



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 2021

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



The City of
SAN DIEGO
Public Utilities Department

Environmental Monitoring & Technical Services Division

November 31, 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 October 2021 Monthly Receiving Waters Monitoring Report for the South Bay Ocean Outfall, South Bay Water Reclamation Plant as required per Order No. R9-2021-0011, NPDES Permit No. CA0109045.

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. R9-2021-0001, 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. R9-2021-0011, 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 water-contact standards specified in the 2019 California Ocean Plan (Ocean Plan). The six standards are defined as follows:

Water-Contact Objectives

Fecal coliform:

- (1) The 30-day geometric mean (GM) of fecal coliform density not to exceed 200 CFU/100 mL, calculated based on the five most recent samples from each site
- (2) The single sample maximum (SSM) not to exceed 400 CFU/100 mL

Enterococci:

- (1) The six-week rolling GM of *Enterococci* not to exceed 30 CFU/100 mL, calculated weekly
- (2) The statistical threshold value (STV) of 110 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner

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.

Shellfish Harvesting Standards

Total coliform:

- (1) The median total coliform density shall not exceed 70 CFU/100 mL
- (2) The STV of 230 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner

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 2021 Quality Assurance Report, which will be completed in March 2022.

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.
- During October, six of the eight shore stations located north of the border were out of compliance with 2019 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
 - The single sample maximum (SSM) standard for fecal coliforms was exceeded at stations S4 and S9.
 - The 6-week geometric mean standard for *Enterococcus* was exceeded at stations S4, S5, S10, and S11.
 - The statistical threshold value (STV) standard for *Enterococcus* was exceeded at stations S4, S9, S10.
 - The 30-day running median standard for total coliform was exceeded at stations S4, S5, S6, S10, and S11.

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

- The statistical threshold value (STV) standard for total coliforms was exceeded at stations S4, S9, and S10.
- A sewage-like odor was observed at stations S5 and S6 on one or more days in October.
- 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>).

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled on October 4, 11, 20, and 27.
- During October, four of the seven kelp stations were out of compliance with 2019 Ocean Plan water contact standards on one or more days as follows:
 - The 30-day running median standard for total coliform was exceeded at stations I19, I24, I25, and I40.
 - The statistical threshold value (STV) standard for total coliforms was exceeded at stations I19 and I40.
- Water column temperatures ranged from 12.43 to 18.90°C. The difference between surface and bottom waters ranged from 1.18 to 4.55°C.
- Concentrations of chlorophyll *a* ranged from 0.73 to 4.72 µg/L at the kelp bed stations.
- Nothing of sewage origin was observed at any of these kelp stations.

➤ **Offshore Water Quality Sampling**

- Quarterly sampling was not conducted during October at the offshore stations. The next quarterly sampling is scheduled for November 2021.



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 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 2021	55	34	25	2	6	60	34	5
02 Oct 2021	55	34	25	2	6	60	34	5
03 Oct 2021	55	34	25	2	6	60	34	5
04 Oct 2021	55	34	25	2	6	60	34	5
05 Oct 2021	87	30	15	2	6	64	28	6
06 Oct 2021	87	30	15	2	6	64	28	6
07 Oct 2021	57	11	7	2	4	34	11	5
08 Oct 2021	57	11	7	2	4	34	11	5
09 Oct 2021	57	11	7	2	4	34	11	5
10 Oct 2021	57	11	7	2	4	34	11	5
11 Oct 2021	57	11	7	2	4	34	11	5
12 Oct 2021	34	12	5	2	4	19	11	4
13 Oct 2021	34	12	5	2	4	19	11	4
14 Oct 2021	26	16	5	2	4	13	13	4
15 Oct 2021	26	16	5	2	4	13	13	4
16 Oct 2021	26	16	5	2	4	13	13	4
17 Oct 2021	26	16	5	2	4	13	13	4
18 Oct 2021	26	16	5	2	4	13	13	4
19 Oct 2021	15	10	4	2	4	9	9	3
20 Oct 2021	15	10	4	2	4	9	9	3
21 Oct 2021	26	16	5	2	5	13	13	4
22 Oct 2021	26	16	5	2	5	13	13	4
23 Oct 2021	26	16	5	2	5	13	13	4
24 Oct 2021	26	16	5	2	5	13	13	4
25 Oct 2021	26	16	5	2	5	13	13	4
26 Oct 2021	15	10	7	2	14	9	9	3
27 Oct 2021	15	10	7	2	14	9	9	3
28 Oct 2021	10	6	4	2	12	5	5	3
29 Oct 2021	10	6	4	2	12	5	5	3
30 Oct 2021	10	6	4	2	12	5	5	3
31 Oct 2021	10	6	4	2	12	5	5	3

* Geometric mean calculated using n<5

Table 2.2

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
05 Oct 2021	E	IC	IC	IC	IC	IC	IC	IC
12 Oct 2021	IC	IC	IC	IC	IC	IC	IC	IC
19 Oct 2021	IC	IC	IC	IC	IC	IC	IC	IC
26 Oct 2021	IC	IC	IC	IC	E	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.3

Summary of compliance with the Ocean Plan's 6-week 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 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2021	22	24	15	3	10	29	18	5
02 Oct 2021	22	24	15	3	10	29	18	5
03 Oct 2021	22	24	15	3	10	29	18	5
04 Oct 2021	22	24	15	3	10	29	18	5
05 Oct 2021	56	40	21	3	7	62	26	7
06 Oct 2021	56	40	21	3	7	62	26	7
07 Oct 2021	56	40	21	3	7	62	26	7
08 Oct 2021	56	40	21	3	7	62	26	7
09 Oct 2021	56	40	21	3	7	62	26	7
10 Oct 2021	56	40	21	3	7	62	26	7
11 Oct 2021	56	40	21	3	7	62	26	7
12 Oct 2021	56	53	25	3	6	62	32	7
13 Oct 2021	56	53	25	3	6	62	32	7
14 Oct 2021	56	53	25	3	6	62	32	7
15 Oct 2021	56	53	25	3	6	62	32	7
16 Oct 2021	56	53	25	3	6	62	32	7
17 Oct 2021	56	53	25	3	6	62	32	7
18 Oct 2021	56	53	25	3	6	62	32	7
19 Oct 2021	31	14	10	3	5	17	10	5
20 Oct 2021	31	14	10	3	5	17	10	5
21 Oct 2021	31	14	10	3	5	17	10	5
22 Oct 2021	31	14	10	3	5	17	10	5
23 Oct 2021	31	14	10	3	5	17	10	5
24 Oct 2021	31	14	10	3	5	17	10	5
25 Oct 2021	31	14	10	3	5	17	10	5
26 Oct 2021	18	9	10	3	9	8	7	3
27 Oct 2021	18	9	10	3	9	8	7	3
28 Oct 2021	18	9	10	3	9	8	7	3
29 Oct 2021	18	9	10	3	9	8	7	3
30 Oct 2021	18	9	10	3	9	8	7	3
31 Oct 2021	18	9	10	3	9	8	7	3

* Geometric mean calculated using n<5

Table 2.4

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	S4	S5	S6	S8	S9	S10	S11	S12
October	E	IC	IC	IC	E	E	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.5

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the SBOO shore stations. Data are based on the median of the five most recent samples from each site over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2021	1500	700	360	11	30	1460	480	30
02 Oct 2021	1500	700	360	11	30	1460	480	30
03 Oct 2021	1500	700	360	11	30	1460	480	30
04 Oct 2021	1500	700	360	11	30	1460	480	30
05 Oct 2021	1600	200	80	20	20	1200	180	40
06 Oct 2021	1600	200	80	20	20	1200	180	40
07 Oct 2021	1500	150	50	11	20	1060	130	30
08 Oct 2021	1500	150	50	11	20	1060	130	30
09 Oct 2021	1500	150	50	11	20	1060	130	30
10 Oct 2021	1500	150	50	11	20	1060	130	30
11 Oct 2021	1500	150	50	11	20	1060	130	30
12 Oct 2021	1400	100	40	2	20	920	80	20
13 Oct 2021	1400	100	40	2	20	920	80	20
14 Oct 2021	800	140	30	2	20	700	107	12
15 Oct 2021	800	140	30	2	20	700	107	12
16 Oct 2021	800	140	30	2	20	700	107	12
17 Oct 2021	800	140	30	2	20	700	107	12
18 Oct 2021	800	140	30	2	20	700	107	12
19 Oct 2021	200	80	20	2	20	200	34	20
20 Oct 2021	200	80	20	2	20	200	34	20
21 Oct 2021	710	140	30	11	20	610	107	20
22 Oct 2021	710	140	30	11	20	610	107	20
23 Oct 2021	710	140	30	11	20	610	107	20
24 Oct 2021	710	140	30	11	20	610	107	20
25 Oct 2021	710	140	30	11	20	610	107	20
26 Oct 2021	20	80	40	20	20	20	34	20
27 Oct 2021	20	80	40	20	20	20	34	20
28 Oct 2021	16	50	30	20	20	20	27	15
29 Oct 2021	16	50	30	20	20	20	27	15
30 Oct 2021	16	50	30	20	20	20	27	15
31 Oct 2021	16	50	30	20	20	20	27	15

* Median calculated using n<5

Table 2.6

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value standard for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10% of samples per month.

Date	S4	S5	S6	S8	S9	S10	S11	S12
October	E	IC	IC	IC	E	E	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.7

Summary of water quality parameters at the SBOO shore stations for each sample date. Densities of total coliform (Total), fecal coliform (Fecal), and *Enterococcus* (Entero) are reported as CFU/100 mL. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero
S0	05 Oct 2021	1238	4800	800e	880
S0	12 Oct 2021	1010	15000	620	260e
S0	19 Oct 2021	1220	700	140e	88
S0	26 Oct 2021	1230	12000	1000e	320e
S2	05 Oct 2021	1310	740	70	84
S2	12 Oct 2021	1045	460	96	32e
S2	19 Oct 2021	1250	<20	2e	<2
S2	26 Oct 2021	1315	200e	80e	440
S3	05 Oct 2021	1330	>16000	11000	8600
S3	12 Oct 2021	1115	460	48	84
S3	19 Oct 2021	1325	2e	<2	<2
S3	26 Oct 2021	1330	160e	32e	68
S4	05 Oct 2021	1008	2400e	540	500
S4	12 Oct 2021	1002	12e	4e	2e
S4	19 Oct 2021	1146	20e	2e	62
S4	26 Oct 2021	1037	<2	<2	2e
S5	05 Oct 2021	1108	<200	16e	44
S5	12 Oct 2021	841	80e	18e	10e
S5	19 Oct 2021	1006	<20	<2	2e
S5	26 Oct 2021	859	<2	<2	<2
S6	05 Oct 2021	1130	20e	2e	14e
S6	12 Oct 2021	857	40e	2e	6e
S6	19 Oct 2021	1042	<20	<2	4e
S6	26 Oct 2021	915	60e	44	22e
S8	05 Oct 2021	855	<20	<2	<2
S8	12 Oct 2021	1133	<2	<2	<2
S8	19 Oct 2021	844	<20	<2	4e
S8	26 Oct 2021	1149	<20	<2	<2
S9	05 Oct 2021	816	<20	4e	4e
S9	12 Oct 2021	1152	<2	<2	<2
S9	19 Oct 2021	820	<20	4e	4e
S9	26 Oct 2021	1220	720	720	280e
S10	05 Oct 2021	953	1200e	88	180e
S10	12 Oct 2021	1029	16e	<2	<2
S10	19 Oct 2021	1129	<20	<2	<2
S10	26 Oct 2021	1100	<20	<2	2e
S11	05 Oct 2021	1122	180e	14e	20e
S11	12 Oct 2021	849	34e	10e	6e
S11	19 Oct 2021	1031	<20	2e	<2
S11	26 Oct 2021	908	<2	2e	2e
S12	05 Oct 2021	1044	200e	10e	16e
S12	12 Oct 2021	917	4e	2e	2e
S12	19 Oct 2021	936	<20	<2	<2

