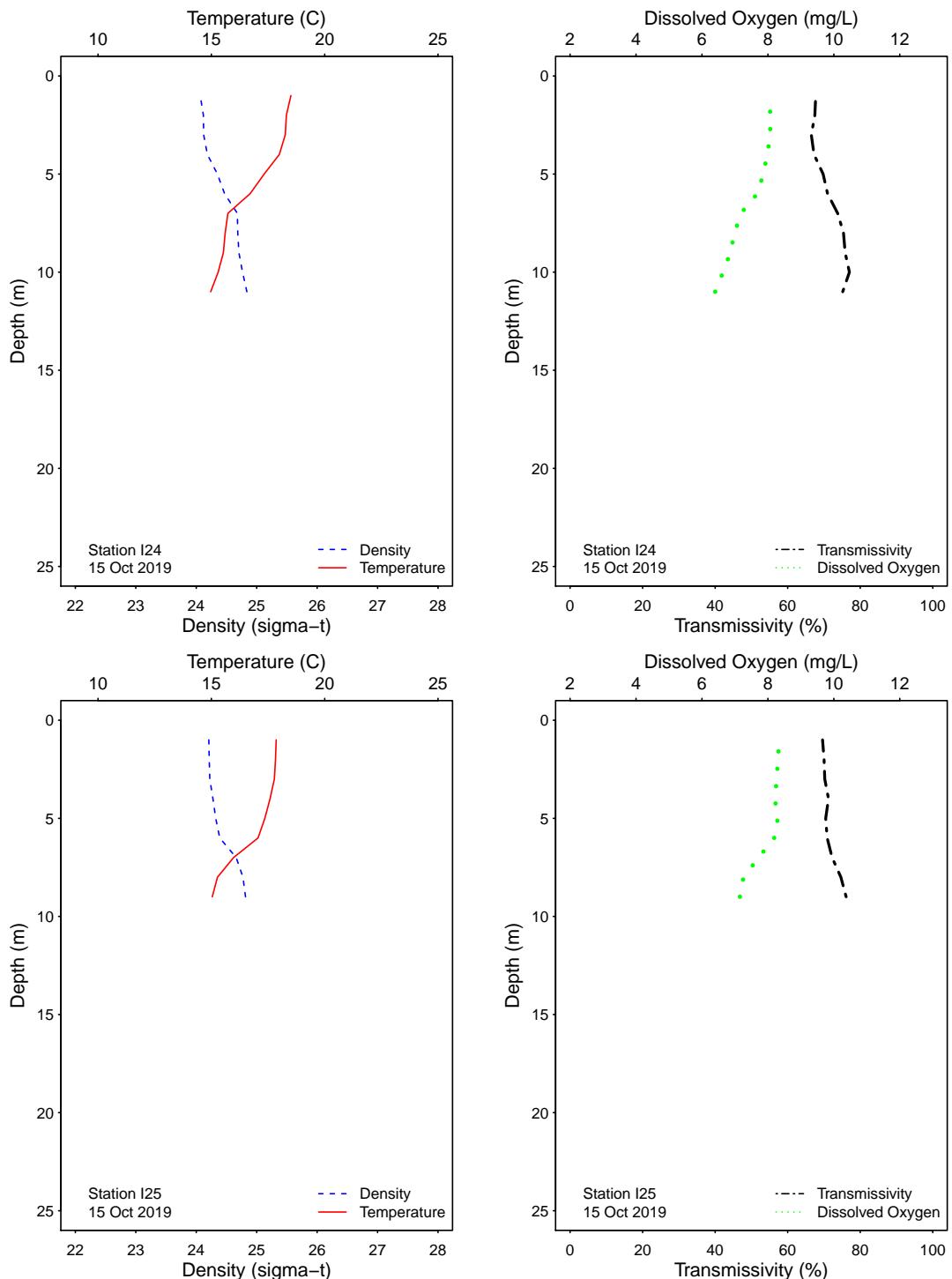


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

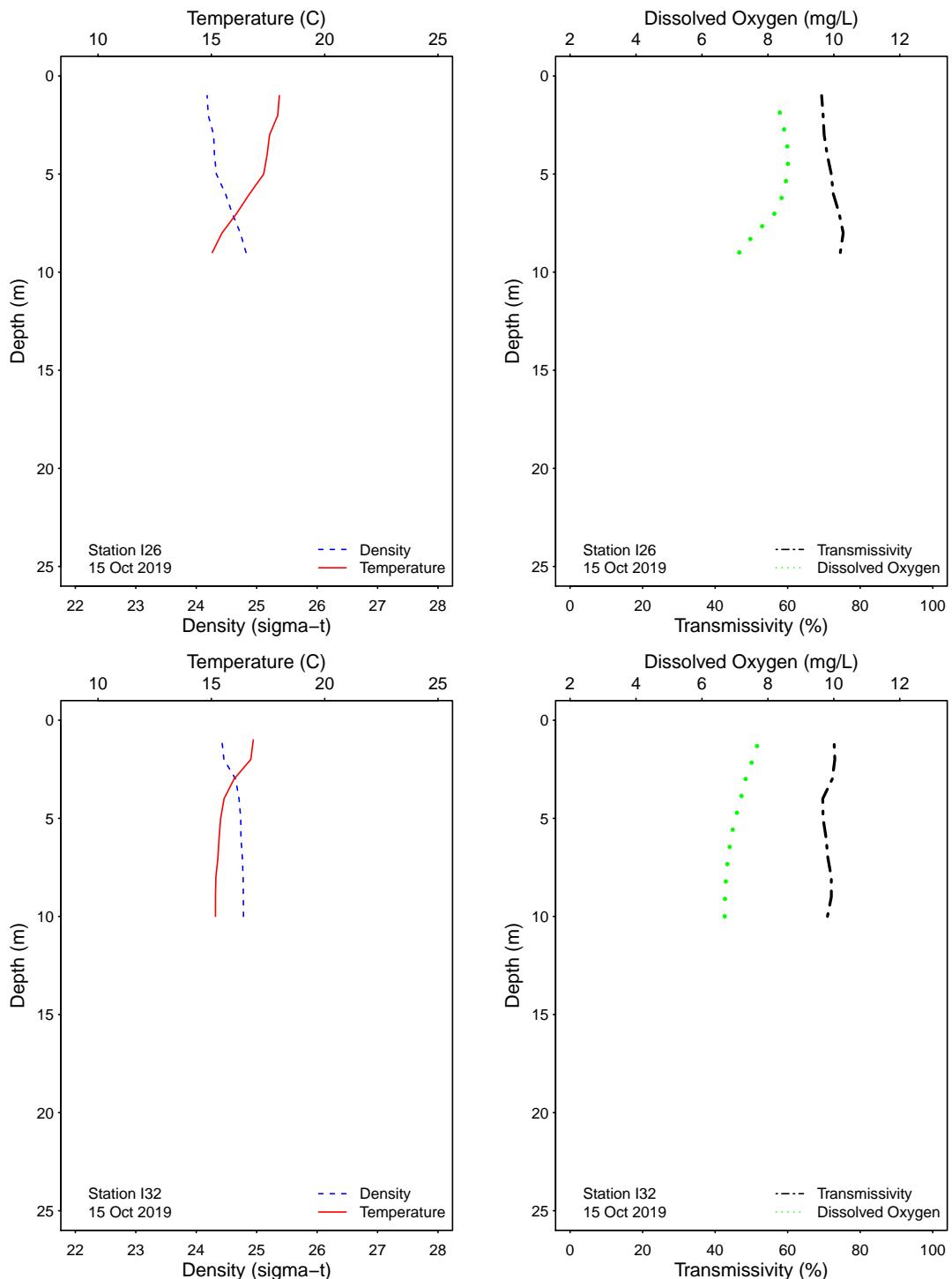


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

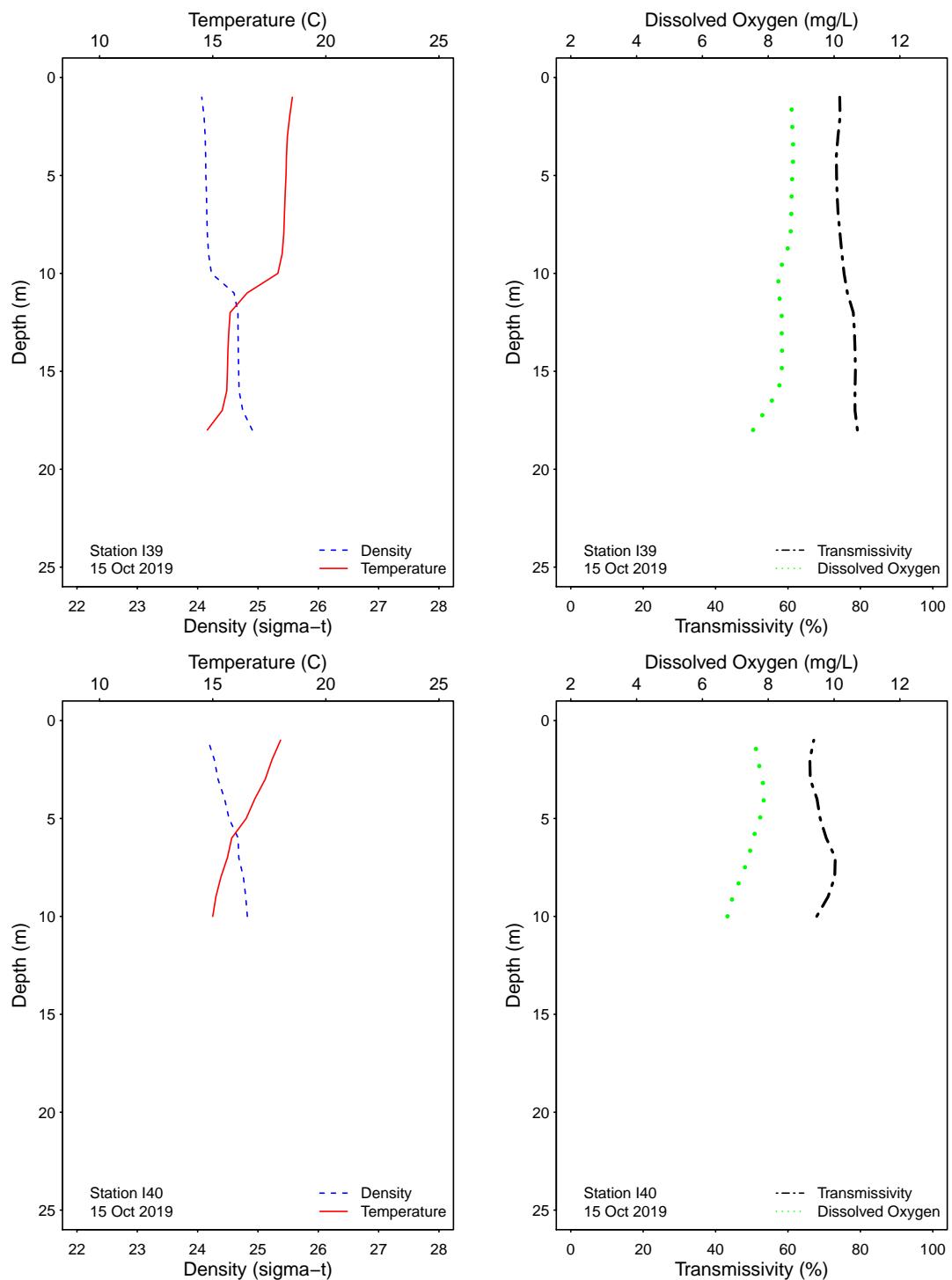