Station	Date	Time	Total	Fecal	Enteric
S12	26 Oct 2021	942	10e	<2	<2

ns = not sampled

ND = no data

Table 2.8

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

Station	Date	Parameter	Value
S0	05 Oct 2021	Arrive Time	1238
S0	05 Oct 2021	Weather	Sunny
S0	05 Oct 2021	Wind Speed (kts)	3.9
S0	05 Oct 2021	Wind Dir	N
S0	05 Oct 2021	Animal Life	Bird-15
S0	05 Oct 2021	Floatables	None
S0	05 Oct 2021	Water Color	Green
S0	05 Oct 2021	Current Direction	N
S0	05 Oct 2021	Water Temp (C)	15
S0	05 Oct 2021	Wave Height Low (ft)	3
S0	05 Oct 2021	High Tide (ft)	5.46
S0	05 Oct 2021	High Tide Time	902
S0	05 Oct 2021	Low Tide (ft)	-0.12
S0	05 Oct 2021	Low Tide Time	255
S0	05 Oct 2021	Comments	Kelp; 1 L/sec water flowing from stormdrain
S0	12 Oct 2021	Arrive Time	1010
S0	12 Oct 2021	Weather	Sunny
S0	12 Oct 2021	Wind Speed (kts)	3.5
S0	12 Oct 2021	Wind Dir	NE
S0	12 Oct 2021	Animal Life	Bird-10; Dog-2
S0	12 Oct 2021	Floatables	None
S0	12 Oct 2021	Water Color	Green
S0	12 Oct 2021	Current Direction	N
S0	12 Oct 2021	Water Temp (C)	15
S0	12 Oct 2021	Wave Height Low (ft)	4
S0	12 Oct 2021	High Tide (ft)	5.49
S0	12 Oct 2021	High Tide Time	1252
S0	12 Oct 2021	Low Tide (ft)	2.61
S0	12 Oct 2021	Low Tide Time	617
S0	12 Oct 2021	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-5; 0.5 L/sec water flowing from stormdrain
S0	19 Oct 2021	Arrive Time	1220
S0	19 Oct 2021	Weather	Sunny
S0	19 Oct 2021	Wind Speed (kts)	3.8
S0	19 Oct 2021	Wind Dir	N
S0	19 Oct 2021	Animal Life	Bird-20; Dolphin-20
S0	19 Oct 2021	Floatables	None
S0	19 Oct 2021	Water Color	Green
S0	19 Oct 2021	Current Direction	N
S0	19 Oct 2021	Water Temp (C)	15
S0	19 Oct 2021	Wave Height Low (ft)	3
S0	19 Oct 2021	High Tide (ft)	5.42
S0	19 Oct 2021	High Tide Time	834
S0	19 Oct 2021	Low Tide (ft)	0.64
S0	19 Oct 2021	Low Tide Time	1448
S0	19 Oct 2021	Comments	Water turbid; Trash-0; 0.5 L/sec wtaer flowing from storm drain; "barcos pesqueros junto a la orilla" - fishing boats by the shore
S0	26 Oct 2021	Arrive Time	1230
S0	26 Oct 2021	Weather	Sunny
S0	26 Oct 2021	Wind Speed (kts)	3.6
S0	26 Oct 2021	Wind Dir	N
S0	26 Oct 2021	Animal Life	Bird-15

Station	Date	Parameter	Value
S0	26 Oct 2021	Floatables	None
S0	26 Oct 2021	Water Color	Green
S0	26 Oct 2021	Current Direction	S
S0	26 Oct 2021	Water Temp (C)	15
S0	26 Oct 2021	Wave Height Low (ft)	4
S0	26 Oct 2021	High Tide (ft)	4.66
S0	26 Oct 2021	High Tide Time	1153
S0	26 Oct 2021	Low Tide (ft)	0.95
S0	26 Oct 2021	Low Tide Time	2035
S0	26 Oct 2021	Comments	Kelp; 0.5 L/sec water flowing from storm drain
S2	05 Oct 2021	Arrive Time	1310
S2	05 Oct 2021	Weather	Sunny
S2	05 Oct 2021	Wind Speed (kts)	2.8
S2	05 Oct 2021	Wind Dir	N
S2	05 Oct 2021	Animal Life	Bird-15
S2	05 Oct 2021	Floatables	None
S2	05 Oct 2021	Water Color	Green
S2	05 Oct 2021	Current Direction	N
S2	05 Oct 2021	Water Temp (C)	15
S2	05 Oct 2021	Wave Height Low (ft)	3
S2	05 Oct 2021	High Tide (ft)	5.46
S2	05 Oct 2021	High Tide Time	902
S2	05 Oct 2021	Low Tide (ft)	-0.12
S2	05 Oct 2021	Low Tide Time	255
S2	05 Oct 2021	Comments	Kelp; No flow from storm drain
S2	12 Oct 2021	Arrive Time	1115
S2	12 Oct 2021	Weather	Sunny
S2	12 Oct 2021	Wind Speed (kts)	3.4
S2	12 Oct 2021	Wind Dir	NE
S2	12 Oct 2021	Animal Life	Bird-10; Dog-4
S2	12 Oct 2021	Floatables	None
S2	12 Oct 2021	Water Color	Green
S2	12 Oct 2021	Current Direction	N
S2	12 Oct 2021	Water Temp (C)	15
S2	12 Oct 2021	Wave Height Low (ft)	4
S2	12 Oct 2021	High Tide (ft)	5.49
S2	12 Oct 2021	High Tide Time	1252
S2	12 Oct 2021	Low Tide (ft)	2.61
S2	12 Oct 2021	Low Tide Time	617
S2	12 Oct 2021	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-10; No flow from storm drain
S2	19 Oct 2021	Arrive Time	1250
S2	19 Oct 2021	Weather	Sunny
S2	19 Oct 2021	Wind Speed (kts)	3.8
S2	19 Oct 2021	Wind Dir	N
S2	19 Oct 2021	Animal Life	Bird-15; Dog-2
S2	19 Oct 2021	Floatables	None
S2	19 Oct 2021	Water Color	Green
S2	19 Oct 2021	Current Direction	N
S2	19 Oct 2021	Water Temp (C)	15
S2	19 Oct 2021	Wave Height Low (ft)	3
S2	19 Oct 2021	High Tide (ft)	5.42
S2	19 Oct 2021	High Tide Time	834
S2	19 Oct 2021	Low Tide (ft)	0.64
S2	19 Oct 2021	Low Tide Time	1448
S2	19 Oct 2021	Comments	Water turbid; Surfer/Paddle boarder-1; Trash-0; Kelp; no flow from storm drain

Station	Date	Parameter	Value
S2	26 Oct 2021	Arrive Time	1315
S2	26 Oct 2021	Weather	Sunny
S2	26 Oct 2021	Wind Speed (kts)	3.9
S2	26 Oct 2021	Wind Dir	N
S2	26 Oct 2021	Animal Life	Bird-15
S2	26 Oct 2021	Floatables	None
S2	26 Oct 2021	Water Color	Green
S2	26 Oct 2021	Current Direction	S
S2	26 Oct 2021	Water Temp (C)	15
S2	26 Oct 2021	Wave Height Low (ft)	4
S2	26 Oct 2021	High Tide (ft)	4.66
S2	26 Oct 2021	High Tide Time	1153
S2	26 Oct 2021	Low Tide (ft)	0.95
S2	26 Oct 2021	Low Tide Time	2035
S2	26 Oct 2021	Comments	Kelp; no flow from storm drain
S3	05 Oct 2021	Arrive Time	1330
S3	05 Oct 2021	Weather	Sunny
S3	05 Oct 2021	Wind Speed (kts)	4.8
S3	05 Oct 2021	Wind Dir	N
S3	05 Oct 2021	Animal Life	Bird-15
S3	05 Oct 2021	Floatables	None
S3	05 Oct 2021	Water Color	Green
S3	05 Oct 2021	Current Direction	N
S3	05 Oct 2021	Water Temp (C)	15
S3	05 Oct 2021	Wave Height Low (ft)	3
S3	05 Oct 2021	High Tide (ft)	5.46
S3	05 Oct 2021	High Tide Time	902
S3	05 Oct 2021	Low Tide (ft)	-0.12
S3	05 Oct 2021	Low Tide Time	255
S3	05 Oct 2021	Comments	Water turbid; Trash-0; Kelp; Person/Walker/Jogger-3; "Pozo de visita asolvado" - "manhole access is clogged"; 1.0 L/sec water flowing from stormdrain
S3	12 Oct 2021	Arrive Time	1045
S3	12 Oct 2021	Weather	Sunny
S3	12 Oct 2021	Wind Speed (kts)	3.6
S3	12 Oct 2021	Wind Dir	NE
S3	12 Oct 2021	Animal Life	Bird-10; Dog-4
S3	12 Oct 2021	Floatables	None
S3	12 Oct 2021	Water Color	Green
S3	12 Oct 2021	Current Direction	N
S3	12 Oct 2021	Water Temp (C)	15
S3	12 Oct 2021	Wave Height Low (ft)	4
S3	12 Oct 2021	High Tide (ft)	5.49
S3	12 Oct 2021	High Tide Time	1252
S3	12 Oct 2021	Low Tide (ft)	2.61
S3	12 Oct 2021	Low Tide Time	617
S3	12 Oct 2021	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-10; No flow from storm drain
S3	19 Oct 2021	Arrive Time	1325
S3	19 Oct 2021	Weather	Sunny
S3	19 Oct 2021	Wind Speed (kts)	3.8
S3	19 Oct 2021	Wind Dir	N
S3	19 Oct 2021	Animal Life	Bird-15; Dog-1
S3	19 Oct 2021	Floatables	None
S3	19 Oct 2021	Water Color	Green
S3	19 Oct 2021	Current Direction	N
S3	19 Oct 2021	Water Temp (C)	15
S3	19 Oct 2021	Wave Height Low (ft)	3

Station	Date	Parameter	Value
S3	19 Oct 2021	High Tide (ft)	5.42
S3	19 Oct 2021	High Tide Time	834
S3	19 Oct 2021	Low Tide (ft)	0.64
S3	19 Oct 2021	Low Tide Time	1448
S3	19 Oct 2021	Comments	Kelp; 0.5 L/sec water flowing from storm drain
S3	26 Oct 2021	Arrive Time	1330
S3	26 Oct 2021	Weather	Sunny
S3	26 Oct 2021	Wind Speed (kts)	4.1
S3	26 Oct 2021	Wind Dir	N
S3	26 Oct 2021	Animal Life	Bird-15
S3	26 Oct 2021	Floatables	None
S3	26 Oct 2021	Water Color	Green
S3	26 Oct 2021	Current Direction	S
S3	26 Oct 2021	Water Temp (C)	15
S3	26 Oct 2021	Wave Height Low (ft)	4
S3	26 Oct 2021	High Tide (ft)	4.66
S3	26 Oct 2021	High Tide Time	1153
S3	26 Oct 2021	Low Tide (ft)	0.95
S3	26 Oct 2021	Low Tide Time	2035
S3	26 Oct 2021	Comments	Kelp; 0.5 L/sec water flowing from storm drain.
S4	05 Oct 2021	Arrive Time	1008
S4	05 Oct 2021	Weather	Partly cloudy
S4	05 Oct 2021	Wind Speed (kts)	3.3
S4	05 Oct 2021	Wind Dir	SW
S4	05 Oct 2021	Animal Life	Seagull-1
S4	05 Oct 2021	Floatables	Foam
S4	05 Oct 2021	Water Color	Green
S4	05 Oct 2021	Current Direction	N
S4	05 Oct 2021	Water Temp (C)	21.1
S4	05 Oct 2021	Wave Height Low (ft)	3
S4	05 Oct 2021	High Tide (ft)	5.46
S4	05 Oct 2021	High Tide Time	902
S4	05 Oct 2021	Low Tide (ft)	-0.12
S4	05 Oct 2021	Low Tide Time	255
S4	05 Oct 2021	Comments	Kelp; Seagrass; Debris
S4	12 Oct 2021	Arrive Time	1006
S4	12 Oct 2021	Weather	Sunny
S4	12 Oct 2021	Wind Speed (kts)	5.8
S4	12 Oct 2021	Wind Dir	NW
S4	12 Oct 2021	Animal Life	
S4	12 Oct 2021	Floatables	None
S4	12 Oct 2021	Water Color	Brown
S4	12 Oct 2021	Current Direction	S
S4	12 Oct 2021	Water Temp (C)	18.2
S4	12 Oct 2021	Wave Height Low (ft)	6
S4	12 Oct 2021	High Tide (ft)	5.49
S4	12 Oct 2021	High Tide Time	1252
S4	12 Oct 2021	Low Tide (ft)	2.61
S4	12 Oct 2021	Low Tide Time	617
S4	12 Oct 2021	Comments	Kelp; Seagrass; Debris
S4	19 Oct 2021	Arrive Time	1146
S4	19 Oct 2021	Weather	Sunny
S4	19 Oct 2021	Wind Speed (kts)	4.4
S4	19 Oct 2021	Wind Dir	W
S4	19 Oct 2021	Animal Life	Horse-3
S4	19 Oct 2021	Floatables	None
S4	19 Oct 2021	Water Color	Green