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

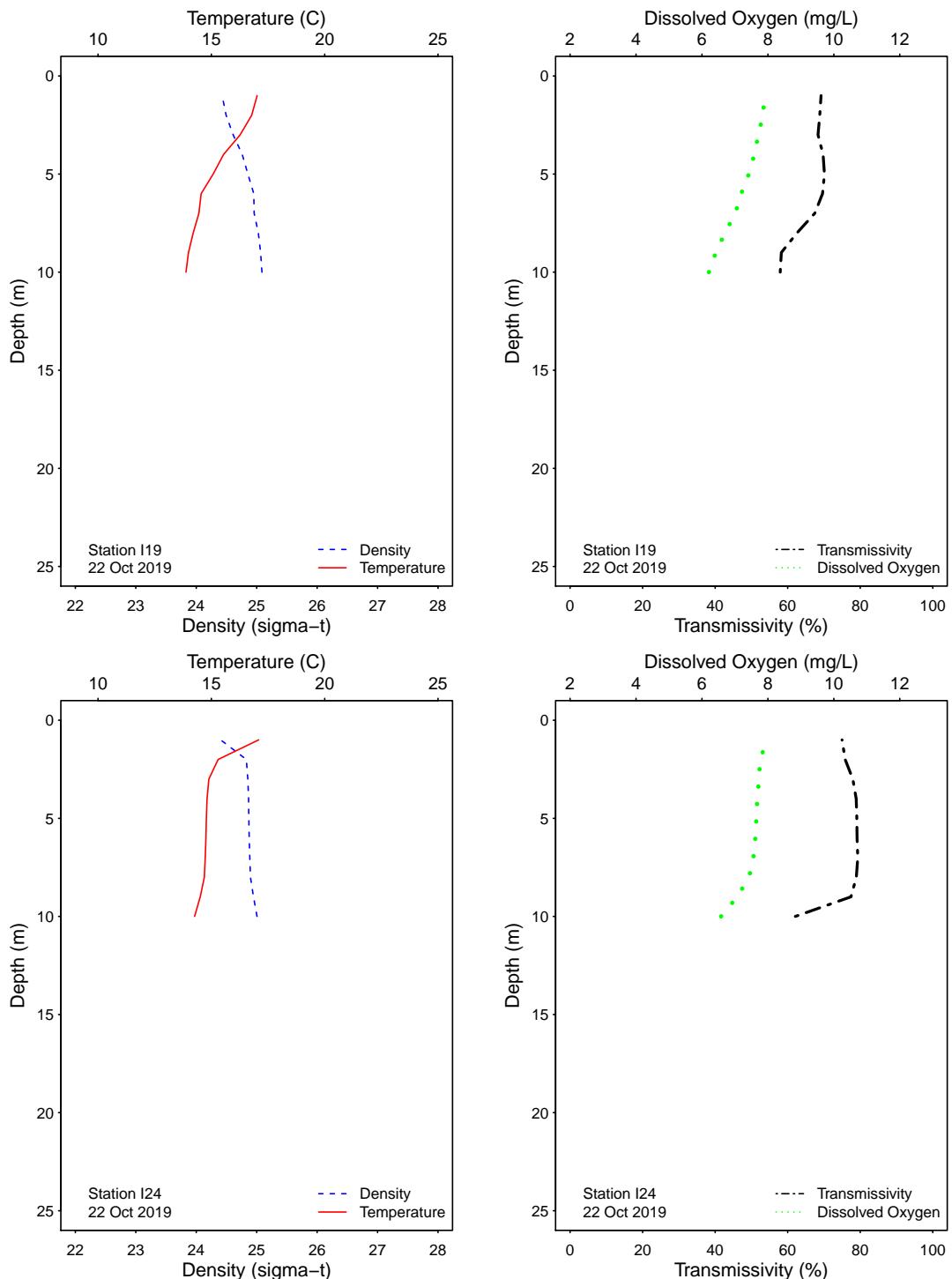


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

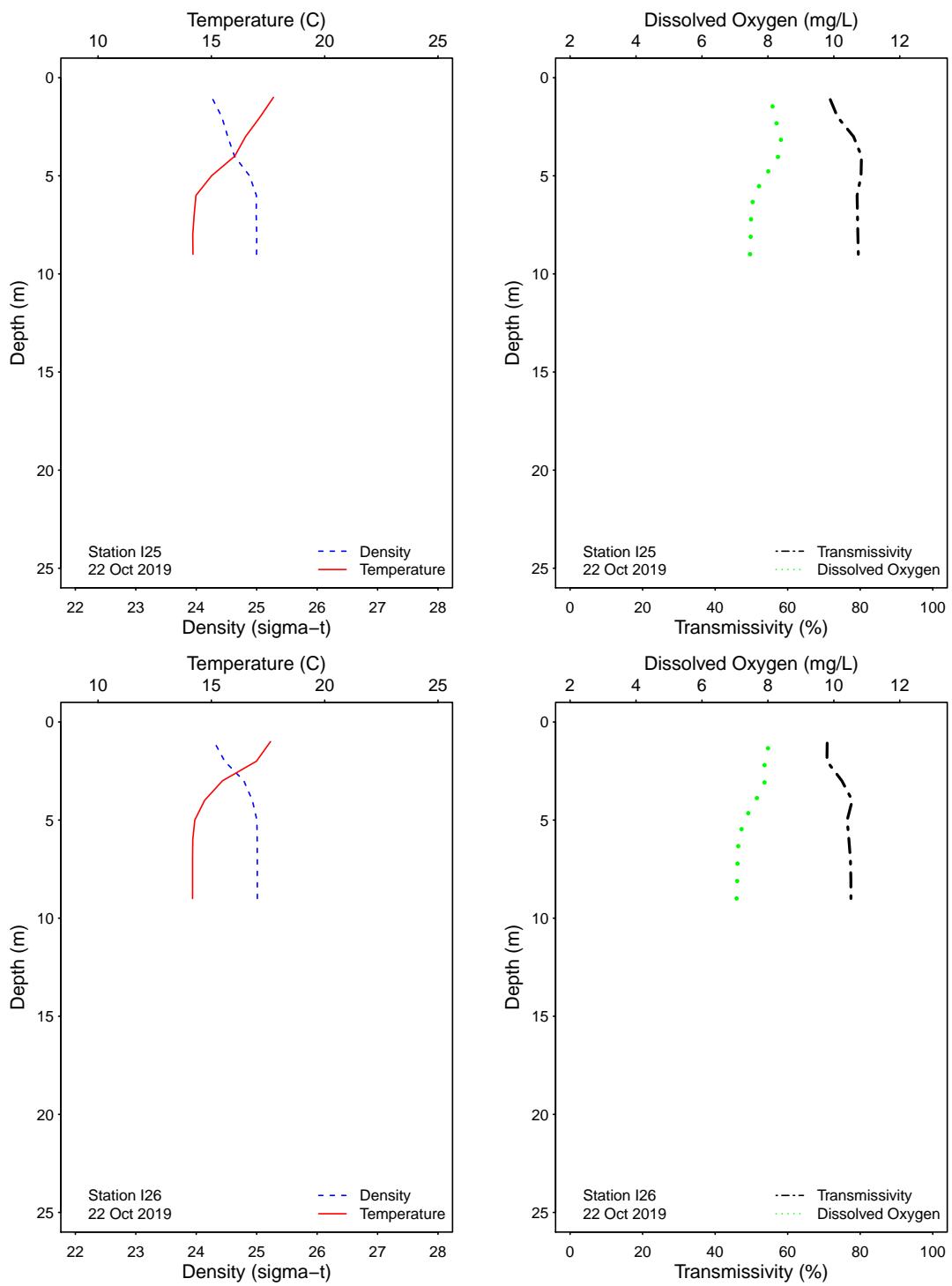


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

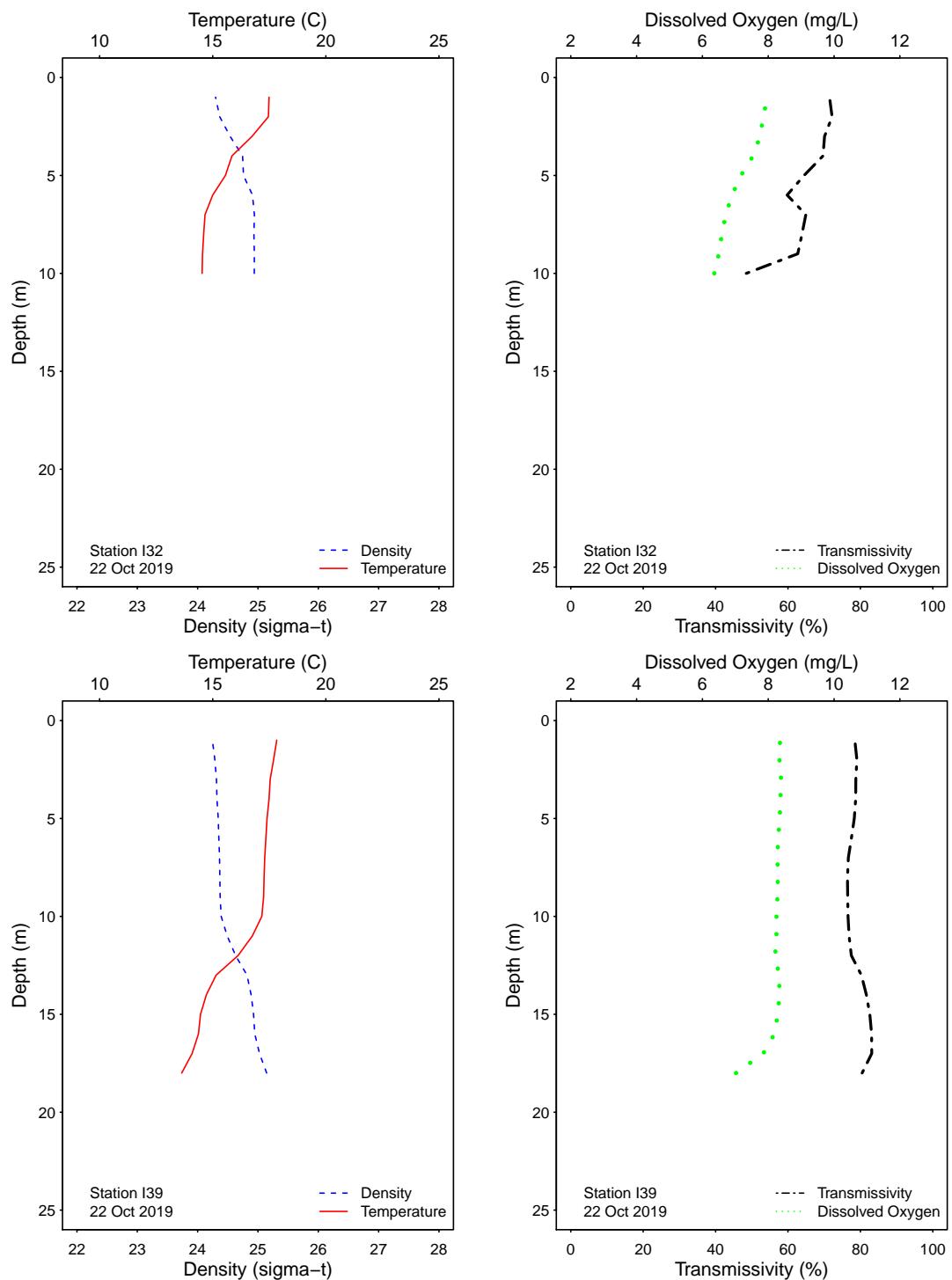


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

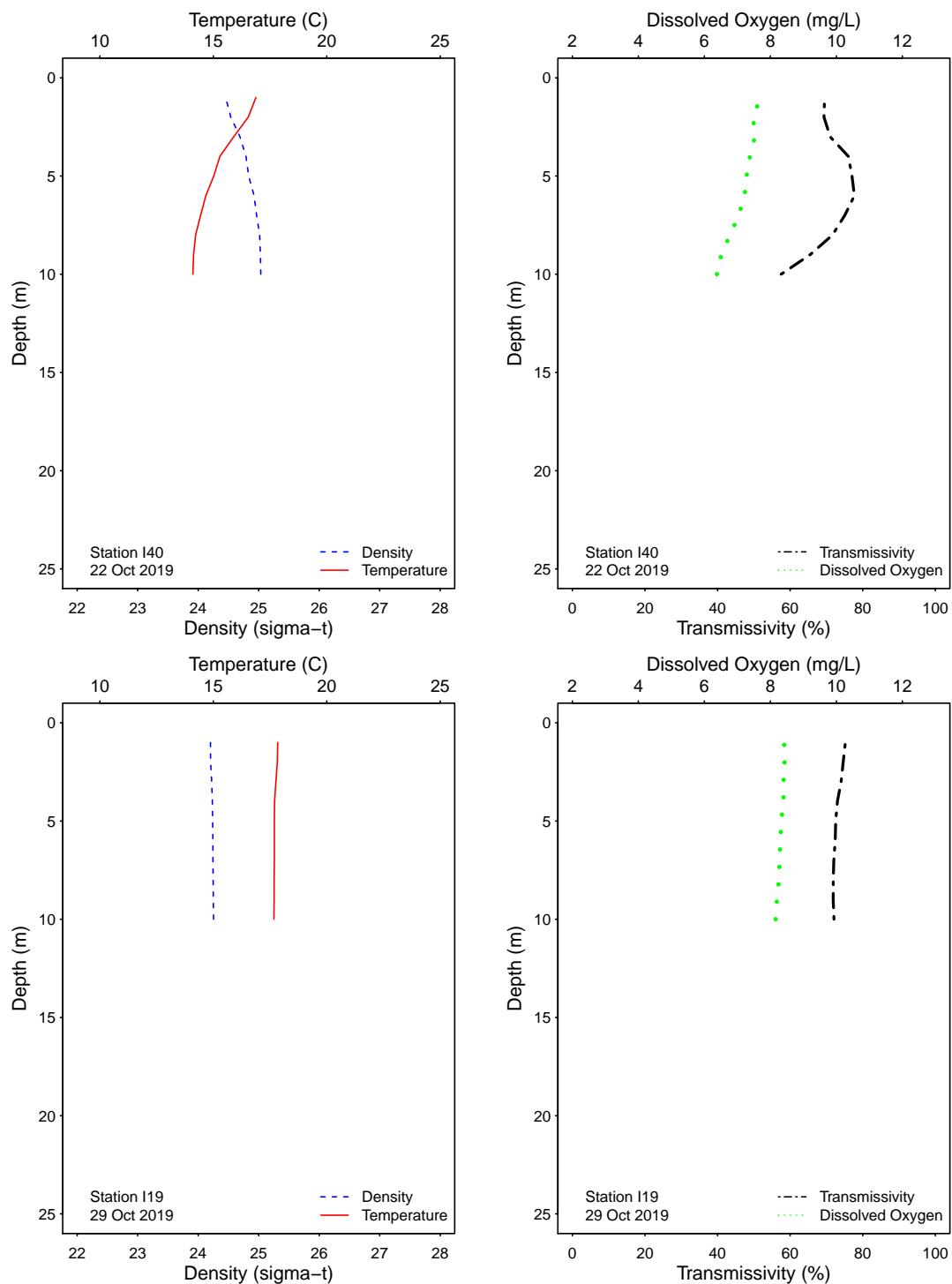


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

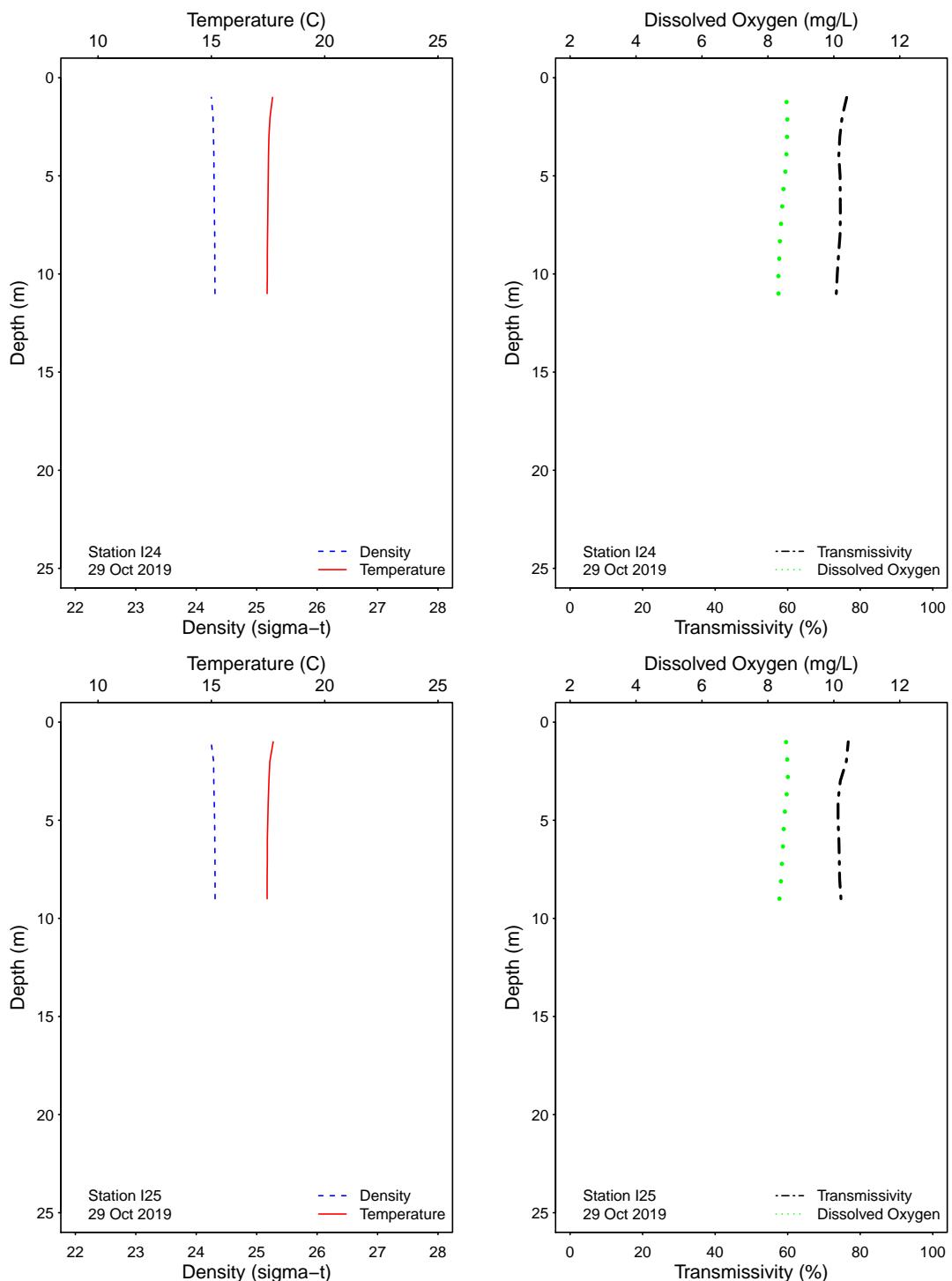


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