Station	Date	Parameter	Value
S4	19 Oct 2021	Current Direction	S
S4	19 Oct 2021	Water Temp (C)	17.6
S4	19 Oct 2021	Wave Height Low (ft)	3
S4	19 Oct 2021	High Tide (ft)	5.42
S4	19 Oct 2021	High Tide Time	834
S4	19 Oct 2021	Low Tide (ft)	0.64
S4	19 Oct 2021	Low Tide Time	1448
S4	19 Oct 2021	Comments	Water turbid; Trash-4; Kelp; Seagrass; Person/Walker/Jogger-3
S4	26 Oct 2021	Arrive Time	1037
S4	26 Oct 2021	Weather	Sunny
S4	26 Oct 2021	Wind Speed (kts)	5.8
S4	26 Oct 2021	Wind Dir	W
S4	26 Oct 2021	Animal Life	
S4	26 Oct 2021	Floatables	Foam
S4	26 Oct 2021	Water Color	Green
S4	26 Oct 2021	Current Direction	N
S4	26 Oct 2021	Water Temp (C)	17.4
S4	26 Oct 2021	Wave Height Low (ft)	8
S4	26 Oct 2021	High Tide (ft)	4.98
S4	26 Oct 2021	High Tide Time	1118
S4	26 Oct 2021	Low Tide (ft)	2.7
S4	26 Oct 2021	Low Tide Time	445
S4	26 Oct 2021	Comments	Kelp; Seagrass; Debris
S5	05 Oct 2021	Arrive Time	1108
S5	05 Oct 2021	Weather	Partly cloudy
S5	05 Oct 2021	Wind Speed (kts)	7.1
S5	05 Oct 2021	Wind Dir	W
S5	05 Oct 2021	Animal Life	Bird-1
S5	05 Oct 2021	Floatables	Foam
S5	05 Oct 2021	Water Color	Green
S5	05 Oct 2021	Current Direction	N
S5	05 Oct 2021	Water Temp (C)	21.2
S5	05 Oct 2021	Wave Height Low (ft)	1
S5	05 Oct 2021	High Tide (ft)	5.46
S5	05 Oct 2021	High Tide Time	902
S5	05 Oct 2021	Low Tide (ft)	-0.12
S5	05 Oct 2021	Low Tide Time	255
S5	05 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Debris; Person/Walker/Jogger-1; Sewage-like odor
S5	12 Oct 2021	Arrive Time	841
S5	12 Oct 2021	Weather	Sunny
S5	12 Oct 2021	Wind Speed (kts)	6.2
S5	12 Oct 2021	Wind Dir	NW
S5	12 Oct 2021	Animal Life	
S5	12 Oct 2021	Floatables	None
S5	12 Oct 2021	Water Color	Green
S5	12 Oct 2021	Current Direction	S
S5	12 Oct 2021	Water Temp (C)	18
S5	12 Oct 2021	Wave Height Low (ft)	4
S5	12 Oct 2021	High Tide (ft)	5.49
S5	12 Oct 2021	High Tide Time	1252
S5	12 Oct 2021	Low Tide (ft)	2.61
S5	12 Oct 2021	Low Tide Time	
S5	12 Oct 2021	Comments	Kelp; Seagrass; Debris
S5	19 Oct 2021	Arrive Time	1006
S5	19 Oct 2021	Weather	Sunny

Station	Date	Parameter	Value
S5	19 Oct 2021	Wind Speed (kts)	2.8
S5	19 Oct 2021	Wind Dir	NW
S5	19 Oct 2021	Animal Life	
S5	19 Oct 2021	Floatables	Foam
S5	19 Oct 2021	Water Color	Green
S5	19 Oct 2021	Current Direction	S
S5	19 Oct 2021	Water Temp (C)	19.5
S5	19 Oct 2021	Wave Height Low (ft)	2
S5	19 Oct 2021	High Tide (ft)	5.42
S5	19 Oct 2021	High Tide Time	834
S5	19 Oct 2021	Low Tide (ft)	0.64
S5	19 Oct 2021	Low Tide Time	1448
S5	19 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Debris; Seagrass; Person/Walker/Jogger-1
S5	26 Oct 2021	Arrive Time	859
S5	26 Oct 2021	Weather	Sunny
S5	26 Oct 2021	Wind Speed (kts)	6.7
S5	26 Oct 2021	Wind Dir	SW
S5	26 Oct 2021	Animal Life	Bird-2
S5	26 Oct 2021	Floatables	None
S5	26 Oct 2021	Water Color	Green
S5	26 Oct 2021	Current Direction	
S5	26 Oct 2021	Water Temp (C)	16.7
S5	26 Oct 2021	Wave Height Low (ft)	5
S5	26 Oct 2021	High Tide (ft)	4.98
S5	26 Oct 2021	High Tide Time	1118
S5	26 Oct 2021	Low Tide (ft)	2.7
S5	26 Oct 2021	Low Tide Time	445
S5	26 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Algae; Person/Walker/Jogger-1
S6	05 Oct 2021	Arrive Time	1130
S6	05 Oct 2021	Weather	Partly cloudy
S6	05 Oct 2021	Wind Speed (kts)	5.7
S6	05 Oct 2021	Wind Dir	W
S6	05 Oct 2021	Animal Life	Bird-6; Dog-1
S6	05 Oct 2021	Floatables	Foam
S6	05 Oct 2021	Water Color	Green
S6	05 Oct 2021	Current Direction	N
S6	05 Oct 2021	Water Temp (C)	21.2
S6	05 Oct 2021	Wave Height Low (ft)	3
S6	05 Oct 2021	High Tide (ft)	5.46
S6	05 Oct 2021	High Tide Time	902
S6	05 Oct 2021	Low Tide (ft)	-0.12
S6	05 Oct 2021	Low Tide Time	255
S6	05 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-2; Sewage-like odor
S6	12 Oct 2021	Arrive Time	857
S6	12 Oct 2021	Weather	Sunny
S6	12 Oct 2021	Wind Speed (kts)	11.5
S6	12 Oct 2021	Wind Dir	NW
S6	12 Oct 2021	Animal Life	Bird-2
S6	12 Oct 2021	Floatables	None
S6	12 Oct 2021	Water Color	Green
S6	12 Oct 2021	Current Direction	S
S6	12 Oct 2021	Water Temp (C)	18.8
S6	12 Oct 2021	Wave Height Low (ft)	8
S6	12 Oct 2021	High Tide (ft)	5.49
S6	12 Oct 2021	High Tide Time	1252

Station	Date	Parameter	Value
S6	12 Oct 2021	Low Tide (ft)	2.61
S6	12 Oct 2021	Low Tide Time	617
S6	12 Oct 2021	Comments	Water turbid; Trash-2; Kelp; Seagrass; Person/Walker/Jogger-1
S6	19 Oct 2021	Arrive Time	1042
S6	19 Oct 2021	Weather	Sunny
S6	19 Oct 2021	Wind Speed (kts)	3.3
S6	19 Oct 2021	Wind Dir	NW
S6	19 Oct 2021	Animal Life	Bird-1
S6	19 Oct 2021	Floatables	Foam
S6	19 Oct 2021	Water Color	Green
S6	19 Oct 2021	Current Direction	N
S6	19 Oct 2021	Water Temp (C)	18.8
S6	19 Oct 2021	Wave Height Low (ft)	2
S6	19 Oct 2021	High Tide (ft)	5.42
S6	19 Oct 2021	High Tide Time	834
S6	19 Oct 2021	Low Tide (ft)	0.64
S6	19 Oct 2021	Low Tide Time	1448
S6	19 Oct 2021	Comments	Water turbid; Surfer/Paddle boarder-1; Trash-2; Kelp; Seagrass; Person/Walker/Jogger-1
S6	26 Oct 2021	Arrive Time	915
S6	26 Oct 2021	Weather	Sunny
S6	26 Oct 2021	Wind Speed (kts)	5.2
S6	26 Oct 2021	Wind Dir	W
S6	26 Oct 2021	Animal Life	Bird-1
S6	26 Oct 2021	Floatables	Foam
S6	26 Oct 2021	Water Color	Green
S6	26 Oct 2021	Current Direction	
S6	26 Oct 2021	Water Temp (C)	17.8
S6	26 Oct 2021	Wave Height Low (ft)	8
S6	26 Oct 2021	High Tide (ft)	4.98
S6	26 Oct 2021	High Tide Time	1118
S6	26 Oct 2021	Low Tide (ft)	2.7
S6	26 Oct 2021	Low Tide Time	445
S6	26 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-5
S8	05 Oct 2021	Arrive Time	855
S8	05 Oct 2021	Weather	Partly cloudy
S8	05 Oct 2021	Wind Speed (kts)	0
S8	05 Oct 2021	Wind Dir	
S8	05 Oct 2021	Animal Life	Bird-3
S8	05 Oct 2021	Floatables	Foam
S8	05 Oct 2021	Water Color	Green
S8	05 Oct 2021	Current Direction	N
S8	05 Oct 2021	Water Temp (C)	21.3
S8	05 Oct 2021	Wave Height Low (ft)	2
S8	05 Oct 2021	High Tide (ft)	5.46
S8	05 Oct 2021	High Tide Time	902
S8	05 Oct 2021	Low Tide (ft)	-0.12
S8	05 Oct 2021	Low Tide Time	255
S8	05 Oct 2021	Comments	Water turbid; Boogie boarder/Swimmer-3; Trash-1; Kelp; Seagrass
S8	12 Oct 2021	Arrive Time	1133
S8	12 Oct 2021	Weather	Sunny
S8	12 Oct 2021	Wind Speed (kts)	6.8
S8	12 Oct 2021	Wind Dir	NW
S8	12 Oct 2021	Animal Life	

Station	Date	Parameter	Value
S8	12 Oct 2021	Floatables	None
S8	12 Oct 2021	Water Color	Green
S8	12 Oct 2021	Current Direction	S
S8	12 Oct 2021	Water Temp (C)	18.5
S8	12 Oct 2021	Wave Height Low (ft)	3
S8	12 Oct 2021	High Tide (ft)	5.49
S8	12 Oct 2021	High Tide Time	1252
S8	12 Oct 2021	Low Tide (ft)	2.61
S8	12 Oct 2021	Low Tide Time	617
S8	12 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-13
S8	19 Oct 2021	Arrive Time	844
S8	19 Oct 2021	Weather	Sunny
S8	19 Oct 2021	Wind Speed (kts)	3.1
S8	19 Oct 2021	Wind Dir	E
S8	19 Oct 2021	Animal Life	
S8	19 Oct 2021	Floatables	Foam
S8	19 Oct 2021	Water Color	Green
S8	19 Oct 2021	Current Direction	N
S8	19 Oct 2021	Water Temp (C)	17.2
S8	19 Oct 2021	Wave Height Low (ft)	2
S8	19 Oct 2021	High Tide (ft)	5.42
S8	19 Oct 2021	High Tide Time	834
S8	19 Oct 2021	Low Tide (ft)	0.64
S8	19 Oct 2021	Low Tide Time	1448
S8	19 Oct 2021	Comments	Water clear; Fisherperson-1; Trash-1; Kelp; Seagrass
S8	26 Oct 2021	Arrive Time	1149
S8	26 Oct 2021	Weather	Sunny
S8	26 Oct 2021	Wind Speed (kts)	6.8
S8	26 Oct 2021	Wind Dir	W
S8	26 Oct 2021	Animal Life	Bird-4
S8	26 Oct 2021	Floatables	Foam
S8	26 Oct 2021	Water Color	Green
S8	26 Oct 2021	Current Direction	S
S8	26 Oct 2021	Water Temp (C)	18.4
S8	26 Oct 2021	Wave Height Low (ft)	4
S8	26 Oct 2021	High Tide (ft)	4.66
S8	26 Oct 2021	High Tide Time	1153
S8	26 Oct 2021	Low Tide (ft)	0.95
S8	26 Oct 2021	Low Tide Time	2035
S8	26 Oct 2021	Comments	Water turbid; Trash-2; Kelp; Seagrass; Person/Walker/Jogger-6
S9	05 Oct 2021	Arrive Time	816
S9	05 Oct 2021	Weather	Partly cloudy
S9	05 Oct 2021	Wind Speed (kts)	1.5
S9	05 Oct 2021	Wind Dir	S
S9	05 Oct 2021	Animal Life	Seagull-4
S9	05 Oct 2021	Floatables	Foam
S9	05 Oct 2021	Water Color	Grey
S9	05 Oct 2021	Current Direction	N
S9	05 Oct 2021	Water Temp (C)	20.2
S9	05 Oct 2021	Wave Height Low (ft)	1
S9	05 Oct 2021	High Tide (ft)	5.46
S9	05 Oct 2021	High Tide Time	902
S9	05 Oct 2021	Low Tide (ft)	-0.12
S9	05 Oct 2021	Low Tide Time	255
S9	05 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-4; Tractor-1