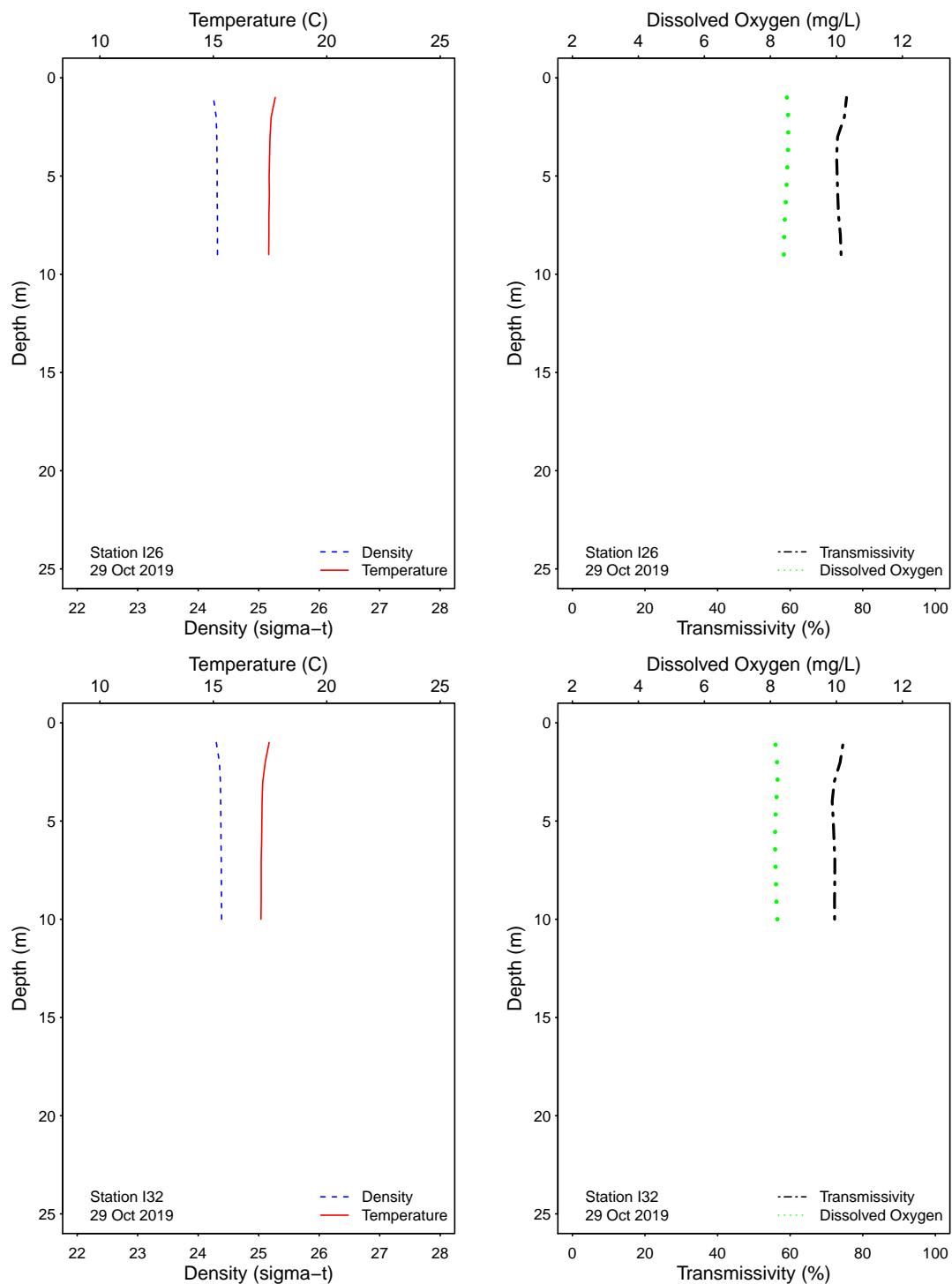


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

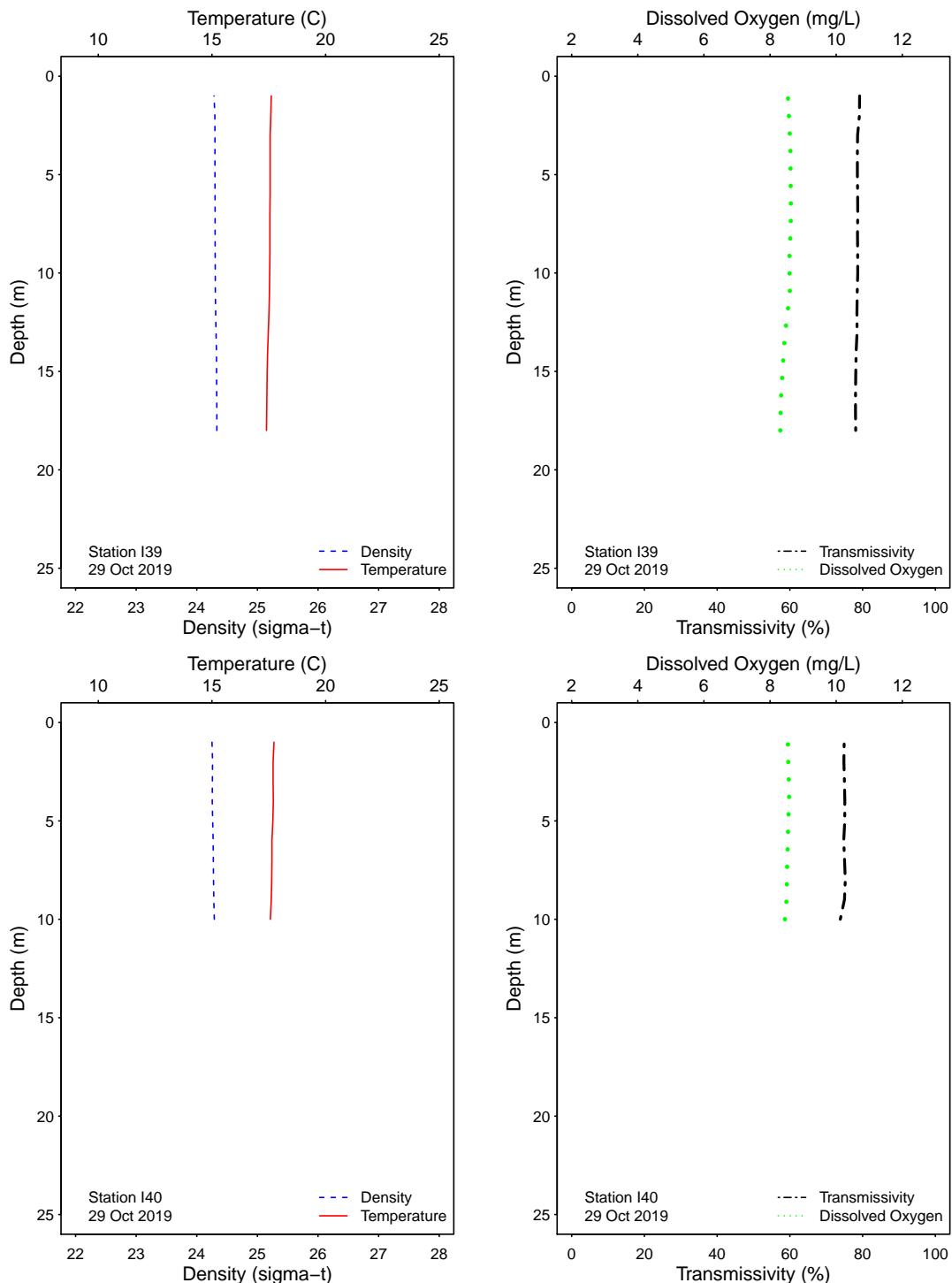


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

APPENDIX A

Quality Assurance

Table A.1