Station	Date	Parameter	Value
S9	12 Oct 2021	Arrive Time	1152
S9	12 Oct 2021	Weather	Sunny
S9	12 Oct 2021	Wind Speed (kts)	7.8
S9	12 Oct 2021	Wind Dir	NW
S9	12 Oct 2021	Animal Life	Seagull-19
S9	12 Oct 2021	Floatables	None
S9	12 Oct 2021	Water Color	Green
S9	12 Oct 2021	Current Direction	S
S9	12 Oct 2021	Water Temp (C)	17.9
S9	12 Oct 2021	Wave Height Low (ft)	4
S9	12 Oct 2021	High Tide (ft)	5.49
S9	12 Oct 2021	High Tide Time	1252
S9	12 Oct 2021	Low Tide (ft)	2.61
S9	12 Oct 2021	Low Tide Time	617
S9	12 Oct 2021	Comments	Water clear; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-4
S9	19 Oct 2021	Arrive Time	820
S9	19 Oct 2021	Weather	Sunny
S9	19 Oct 2021	Wind Speed (kts)	1.6
S9	19 Oct 2021	Wind Dir	W
S9	19 Oct 2021	Animal Life	Seagull-5
S9	19 Oct 2021	Floatables	Foam
S9	19 Oct 2021	Water Color	Green
S9	19 Oct 2021	Current Direction	S
S9	19 Oct 2021	Water Temp (C)	15.7
S9	19 Oct 2021	Wave Height Low (ft)	1
S9	19 Oct 2021	High Tide (ft)	5.42
S9	19 Oct 2021	High Tide Time	834
S9	19 Oct 2021	Low Tide (ft)	0.64
S9	19 Oct 2021	Low Tide Time	1448
S9	19 Oct 2021	Comments	Water clear; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-3
S9	26 Oct 2021	Arrive Time	1220
S9	26 Oct 2021	Weather	Sunny
S9	26 Oct 2021	Wind Speed (kts)	4.8
S9	26 Oct 2021	Wind Dir	W
S9	26 Oct 2021	Animal Life	Seagull-10
S9	26 Oct 2021	Floatables	Foam
S9	26 Oct 2021	Water Color	Green
S9	26 Oct 2021	Current Direction	S
S9	26 Oct 2021	Water Temp (C)	19.4
S9	26 Oct 2021	Wave Height Low (ft)	7
S9	26 Oct 2021	High Tide (ft)	4.66
S9	26 Oct 2021	High Tide Time	1153
S9	26 Oct 2021	Low Tide (ft)	0.95
S9	26 Oct 2021	Low Tide Time	2035
S9	26 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-4
S10	05 Oct 2021	Arrive Time	954
S10	05 Oct 2021	Weather	Sunny
S10	05 Oct 2021	Wind Speed (kts)	2.5
S10	05 Oct 2021	Wind Dir	SW
S10	05 Oct 2021	Animal Life	Bird-1; Pelican-2
S10	05 Oct 2021	Floatables	Foam
S10	05 Oct 2021	Water Color	Green
S10	05 Oct 2021	Current Direction	N
S10	05 Oct 2021	Water Temp (C)	22.2

Station	Date	Parameter	Value
S10	05 Oct 2021	Wave Height Low (ft)	3
S10	05 Oct 2021	High Tide (ft)	5.46
S10	05 Oct 2021	High Tide Time	902
S10	05 Oct 2021	Low Tide (ft)	-0.12
S10	05 Oct 2021	Low Tide Time	255
S10	05 Oct 2021	Comments	Kelp; Seagrass; Debris
S10	12 Oct 2021	Arrive Time	1029
S10	12 Oct 2021	Weather	Sunny
S10	12 Oct 2021	Wind Speed (kts)	5.8
S10	12 Oct 2021	Wind Dir	NW
S10	12 Oct 2021	Animal Life	
S10	12 Oct 2021	Floatables	None
S10	12 Oct 2021	Water Color	Brown
S10	12 Oct 2021	Current Direction	S
S10	12 Oct 2021	Water Temp (C)	18.2
S10	12 Oct 2021	Wave Height Low (ft)	6
S10	12 Oct 2021	High Tide (ft)	5.49
S10	12 Oct 2021	High Tide Time	1252
S10	12 Oct 2021	Low Tide (ft)	2.61
S10	12 Oct 2021	Low Tide Time	617
S10	12 Oct 2021	Comments	Water turbid; Trash-3; Kelp; Seagrass; Algae; Debris; Person/Walker/Jogger-4
S10	19 Oct 2021	Arrive Time	1129
S10	19 Oct 2021	Weather	Sunny
S10	19 Oct 2021	Wind Speed (kts)	3.2
S10	19 Oct 2021	Wind Dir	W
S10	19 Oct 2021	Animal Life	
S10	19 Oct 2021	Floatables	Foam
S10	19 Oct 2021	Water Color	Green
S10	19 Oct 2021	Current Direction	N
S10	19 Oct 2021	Water Temp (C)	17.8
S10	19 Oct 2021	Wave Height Low (ft)	3
S10	19 Oct 2021	High Tide (ft)	5.42
S10	19 Oct 2021	High Tide Time	834
S10	19 Oct 2021	Low Tide (ft)	0.64
S10	19 Oct 2021	Low Tide Time	1448
S10	19 Oct 2021	Comments	Kelp; Seagrass; Debris
S10	26 Oct 2021	Arrive Time	1100
S10	26 Oct 2021	Weather	Sunny
S10	26 Oct 2021	Wind Speed (kts)	5.4
S10	26 Oct 2021	Wind Dir	W
S10	26 Oct 2021	Animal Life	Dog-1; Horse-4
S10	26 Oct 2021	Floatables	Foam
S10	26 Oct 2021	Water Color	Green
S10	26 Oct 2021	Current Direction	N
S10	26 Oct 2021	Water Temp (C)	18
S10	26 Oct 2021	Wave Height Low (ft)	10
S10	26 Oct 2021	High Tide (ft)	4.98
S10	26 Oct 2021	High Tide Time	1118
S10	26 Oct 2021	Low Tide (ft)	2.7
S10	26 Oct 2021	Low Tide Time	445
S10	26 Oct 2021	Comments	Water turbid; Trash-3; Kelp; Seagrass; Debris; Person/Walker/Jogger-6
S11	05 Oct 2021	Arrive Time	1122
S11	05 Oct 2021	Weather	Partly cloudy
S11	05 Oct 2021	Wind Speed (kts)	6.7
S11	05 Oct 2021	Wind Dir	SW

Station	Date	Parameter	Value
S11	05 Oct 2021	Animal Life	
S11	05 Oct 2021	Floatables	Foam
S11	05 Oct 2021	Water Color	Green
S11	05 Oct 2021	Current Direction	N
S11	05 Oct 2021	Water Temp (C)	21.4
S11	05 Oct 2021	Wave Height Low (ft)	3
S11	05 Oct 2021	High Tide (ft)	5.46
S11	05 Oct 2021	High Tide Time	902
S11	05 Oct 2021	Low Tide (ft)	-0.12
S11	05 Oct 2021	Low Tide Time	255
S11	05 Oct 2021	Comments	Kelp; Seagrass
S11	12 Oct 2021	Arrive Time	849
S11	12 Oct 2021	Weather	Sunny
S11	12 Oct 2021	Wind Speed (kts)	10.8
S11	12 Oct 2021	Wind Dir	NW
S11	12 Oct 2021	Animal Life	Bird-3
S11	12 Oct 2021	Floatables	None
S11	12 Oct 2021	Water Color	Green
S11	12 Oct 2021	Current Direction	S
S11	12 Oct 2021	Water Temp (C)	18.6
S11	12 Oct 2021	Wave Height Low (ft)	6
S11	12 Oct 2021	High Tide (ft)	5.49
S11	12 Oct 2021	High Tide Time	1252
S11	12 Oct 2021	Low Tide (ft)	2.61
S11	12 Oct 2021	Low Tide Time	617
S11	12 Oct 2021	Comments	Kelp; Seagrass
S11	19 Oct 2021	Arrive Time	1031
S11	19 Oct 2021	Weather	Sunny
S11	19 Oct 2021	Wind Speed (kts)	3
S11	19 Oct 2021	Wind Dir	NW
S11	19 Oct 2021	Animal Life	Bird-1
S11	19 Oct 2021	Floatables	Foam; Film
S11	19 Oct 2021	Water Color	Green
S11	19 Oct 2021	Current Direction	S
S11	19 Oct 2021	Water Temp (C)	20.4
S11	19 Oct 2021	Wave Height Low (ft)	2
S11	19 Oct 2021	High Tide (ft)	5.42
S11	19 Oct 2021	High Tide Time	834
S11	19 Oct 2021	Low Tide (ft)	0.64
S11	19 Oct 2021	Low Tide Time	1448
S11	19 Oct 2021	Comments	Water turbid; Trash-2; Kelp; Seagrass; Debris; Person/Walker/Jogger-1
S11	26 Oct 2021	Arrive Time	908
S11	26 Oct 2021	Weather	Sunny
S11	26 Oct 2021	Wind Speed (kts)	6.9
S11	26 Oct 2021	Wind Dir	W
S11	26 Oct 2021	Animal Life	
S11	26 Oct 2021	Floatables	Foam
S11	26 Oct 2021	Water Color	Green
S11	26 Oct 2021	Current Direction	
S11	26 Oct 2021	Water Temp (C)	16.8
S11	26 Oct 2021	Wave Height Low (ft)	8
S11	26 Oct 2021	High Tide (ft)	4.98
S11	26 Oct 2021	High Tide Time	1118
S11	26 Oct 2021	Low Tide (ft)	2.7
S11	26 Oct 2021	Low Tide Time	445
S11	26 Oct 2021	Comments	Kelp; Seagrass

Station	Date	Parameter	Value
S12	05 Oct 2021	Arrive Time	1044
S12	05 Oct 2021	Weather	Partly cloudy
S12	05 Oct 2021	Wind Speed (kts)	3.7
S12	05 Oct 2021	Wind Dir	SW
S12	05 Oct 2021	Animal Life	Bird-1
S12	05 Oct 2021	Floatables	Foam
S12	05 Oct 2021	Water Color	Green
S12	05 Oct 2021	Current Direction	N
S12	05 Oct 2021	Water Temp (C)	21.7
S12	05 Oct 2021	Wave Height Low (ft)	3
S12	05 Oct 2021	High Tide (ft)	5.46
S12	05 Oct 2021	High Tide Time	902
S12	05 Oct 2021	Low Tide (ft)	-0.12
S12	05 Oct 2021	Low Tide Time	255
S12	05 Oct 2021	Comments	Water turbid; Surfer/Paddle boarder-6; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-5
S12	12 Oct 2021	Arrive Time	917
S12	12 Oct 2021	Weather	Sunny
S12	12 Oct 2021	Wind Speed (kts)	10.3
S12	12 Oct 2021	Wind Dir	NW
S12	12 Oct 2021	Animal Life	Bird-8; Dog-1
S12	12 Oct 2021	Floatables	Foam
S12	12 Oct 2021	Water Color	Green
S12	12 Oct 2021	Current Direction	S
S12	12 Oct 2021	Water Temp (C)	18.5
S12	12 Oct 2021	Wave Height Low (ft)	4
S12	12 Oct 2021	High Tide (ft)	5.49
S12	12 Oct 2021	High Tide Time	1252
S12	12 Oct 2021	Low Tide (ft)	2.61
S12	12 Oct 2021	Low Tide Time	617
S12	12 Oct 2021	Comments	Water clear; Trash-1; Kelp; Seagrass; Person/Walker/Jogger-3
S12	19 Oct 2021	Arrive Time	936
S12	19 Oct 2021	Weather	Sunny
S12	19 Oct 2021	Wind Speed (kts)	2.7
S12	19 Oct 2021	Wind Dir	NW
S12	19 Oct 2021	Animal Life	Dog-1; Dolphin-4; Pelican-1; Seal/Sea Lion-1
S12	19 Oct 2021	Floatables	Foam
S12	19 Oct 2021	Water Color	Green
S12	19 Oct 2021	Current Direction	N
S12	19 Oct 2021	Water Temp (C)	19.5
S12	19 Oct 2021	Wave Height Low (ft)	2
S12	19 Oct 2021	High Tide (ft)	
S12	19 Oct 2021	High Tide Time	
S12	19 Oct 2021	Low Tide (ft)	
S12	19 Oct 2021	Low Tide Time	
S12	19 Oct 2021	Comments	Water clear; Surfer/Paddle boarder-1; Trash-2; Kelp; Seagrass; Person/Walker/Jogger-7
S12	26 Oct 2021	Arrive Time	942
S12	26 Oct 2021	Weather	Sunny
S12	26 Oct 2021	Wind Speed (kts)	4
S12	26 Oct 2021	Wind Dir	W
S12	26 Oct 2021	Animal Life	Bird-1; Dog-1
S12	26 Oct 2021	Floatables	Foam
S12	26 Oct 2021	Water Color	Green
S12	26 Oct 2021	Current Direction	N
S12	26 Oct 2021	Water Temp (C)	17.6
S12	26 Oct 2021	Wave Height Low (ft)	8

Station	Date	Parameter	Value
S12	26 Oct 2021	High Tide (ft)	4.98
S12	26 Oct 2021	High Tide Time	1118
S12	26 Oct 2021	Low Tide (ft)	2.7
S12	26 Oct 2021	Low Tide Time	445
S12	26 Oct 2021	Comments	Water turbid; Trash-1; Kelp; Seagrass; Algae; Person/Walker/Jogger-6

Kelp Stations

Table 3.1

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 2021	17	13	8	5	2	3	11
02 Oct 2021	17	13	8	5	2	3	11
03 Oct 2021	17	13	8	5	2	3	11
04 Oct 2021	11	9	6	4	2	2	8
05 Oct 2021	11	9	6	4	2	2	8
06 Oct 2021	11	9	6	4	2	2	8
07 Oct 2021	5	6	5	3	2	2	4
08 Oct 2021	5	6	5	3	2	2	4
09 Oct 2021	5	6	5	3	2	2	4
10 Oct 2021	5	6	5	3	2	2	4
11 Oct 2021	4	5	4	4	2	2	3
12 Oct 2021	4	5	4	4	2	2	3
13 Oct 2021	5	6	5	4	2	2	4
14 Oct 2021	5	6	5	4	2	2	4
15 Oct 2021	5	6	5	4	2	2	4
16 Oct 2021	5	6	5	4	2	2	4
17 Oct 2021	5	6	5	4	2	2	4
18 Oct 2021	5	6	5	4	2	2	4
19 Oct 2021	5	6	5	4	2	2	4
20 Oct 2021	4	6	5	4	2	2	3
21 Oct 2021	4	6	5	4	2	2	3
22 Oct 2021	5	8	6	4	2	2	4
23 Oct 2021	5	8	6	4	2	2	4
24 Oct 2021	5	8	6	4	2	2	4
25 Oct 2021	5	8	6	4	2	2	4
26 Oct 2021	5	8	6	4	2	2	4
27 Oct 2021	8	6	5	4	2	2	7
28 Oct 2021	4	2	3	3	2	2	5
29 Oct 2021	4	2	3	3	2	2	5
30 Oct 2021	4	2	3	3	2	2	5
31 Oct 2021	4	2	3	3	2	2	5

* Geometric mean calculated using n<5

Table 3.2

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
04 Oct 2021	IC						
11 Oct 2021	IC						
20 Oct 2021	IC						
27 Oct 2021	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.3

Summary of compliance with the Ocean Plan's 6-week 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 6 weeks unless otherwise noted (*). Values >30 CFU/100 mL exceed the standard.

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2021	21	7	6	3	2	3	7
02 Oct 2021	21	7	6	3	2	3	7
03 Oct 2021	21	7	6	3	2	3	7
04 Oct 2021	16	6	5	3	2	2	6
05 Oct 2021	19	7	6	3	2	3	7
06 Oct 2021	19	7	6	3	2	3	7
07 Oct 2021	19	7	6	3	2	3	7
08 Oct 2021	19	7	6	3	2	3	7
09 Oct 2021	19	7	6	3	2	3	7
10 Oct 2021	19	7	6	3	2	3	7
11 Oct 2021	14	6	5	3	2	2	6
12 Oct 2021	11	7	6	3	2	3	7
13 Oct 2021	11	7	6	3	2	3	7
14 Oct 2021	11	7	6	3	2	3	7
15 Oct 2021	11	7	6	3	2	3	7
16 Oct 2021	11	7	6	3	2	3	7
17 Oct 2021	11	7	6	3	2	3	7
18 Oct 2021	11	7	6	3	2	3	7
19 Oct 2021	4	5	5	3	2	2	4
20 Oct 2021	4	5	5	2	2	2	3
21 Oct 2021	4	5	5	2	2	2	3
22 Oct 2021	4	5	5	2	2	2	3
23 Oct 2021	4	5	5	2	2	2	3
24 Oct 2021	4	5	5	2	2	2	3
25 Oct 2021	4	5	6	3	2	2	4
26 Oct 2021	4	5	6	3	2	2	4
27 Oct 2021	5	5	5	2	2	3	4
28 Oct 2021	5	5	5	2	2	3	4
29 Oct 2021	5	5	5	2	2	3	4
30 Oct 2021	5	5	5	2	2	3	4
31 Oct 2021	5	5	5	2	2	3	4

* Geometric mean calculated using n<5

Table 3.4

Summary of compliance at the SBOO kelp stations with the Ocean Plan's Statistical Threshold Value standard for *Enterococcus* bacteria, which states that *Enterococcus* density shall not exceed 110 CFU/100 mL in more than 10% of samples per month.

Date	I19	I24	I25	I26	I32	I39	I40
October	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.5

Summary of compliance with the Ocean Plan's 30-day Median standard for total coliform bacteria at the SBOO kelp stations. Data are based on the median of the five most recent samples from each site and depth over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

Date	I19			I24			I25			I26			I32			I39			I40		
	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
01 Oct 2021	101	381	1210	121	802	110	41	70	121	19	61	31	2	3	16	2	41	4	30	31	200
02 Oct 2021	101	381	1210	121	802	110	41	70	121	19	61	31	2	3	16	2	41	4	30	31	200
03 Oct 2021	101	381	1210	121	802	110	41	70	121	19	61	31	2	3	16	2	41	4	30	31	200
04 Oct 2021	4	20	20	2	10	20	8	20	4	2	8	2	2	2	12	2	2	4	20	20	20
05 Oct 2021	4	20	20	2	10	20	8	20	4	2	8	2	2	2	12	2	2	4	20	20	20
06 Oct 2021	4	20	20	2	10	20	8	20	4	2	8	2	2	2	12	2	2	4	20	20	20
07 Oct 2021	3	11	16	2	7	15	5	15	3	2	5	2	2	2	7	2	2	3	16	11	20
08 Oct 2021	3	11	16	2	7	15	5	15	3	2	5	2	2	2	7	2	2	3	16	11	20
09 Oct 2021	3	11	16	2	7	15	5	15	3	2	5	2	2	2	7	2	2	3	16	11	20
10 Oct 2021	3	11	16	2	7	15	5	15	3	2	5	2	2	2	7	2	2	3	16	11	20
11 Oct 2021	2	4	12	2	4	10	8	14	4	2	8	2	2	2	2	2	2	2	12	6	20
12 Oct 2021	2	4	12	2	4	10	8	14	4	2	8	2	2	2	2	2	2	2	12	6	20
13 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
14 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
15 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
16 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
17 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
18 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
19 Oct 2021	3	12	7	11	7	6	14	12	7	21	10	11	2	2	2	2	2	3	7	13	20
20 Oct 2021	2	4	12	2	4	10	8	14	10	2	12	10	2	2	2	2	2	4	12	20	20
21 Oct 2021	2	4	12	2	4	10	8	14	10	2	12	10	2	2	2	2	2	4	12	20	20
22 Oct 2021	3	12	16	11	7	15	14	27	45	21	16	15	2	2	7	2	2	21	8	16	20
23 Oct 2021	3	12	16	11	7	15	14	27	45	21	16	15	2	2	7	2	2	21	8	16	20
24 Oct 2021	3	12	16	11	7	15	14	27	45	21	16	15	2	2	7	2	2	21	8	16	20
25 Oct 2021	3	12	16	11	7	15	14	27	45	21	16	15	2	2	7	2	2	21	8	16	20
26 Oct 2021	3	12	16	11	7	15	14	27	45	21	16	15	2	2	7	2	2	21	8	16	20
27 Oct 2021	4	20	20	2	4	10	20	14	10	2	12	10	2	2	2	2	2	4	20	20	20
28 Oct 2021	3	12	16	2	3	6	14	12	7	2	10	6	2	2	2	2	2	3	16	20	20
29 Oct 2021	3	12	16	2	3	6	14	12	7	2	10	6	2	2	2	2	2	3	16	20	20
30 Oct 2021	3	12	16	2	3	6	14	12	7	2	10	6	2	2	2	2	2	3	16	20	20
31 Oct 2021	3	12	16	2	3	6	14	12	7	2	10	6	2	2	2	2	2	3	16	20	20

* Median calculated using n<5

Table 3.6

Summary of compliance at the SBOO kelp stations with the Ocean Plan's Statistical Threshold standard for total coliform bacteria, which states that total coliform density shall not exceed 230 CFU/100 mL in more than 10% of samples per station by depth, per month.