Summary of bacteriological quality assurance field and lab duplicate sample analyses at selected SBOO 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
I19	09 Oct 2019	6	BS	LAB DUPLICATE	18e	2e	<2
I19	15 Oct 2019	6	JF	LAB DUPLICATE	<20	<2	<2
I19	22 Oct 2019	6	AE	LAB DUPLICATE	<2	<2	<2
I19	29 Oct 2019	6	AE	LAB DUPLICATE	100e	2e	16e
I40	09 Oct 2019	6	AE	LAB DUPLICATE	8e	<2	<2
I40	15 Oct 2019	6	BS	LAB DUPLICATE	<2	<2	<2
I40	22 Oct 2019	6	AE	LAB DUPLICATE	<2	<2	<2
I40	29 Oct 2019	6	AE	LAB DUPLICATE	<20	<2	<2
S12	01 Oct 2019		JT	FIELD DUPLICATE	<20	<2	<2
S12	01 Oct 2019		JT	LAB DUPLICATE	<20	<2	<2
S12	08 Oct 2019		JT	FIELD DUPLICATE	<20	2e	<2
S12	08 Oct 2019		JT	LAB DUPLICATE	<200	<2	6e
S12	15 Oct 2019		AE	FIELD DUPLICATE	<200	ns	ns
S12	15 Oct 2019		AR	FIELD DUPLICATE	ns	8e	2e
S12	15 Oct 2019		AR	LAB DUPLICATE	<200	20e	<2
S12	22 Oct 2019		JT	FIELD DUPLICATE	8e	2e	4e
S12	22 Oct 2019		JT	LAB DUPLICATE	4e	6e	2e
S12	29 Oct 2019		JF	FIELD DUPLICATE	20e	<20	12e
S12	29 Oct 2019		JF	LAB DUPLICATE	100e	8e	6e

ns = not sampled

ND = no data