Date	I19			I24			I25			I26			I32			I39			I40		
	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
October	E	E	E	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	E	IC	IC	

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.7

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

Station	Date	Time	Depth	Total	Fecal	Entero	Temp	XMS	DO	Sal	pH
I19	04 Oct 2021	1120	2	4e	<2	4e	18.2	75.69	8.3	33.44	8.1
I19	04 Oct 2021	1120	6	<20	<2	2e	17.0	74.55	8.5	33.41	8.1
I19	04 Oct 2021	1120	11	12e	2e	2e	16.6	75.46	8.4	33.42	8.1
I19	11 Oct 2021	1048	2	<2	<2	<2	16.4	76.23	8.0	33.39	8.0
I19	11 Oct 2021	1048	6	4e	<2	<2	15.1	74.88	7.3	33.40	7.9
I19	11 Oct 2021	1048	11	<2	2e	<2	14.4	75.15	7.2	33.38	7.9
I19	20 Oct 2021	1038	2	2e	<2	<2	16.3	77.43	8.2	33.57	8.1
I19	20 Oct 2021	1038	6	4e	<2	<2	15.2	71.84	7.8	33.43	8.0
I19	20 Oct 2021	1038	11	20e	<2	<2	14.7	69.97	7.4	33.40	8.0
I19	27 Oct 2021	1058	2	500	60	4e	13.9	64.00	7.2	33.45	7.9
I19	27 Oct 2021	1058	6	420	36e	12e	13.4	46.76	6.4	33.45	7.8
I19	27 Oct 2021	1058	11	260e	48	4e	12.8	41.67	5.9	33.49	7.8
I24	04 Oct 2021	1143	2	2e	<2	<2	18.3	74.38	8.7	33.41	8.1
I24	04 Oct 2021	1143	6	10e	<2	2e	15.9	78.45	8.2	33.45	8.0
I24	04 Oct 2021	1143	11	10e	<2	<2	15.8	67.32	7.7	33.42	8.0
I24	11 Oct 2021	1107	2	<20	2e	<2	16.9	74.59	8.1	33.38	8.0
I24	11 Oct 2021	1107	6	4e	2e	<2	15.1	78.23	7.6	33.48	8.0
I24	11 Oct 2021	1107	11	<2	<2	2e	14.1	66.38	7.1	33.37	7.9
I24	20 Oct 2021	1058	2	<2	<2	<2	17.2	79.09	8.0	33.49	8.1
I24	20 Oct 2021	1058	6	2e	2e	<2	16.4	77.14	7.8	33.52	8.1
I24	20 Oct 2021	1058	11	20e	10e	6e	14.8	75.24	7.2	33.43	8.0
I24	27 Oct 2021	1121	2	<2	<2	<2	15.7	80.57	7.7	33.48	8.0
I24	27 Oct 2021	1121	6	<2	<2	2e	13.9	72.85	7.1	33.49	7.9
I24	27 Oct 2021	1121	11	<2	<2	<2	13.2	68.53	6.4	33.44	7.9
I25	04 Oct 2021	1150	2	8e	<2	<2	18.2	73.96	8.6	33.45	8.1
I25	04 Oct 2021	1150	6	10e	<2	2e	16.1	73.30	7.9	33.42	8.0
I25	04 Oct 2021	1150	9	4e	<2	<2	16.0	71.94	7.7	33.41	8.0
I25	11 Oct 2021	1114	2	<20	<2	2e	16.9	75.59	8.2	33.39	8.0
I25	11 Oct 2021	1114	6	14e	2e	<2	16.2	74.44	7.8	33.43	8.0
I25	11 Oct 2021	1114	9	10e	<2	<2	14.5	77.74	7.5	33.40	7.9
I25	20 Oct 2021	1104	2	<2	<2	<2	17.0	78.39	7.9	33.48	8.1
I25	20 Oct 2021	1104	6	40e	4e	6e	16.1	81.68	7.8	33.49	8.1
I25	20 Oct 2021	1104	9	80e	6e	8e	14.8	82.12	7.3	33.37	8.0
I25	27 Oct 2021	1124	2	20e	6e	2e	14.5	64.21	7.6	33.49	7.9
I25	27 Oct 2021	1124	6	2e	<2	2e	13.7	73.24	7.1	33.50	7.9
I25	27 Oct 2021	1124	9	<2	<2	2e	13.1	69.86	6.3	33.44	7.8
I26	04 Oct 2021	1159	2	2e	<2	<2	17.8	72.87	8.2	33.41	8.1
I26	04 Oct 2021	1159	6	8e	2e	<2	16.6	72.57	8.0	33.43	8.0
I26	04 Oct 2021	1159	9	<2	<2	<2	16.2	75.03	7.7	33.41	8.0

Station	Date	Time	Depth	Total	Fecal	Enteric	Temp	XMS	DO	Sal	pH
I26	11 Oct 2021	1123	2	40e	4e	<2	16.8	74.00	8.2	33.39	8.0
I26	11 Oct 2021	1123	6	12e	6e	<2	16.3	75.68	7.8	33.40	8.0
I26	11 Oct 2021	1123	9	<20	<2	<2	13.8	81.85	7.6	33.39	8.0
I26	20 Oct 2021	1114	2	2e	<2	<2	17.4	81.14	8.0	33.54	8.1
I26	20 Oct 2021	1114	6	20e	<2	<2	15.5	82.73	7.7	33.45	8.1
I26	20 Oct 2021	1114	9	10e	4e	2e	15.0	83.02	7.5	33.39	8.0
I26	27 Oct 2021	1136	2	<2	<2	<2	15.4	68.41	7.8	33.45	8.0
I26	27 Oct 2021	1136	6	<2	<2	<2	13.2	84.80	6.8	33.45	7.9
I26	27 Oct 2021	1136	9	<2	<2	<2	13.1	72.43	6.3	33.45	7.8
I32	04 Oct 2021	1215	2	<20	4e	<2	17.9	71.98	8.4	33.44	8.1
I32	04 Oct 2021	1215	6	<2	2e	<2	16.6	72.52	8.2	33.45	8.1
I32	04 Oct 2021	1215	9	<2	<2	<2	16.2	67.29	7.8	33.40	8.0
I32	11 Oct 2021	1136	2	2e	2e	<2	15.4	74.05	7.8	33.01	8.0
I32	11 Oct 2021	1136	6	2e	<2	<2	14.4	76.20	7.5	33.42	7.9
I32	11 Oct 2021	1136	9	2e	<2	<2	13.9	76.20	7.2	33.38	7.9
I32	20 Oct 2021	1127	2	2e	<2	<2	15.8	78.09	7.8	33.49	8.1
I32	20 Oct 2021	1127	6	2e	<2	2e	15.4	78.94	7.6	33.41	8.0
I32	20 Oct 2021	1127	9	<20	2e	<2	15.2	79.83	7.5	33.41	8.0
I32	27 Oct 2021	1149	2	<2	<2	<2	14.4	44.95	7.7	33.45	7.9
I32	27 Oct 2021	1149	6	<2	<2	<2	13.9	57.71	7.1	33.49	7.9
I32	27 Oct 2021	1149	9	<2	<2	2e	13.1	56.12	6.3	33.46	7.8
I39	04 Oct 2021	1056	2	<2	<2	<2	18.8	83.88	8.5	33.47	8.1
I39	04 Oct 2021	1056	12	<2	<2	<2	16.8	81.49	8.5	33.45	8.1
I39	04 Oct 2021	1056	18	4e	<2	<2	15.1	75.49	7.4	33.44	8.0
I39	11 Oct 2021	1023	2	<2	<2	<2	17.6	78.73	8.2	33.41	8.0
I39	11 Oct 2021	1023	12	<2	<2	<2	15.6	83.37	7.8	33.39	8.0
I39	11 Oct 2021	1023	18	<2	<2	<2	13.1	84.19	7.0	33.41	7.9
I39	20 Oct 2021	1017	2	<2	2e	<2	17.4	84.61	7.9	33.55	8.1
I39	20 Oct 2021	1017	12	40e	<2	2e	16.9	84.72	7.8	33.52	8.1
I39	20 Oct 2021	1017	18	12e	4e	2e	14.0	85.38	7.3	33.41	8.0
I39	27 Oct 2021	1033	2	<2	<2	<2	14.9	76.11	7.5	33.45	7.9
I39	27 Oct 2021	1033	12	<2	<2	36e	12.8	87.49	6.6	33.44	7.8
I39	27 Oct 2021	1033	18	2e	<2	10e	12.4	81.20	6.1	33.47	7.8
I40	04 Oct 2021	1136	2	12e	<2	2e	17.9	74.34	8.4	33.43	8.1
I40	04 Oct 2021	1136	6	<20	<2	2e	16.6	76.02	8.4	33.42	8.1
I40	04 Oct 2021	1136	9	20e	<2	4e	16.2	67.87	7.8	33.41	8.0
I40	11 Oct 2021	1101	2	<2	<2	<2	16.4	74.80	8.0	33.39	8.0
I40	11 Oct 2021	1101	6	6e	<2	<2	15.3	72.15	7.5	33.41	7.9
I40	11 Oct 2021	1101	9	<20	2e	<2	14.4	67.29	7.2	33.39	7.9
I40	20 Oct 2021	1049	2	<20	<2	<2	17.0	76.04	7.9	33.55	8.1
I40	20 Oct 2021	1049	6	<20	<2	<2	14.8	75.78	7.6	33.44	8.0
I40	20 Oct 2021	1049	9	<20	<2	<2	14.8	65.97	7.3	33.40	8.0
I40	27 Oct 2021	1110	2	860	220e	6e	15.3	72.50	7.6	33.46	8.0
I40	27 Oct 2021	1110	6	200e	70	4e	13.8	74.55	6.9	33.52	7.9
I40	27 Oct 2021	1110	9	72	4e	2e	13.0	68.31	6.1	33.47	7.8

ns = not sampled

ND = no data

Table 3.8

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

Station	Date	Parameter	Value
I19	04 Oct 2021	Depth (m)	11
I19	04 Oct 2021	Arrive Time	1120
I19	04 Oct 2021	Depart Time	1126
I19	04 Oct 2021	Air Temp (C)	19.8
I19	04 Oct 2021	Weather	Rain
I19	04 Oct 2021	Visibility (mi)	12
I19	04 Oct 2021	Wind Speed (kts)	13.8
I19	04 Oct 2021	Wind Dir	SW
I19	04 Oct 2021	Water Color	Greenish-Brown
I19	04 Oct 2021	Wave Ht Low (ft)	4.6
I19	04 Oct 2021	Wave Period (sec)	11
I19	04 Oct 2021	Sea State	Calm
I19	04 Oct 2021	High Tide (ft)	5.71
I19	04 Oct 2021	High Tide Time	330
I19	04 Oct 2021	Low Tide (ft)	-0.07
I19	04 Oct 2021	Low Tide Time	918
I19	04 Oct 2021	Comments	none
I19	11 Oct 2021	Depth (m)	12
I19	11 Oct 2021	Arrive Time	1048
I19	11 Oct 2021	Depart Time	1050
I19	11 Oct 2021	Air Temp (C)	17.2
I19	11 Oct 2021	Weather	Overcast
I19	11 Oct 2021	Visibility (mi)	7
I19	11 Oct 2021	Wind Speed (kts)	12.8
I19	11 Oct 2021	Wind Dir	S
I19	11 Oct 2021	Water Color	Blue
I19	11 Oct 2021	Wave Ht Low (ft)	3.9
I19	11 Oct 2021	Wave Period (sec)	18
I19	11 Oct 2021	Sea State	Regular Swell
I19	11 Oct 2021	High Tide (ft)	5.54
I19	11 Oct 2021	High Tide Time	1936
I19	11 Oct 2021	Low Tide (ft)	0.13
I19	11 Oct 2021	Low Tide Time	342
I19	11 Oct 2021	Comments	none
I19	20 Oct 2021	Depth (m)	11
I19	20 Oct 2021	Arrive Time	1038
I19	20 Oct 2021	Depart Time	1041
I19	20 Oct 2021	Air Temp (C)	16.6
I19	20 Oct 2021	Weather	Clear
I19	20 Oct 2021	Visibility (mi)	12
I19	20 Oct 2021	Wind Speed (kts)	6.4
I19	20 Oct 2021	Wind Dir	NW
I19	20 Oct 2021	Water Color	Green
I19	20 Oct 2021	Wave Ht Low (ft)	3
I19	20 Oct 2021	Wave Period (sec)	12
I19	20 Oct 2021	Sea State	Calm
I19	20 Oct 2021	High Tide (ft)	5.64
I19	20 Oct 2021	High Tide Time	1624
I19	20 Oct 2021	Low Tide (ft)	0.26
I19	20 Oct 2021	Low Tide Time	2248
I19	20 Oct 2021	Comments	none
I19	27 Oct 2021	Depth (m)	11
I19	27 Oct 2021	Arrive Time	1058

Station	Date	Parameter	Value
I19	27 Oct 2021	Depart Time	1101
I19	27 Oct 2021	Air Temp (C)	16.9
I19	27 Oct 2021	Weather	Clear
I19	27 Oct 2021	Visibility (mi)	10
I19	27 Oct 2021	Wind Speed (kts)	8.2
I19	27 Oct 2021	Wind Dir	NW
I19	27 Oct 2021	Water Color	Green
I19	27 Oct 2021	Wave Ht Low (ft)	5.9
I19	27 Oct 2021	Wave Period (sec)	17
I19	27 Oct 2021	Sea State	Regular Swell
I19	27 Oct 2021	High Tide (ft)	4.4
I19	27 Oct 2021	High Tide Time	2000
I19	27 Oct 2021	Low Tide (ft)	0.89
I19	27 Oct 2021	Low Tide Time	442
I19	27 Oct 2021	Comments	none
I24	04 Oct 2021	Depth (m)	10
I24	04 Oct 2021	Arrive Time	1143
I24	04 Oct 2021	Depart Time	1146
I24	04 Oct 2021	Air Temp (C)	19.8
I24	04 Oct 2021	Weather	Drizzle
I24	04 Oct 2021	Visibility (mi)	12
I24	04 Oct 2021	Wind Speed (kts)	10
I24	04 Oct 2021	Wind Dir	SW
I24	04 Oct 2021	Water Color	Green
I24	04 Oct 2021	Wave Ht Low (ft)	4.6
I24	04 Oct 2021	Wave Period (sec)	11
I24	04 Oct 2021	Sea State	Light Chop
I24	04 Oct 2021	High Tide (ft)	5.71
I24	04 Oct 2021	High Tide Time	330
I24	04 Oct 2021	Low Tide (ft)	-0.07
I24	04 Oct 2021	Low Tide Time	918
I24	04 Oct 2021	Comments	Depth of 9m
I24	11 Oct 2021	Depth (m)	12
I24	11 Oct 2021	Arrive Time	1107
I24	11 Oct 2021	Depart Time	1110
I24	11 Oct 2021	Air Temp (C)	17.1
I24	11 Oct 2021	Weather	Overcast
I24	11 Oct 2021	Visibility (mi)	7
I24	11 Oct 2021	Wind Speed (kts)	13.7
I24	11 Oct 2021	Wind Dir	S
I24	11 Oct 2021	Water Color	Blue
I24	11 Oct 2021	Wave Ht Low (ft)	3.9
I24	11 Oct 2021	Wave Period (sec)	18
I24	11 Oct 2021	Sea State	Rough
I24	11 Oct 2021	High Tide (ft)	5.54
I24	11 Oct 2021	High Tide Time	1936
I24	11 Oct 2021	Low Tide (ft)	0.13
I24	11 Oct 2021	Low Tide Time	342
I24	11 Oct 2021	Comments	none
I24	20 Oct 2021	Depth (m)	10
I24	20 Oct 2021	Arrive Time	1058
I24	20 Oct 2021	Depart Time	1102
I24	20 Oct 2021	Air Temp (C)	16.4
I24	20 Oct 2021	Weather	Clear
I24	20 Oct 2021	Visibility (mi)	12
I24	20 Oct 2021	Wind Speed (kts)	6.3
I24	20 Oct 2021	Wind Dir	NW
I24	20 Oct 2021	Water Color	Green

Station	Date	Parameter	Value
I24	20 Oct 2021	Wave Ht Low (ft)	3
I24	20 Oct 2021	Wave Period (sec)	12
I24	20 Oct 2021	Sea State	Calm
I24	20 Oct 2021	High Tide (ft)	5.64
I24	20 Oct 2021	High Tide Time	1624
I24	20 Oct 2021	Low Tide (ft)	0.26
I24	20 Oct 2021	Low Tide Time	2248
I24	20 Oct 2021	Comments	none
I24	27 Oct 2021	Depth (m)	10
I24	27 Oct 2021	Arrive Time	1121
I24	27 Oct 2021	Depart Time	1121
I24	27 Oct 2021	Air Temp (C)	16.6
I24	27 Oct 2021	Weather	Clear
I24	27 Oct 2021	Visibility (mi)	10
I24	27 Oct 2021	Wind Speed (kts)	8.8
I24	27 Oct 2021	Wind Dir	NW
I24	27 Oct 2021	Water Color	Green
I24	27 Oct 2021	Wave Ht Low (ft)	5.9
I24	27 Oct 2021	Wave Period (sec)	17
I24	27 Oct 2021	Sea State	Regular Swell
I24	27 Oct 2021	High Tide (ft)	4.4
I24	27 Oct 2021	High Tide Time	2000
I24	27 Oct 2021	Low Tide (ft)	0.89
I24	27 Oct 2021	Low Tide Time	442
I24	27 Oct 2021	Comments	none
I25	04 Oct 2021	Depth (m)	9
I25	04 Oct 2021	Arrive Time	1150
I25	04 Oct 2021	Depart Time	1153
I25	04 Oct 2021	Air Temp (C)	19.9
I25	04 Oct 2021	Weather	Drizzle
I25	04 Oct 2021	Visibility (mi)	12
I25	04 Oct 2021	Wind Speed (kts)	2.7
I25	04 Oct 2021	Wind Dir	SW
I25	04 Oct 2021	Water Color	Green
I25	04 Oct 2021	Wave Ht Low (ft)	4.6
I25	04 Oct 2021	Wave Period (sec)	11
I25	04 Oct 2021	Sea State	Light Chop
I25	04 Oct 2021	High Tide (ft)	5.71
I25	04 Oct 2021	High Tide Time	330
I25	04 Oct 2021	Low Tide (ft)	-0.07
I25	04 Oct 2021	Low Tide Time	918
I25	04 Oct 2021	Comments	none
I25	11 Oct 2021	Depth (m)	10
I25	11 Oct 2021	Arrive Time	1114
I25	11 Oct 2021	Depart Time	1116
I25	11 Oct 2021	Air Temp (C)	17.1
I25	11 Oct 2021	Weather	Overcast
I25	11 Oct 2021	Visibility (mi)	7
I25	11 Oct 2021	Wind Speed (kts)	13.2
I25	11 Oct 2021	Wind Dir	S
I25	11 Oct 2021	Water Color	Green
I25	11 Oct 2021	Wave Ht Low (ft)	3.9
I25	11 Oct 2021	Wave Period (sec)	18
I25	11 Oct 2021	Sea State	Rough
I25	11 Oct 2021	High Tide (ft)	5.54
I25	11 Oct 2021	High Tide Time	1936
I25	11 Oct 2021	Low Tide (ft)	0.13
I25	11 Oct 2021	Low Tide Time	342

Station	Date	Parameter	Value
I25	11 Oct 2021	Comments	none
I25	20 Oct 2021	Depth (m)	10
I25	20 Oct 2021	Arrive Time	1104
I25	20 Oct 2021	Depart Time	1106
I25	20 Oct 2021	Air Temp (C)	16.5
I25	20 Oct 2021	Weather	Clear
I25	20 Oct 2021	Visibility (mi)	12
I25	20 Oct 2021	Wind Speed (kts)	7.4
I25	20 Oct 2021	Wind Dir	NW
I25	20 Oct 2021	Water Color	Green
I25	20 Oct 2021	Wave Ht Low (ft)	3
I25	20 Oct 2021	Wave Period (sec)	12
I25	20 Oct 2021	Sea State	Calm
I25	20 Oct 2021	High Tide (ft)	5.64
I25	20 Oct 2021	High Tide Time	1624
I25	20 Oct 2021	Low Tide (ft)	0.26
I25	20 Oct 2021	Low Tide Time	2248
I25	20 Oct 2021	Comments	none
I25	27 Oct 2021	Depth (m)	9
I25	27 Oct 2021	Arrive Time	1124
I25	27 Oct 2021	Depart Time	1126
I25	27 Oct 2021	Air Temp (C)	16.4
I25	27 Oct 2021	Weather	Clear
I25	27 Oct 2021	Visibility (mi)	10
I25	27 Oct 2021	Wind Speed (kts)	9
I25	27 Oct 2021	Wind Dir	NW
I25	27 Oct 2021	Water Color	Green
I25	27 Oct 2021	Wave Ht Low (ft)	5.9
I25	27 Oct 2021	Wave Period (sec)	17
I25	27 Oct 2021	Sea State	Regular Swell
I25	27 Oct 2021	High Tide (ft)	4.4
I25	27 Oct 2021	High Tide Time	2000
I25	27 Oct 2021	Low Tide (ft)	0.89
I25	27 Oct 2021	Low Tide Time	442
I25	27 Oct 2021	Comments	none
I26	04 Oct 2021	Depth (m)	9
I26	04 Oct 2021	Arrive Time	1159
I26	04 Oct 2021	Depart Time	1205
I26	04 Oct 2021	Air Temp (C)	19.8
I26	04 Oct 2021	Weather	Drizzle
I26	04 Oct 2021	Visibility (mi)	12
I26	04 Oct 2021	Wind Speed (kts)	2.7
I26	04 Oct 2021	Wind Dir	SW
I26	04 Oct 2021	Water Color	Green
I26	04 Oct 2021	Wave Ht Low (ft)	4.6
I26	04 Oct 2021	Wave Period (sec)	11
I26	04 Oct 2021	Sea State	Light Chop
I26	04 Oct 2021	High Tide (ft)	5.71
I26	04 Oct 2021	High Tide Time	330
I26	04 Oct 2021	Low Tide (ft)	-0.07
I26	04 Oct 2021	Low Tide Time	918
I26	04 Oct 2021	Comments	none
I26	11 Oct 2021	Depth (m)	10
I26	11 Oct 2021	Arrive Time	1123
I26	11 Oct 2021	Depart Time	1126
I26	11 Oct 2021	Air Temp (C)	17.3
I26	11 Oct 2021	Weather	Overcast

Station	Date	Parameter	Value
I26	11 Oct 2021	Visibility (mi)	7
I26	11 Oct 2021	Wind Speed (kts)	10.6
I26	11 Oct 2021	Wind Dir	S
I26	11 Oct 2021	Water Color	Green
I26	11 Oct 2021	Wave Ht Low (ft)	3.9
I26	11 Oct 2021	Wave Period (sec)	18
I26	11 Oct 2021	Sea State	Rough
I26	11 Oct 2021	High Tide (ft)	5.54
I26	11 Oct 2021	High Tide Time	1936
I26	11 Oct 2021	Low Tide (ft)	0.13
I26	11 Oct 2021	Low Tide Time	342
I26	11 Oct 2021	Comments	none
I26	20 Oct 2021	Depth (m)	10
I26	20 Oct 2021	Arrive Time	1114
I26	20 Oct 2021	Depart Time	1117
I26	20 Oct 2021	Air Temp (C)	16.4
I26	20 Oct 2021	Weather	Clear
I26	20 Oct 2021	Visibility (mi)	12
I26	20 Oct 2021	Wind Speed (kts)	8.4
I26	20 Oct 2021	Wind Dir	NW
I26	20 Oct 2021	Water Color	Green
I26	20 Oct 2021	Wave Ht Low (ft)	3
I26	20 Oct 2021	Wave Period (sec)	12
I26	20 Oct 2021	Sea State	Calm
I26	20 Oct 2021	High Tide (ft)	5.64
I26	20 Oct 2021	High Tide Time	1624
I26	20 Oct 2021	Low Tide (ft)	0.26
I26	20 Oct 2021	Low Tide Time	2248
I26	20 Oct 2021	Comments	none
I26	27 Oct 2021	Depth (m)	10
I26	27 Oct 2021	Arrive Time	1136
I26	27 Oct 2021	Depart Time	1136
I26	27 Oct 2021	Air Temp (C)	16.8
I26	27 Oct 2021	Weather	Clear
I26	27 Oct 2021	Visibility (mi)	10
I26	27 Oct 2021	Wind Speed (kts)	8
I26	27 Oct 2021	Wind Dir	NW
I26	27 Oct 2021	Water Color	Green
I26	27 Oct 2021	Wave Ht Low (ft)	5.9
I26	27 Oct 2021	Wave Period (sec)	17
I26	27 Oct 2021	Sea State	Regular Swell
I26	27 Oct 2021	High Tide (ft)	4.4
I26	27 Oct 2021	High Tide Time	2000
I26	27 Oct 2021	Low Tide (ft)	0.89
I26	27 Oct 2021	Low Tide Time	442
I26	27 Oct 2021	Comments	none
I32	04 Oct 2021	Depth (m)	10
I32	04 Oct 2021	Arrive Time	1215
I32	04 Oct 2021	Depart Time	1218
I32	04 Oct 2021	Air Temp (C)	19.7
I32	04 Oct 2021	Weather	Partly Cloudy
I32	04 Oct 2021	Visibility (mi)	12
I32	04 Oct 2021	Wind Speed (kts)	3.3
I32	04 Oct 2021	Wind Dir	SW
I32	04 Oct 2021	Water Color	Green
I32	04 Oct 2021	Wave Ht Low (ft)	4.6
I32	04 Oct 2021	Wave Period (sec)	11
I32	04 Oct 2021	Sea State	Calm

Station	Date	Parameter	Value
I32	04 Oct 2021	High Tide (ft)	5.71
I32	04 Oct 2021	High Tide Time	330
I32	04 Oct 2021	Low Tide (ft)	-0.07
I32	04 Oct 2021	Low Tide Time	918
I32	04 Oct 2021	Comments	none
I32	11 Oct 2021	Depth (m)	12
I32	11 Oct 2021	Arrive Time	1136
I32	11 Oct 2021	Depart Time	1140
I32	11 Oct 2021	Air Temp (C)	17.1
I32	11 Oct 2021	Weather	Overcast
I32	11 Oct 2021	Visibility (mi)	7
I32	11 Oct 2021	Wind Speed (kts)	12.2
I32	11 Oct 2021	Wind Dir	S
I32	11 Oct 2021	Water Color	Green
I32	11 Oct 2021	Wave Ht Low (ft)	3.9
I32	11 Oct 2021	Wave Period (sec)	18
I32	11 Oct 2021	Sea State	Rough
I32	11 Oct 2021	High Tide (ft)	5.54
I32	11 Oct 2021	High Tide Time	1936
I32	11 Oct 2021	Low Tide (ft)	0.13
I32	11 Oct 2021	Low Tide Time	342
I32	11 Oct 2021	Comments	none
I32	20 Oct 2021	Depth (m)	11
I32	20 Oct 2021	Arrive Time	1127
I32	20 Oct 2021	Depart Time	1129
I32	20 Oct 2021	Air Temp (C)	16.5
I32	20 Oct 2021	Weather	Clear
I32	20 Oct 2021	Visibility (mi)	12
I32	20 Oct 2021	Wind Speed (kts)	6.2
I32	20 Oct 2021	Wind Dir	NW
I32	20 Oct 2021	Water Color	Green
I32	20 Oct 2021	Wave Ht Low (ft)	3
I32	20 Oct 2021	Wave Period (sec)	12
I32	20 Oct 2021	Sea State	Calm
I32	20 Oct 2021	High Tide (ft)	5.64
I32	20 Oct 2021	High Tide Time	1624
I32	20 Oct 2021	Low Tide (ft)	0.26
I32	20 Oct 2021	Low Tide Time	2248
I32	20 Oct 2021	Comments	none
I32	27 Oct 2021	Depth (m)	11
I32	27 Oct 2021	Arrive Time	1146
I32	27 Oct 2021	Depart Time	1148
I32	27 Oct 2021	Air Temp (C)	16.9
I32	27 Oct 2021	Weather	Clear
I32	27 Oct 2021	Visibility (mi)	10
I32	27 Oct 2021	Wind Speed (kts)	7.9
I32	27 Oct 2021	Wind Dir	NW
I32	27 Oct 2021	Water Color	Brown
I32	27 Oct 2021	Wave Ht Low (ft)	5.9
I32	27 Oct 2021	Wave Period (sec)	17
I32	27 Oct 2021	Sea State	Regular Swell
I32	27 Oct 2021	High Tide (ft)	4.4
I32	27 Oct 2021	High Tide Time	2000
I32	27 Oct 2021	Low Tide (ft)	0.89
I32	27 Oct 2021	Low Tide Time	442
I32	27 Oct 2021	Comments	none
I39	04 Oct 2021	Depth (m)	19

Station	Date	Parameter	Value
I39	04 Oct 2021	Arrive Time	1056
I39	04 Oct 2021	Depart Time	1100
I39	04 Oct 2021	Air Temp (C)	19.8
I39	04 Oct 2021	Weather	Clear
I39	04 Oct 2021	Visibility (mi)	12
I39	04 Oct 2021	Wind Speed (kts)	4.8
I39	04 Oct 2021	Wind Dir	SW
I39	04 Oct 2021	Water Color	Blue
I39	04 Oct 2021	Wave Ht Low (ft)	4.6
I39	04 Oct 2021	Wave Period (sec)	11
I39	04 Oct 2021	Sea State	Calm
I39	04 Oct 2021	High Tide (ft)	5.71
I39	04 Oct 2021	High Tide Time	330
I39	04 Oct 2021	Low Tide (ft)	-0.07
I39	04 Oct 2021	Low Tide Time	918
I39	04 Oct 2021	Comments	none
I39	11 Oct 2021	Depth (m)	20
I39	11 Oct 2021	Arrive Time	1023
I39	11 Oct 2021	Depart Time	1027
I39	11 Oct 2021	Air Temp (C)	17.8
I39	11 Oct 2021	Weather	Overcast
I39	11 Oct 2021	Visibility (mi)	7
I39	11 Oct 2021	Wind Speed (kts)	11.9
I39	11 Oct 2021	Wind Dir	S
I39	11 Oct 2021	Water Color	Blue
I39	11 Oct 2021	Wave Ht Low (ft)	3.9
I39	11 Oct 2021	Wave Period (sec)	18
I39	11 Oct 2021	Sea State	Regular Swell
I39	11 Oct 2021	High Tide (ft)	5.54
I39	11 Oct 2021	High Tide Time	1936
I39	11 Oct 2021	Low Tide (ft)	0.13
I39	11 Oct 2021	Low Tide Time	342
I39	11 Oct 2021	Comments	none
I39	20 Oct 2021	Depth (m)	19
I39	20 Oct 2021	Arrive Time	1017
I39	20 Oct 2021	Depart Time	1019
I39	20 Oct 2021	Air Temp (C)	16.2
I39	20 Oct 2021	Weather	Clear
I39	20 Oct 2021	Visibility (mi)	12
I39	20 Oct 2021	Wind Speed (kts)	3.8
I39	20 Oct 2021	Wind Dir	NE
I39	20 Oct 2021	Water Color	Green
I39	20 Oct 2021	Wave Ht Low (ft)	3
I39	20 Oct 2021	Wave Period (sec)	12
I39	20 Oct 2021	Sea State	Calm
I39	20 Oct 2021	High Tide (ft)	5.64
I39	20 Oct 2021	High Tide Time	1624
I39	20 Oct 2021	Low Tide (ft)	0.26
I39	20 Oct 2021	Low Tide Time	2248
I39	20 Oct 2021	Comments	none
I39	27 Oct 2021	Depth (m)	21
I39	27 Oct 2021	Arrive Time	1033
I39	27 Oct 2021	Depart Time	1039
I39	27 Oct 2021	Air Temp (C)	16.5
I39	27 Oct 2021	Weather	Clear
I39	27 Oct 2021	Visibility (mi)	10
I39	27 Oct 2021	Wind Speed (kts)	6
I39	27 Oct 2021	Wind Dir	N

Station	Date	Parameter	Value
I39	27 Oct 2021	Water Color	Green
I39	27 Oct 2021	Wave Ht Low (ft)	5.9
I39	27 Oct 2021	Wave Period (sec)	17
I39	27 Oct 2021	Sea State	Regular Swell
I39	27 Oct 2021	High Tide (ft)	4.4
I39	27 Oct 2021	High Tide Time	2000
I39	27 Oct 2021	Low Tide (ft)	0.89
I39	27 Oct 2021	Low Tide Time	442
I39	27 Oct 2021	Comments	none
I40	04 Oct 2021	Depth (m)	10
I40	04 Oct 2021	Arrive Time	1136
I40	04 Oct 2021	Depart Time	1138
I40	04 Oct 2021	Air Temp (C)	19.6
I40	04 Oct 2021	Weather	Rain
I40	04 Oct 2021	Visibility (mi)	12
I40	04 Oct 2021	Wind Speed (kts)	7.4
I40	04 Oct 2021	Wind Dir	SW
I40	04 Oct 2021	Water Color	Green
I40	04 Oct 2021	Wave Ht Low (ft)	4.6
I40	04 Oct 2021	Wave Period (sec)	11
I40	04 Oct 2021	Sea State	Light Chop
I40	04 Oct 2021	High Tide (ft)	5.71
I40	04 Oct 2021	High Tide Time	330
I40	04 Oct 2021	Low Tide (ft)	-0.07
I40	04 Oct 2021	Low Tide Time	918
I40	04 Oct 2021	Comments	none
I40	11 Oct 2021	Depth (m)	10
I40	11 Oct 2021	Arrive Time	1101
I40	11 Oct 2021	Depart Time	1102
I40	11 Oct 2021	Air Temp (C)	17.2
I40	11 Oct 2021	Weather	Overcast
I40	11 Oct 2021	Visibility (mi)	7
I40	11 Oct 2021	Wind Speed (kts)	12.5
I40	11 Oct 2021	Wind Dir	S
I40	11 Oct 2021	Water Color	Blue
I40	11 Oct 2021	Wave Ht Low (ft)	3.9
I40	11 Oct 2021	Wave Period (sec)	18
I40	11 Oct 2021	Sea State	Rough
I40	11 Oct 2021	High Tide (ft)	5.54
I40	11 Oct 2021	High Tide Time	1936
I40	11 Oct 2021	Low Tide (ft)	0.13
I40	11 Oct 2021	Low Tide Time	342
I40	11 Oct 2021	Comments	none
I40	20 Oct 2021	Depth (m)	11
I40	20 Oct 2021	Arrive Time	1049
I40	20 Oct 2021	Depart Time	1052
I40	20 Oct 2021	Air Temp (C)	16.3
I40	20 Oct 2021	Weather	Clear
I40	20 Oct 2021	Visibility (mi)	12
I40	20 Oct 2021	Wind Speed (kts)	4.4
I40	20 Oct 2021	Wind Dir	NW
I40	20 Oct 2021	Water Color	Green
I40	20 Oct 2021	Wave Ht Low (ft)	3
I40	20 Oct 2021	Wave Period (sec)	12
I40	20 Oct 2021	Sea State	Calm
I40	20 Oct 2021	High Tide (ft)	5.64
I40	20 Oct 2021	High Tide Time	1624
I40	20 Oct 2021	Low Tide (ft)	0.26

Station	Date	Parameter	Value
I40	20 Oct 2021	Low Tide Time	2248
I40	20 Oct 2021	Comments	none
I40	27 Oct 2021	Depth (m)	11
I40	27 Oct 2021	Arrive Time	1110
I40	27 Oct 2021	Depart Time	1112
I40	27 Oct 2021	Air Temp (C)	16.4
I40	27 Oct 2021	Weather	Clear
I40	27 Oct 2021	Visibility (mi)	10
I40	27 Oct 2021	Wind Speed (kts)	9.6
I40	27 Oct 2021	Wind Dir	NW
I40	27 Oct 2021	Water Color	Green
I40	27 Oct 2021	Wave Ht Low (ft)	5.9
I40	27 Oct 2021	Wave Period (sec)	17
I40	27 Oct 2021	Sea State	Regular Swell
I40	27 Oct 2021	High Tide (ft)	4.4
I40	27 Oct 2021	High Tide Time	2000
I40	27 Oct 2021	Low Tide (ft)	0.89
I40	27 Oct 2021	Low Tide Time	442
I40	27 Oct 2021	Comments	none

Table 3.9

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	04 Oct 2021	1	18.38	75.80	8.3	33.41	8.1	24.0	2.33
I19	04 Oct 2021	2	18.20	75.69	8.3	33.44	8.1	24.0	2.38
I19	04 Oct 2021	3	17.51	74.78	8.5	33.45	8.1	24.2	2.48
I19	04 Oct 2021	4	17.27	73.16	8.5	33.40	8.1	24.2	2.76
I19	04 Oct 2021	5	17.15	73.62	8.5	33.40	8.1	24.3	3.20
I19	04 Oct 2021	6	17.01	74.55	8.5	33.41	8.1	24.3	3.36
I19	04 Oct 2021	7	16.82	76.15	8.5	33.43	8.1	24.4	3.53
I19	04 Oct 2021	8	16.75	75.51	8.5	33.42	8.1	24.4	3.46
I19	04 Oct 2021	9	16.71	74.99	8.4	33.42	8.1	24.4	3.50
I19	04 Oct 2021	10	16.64	75.46	8.4	33.42	8.1	24.4	3.54
I19	11 Oct 2021	1	16.48	76.11	8.0	33.39	8.0	24.4	2.28
I19	11 Oct 2021	2	16.45	76.23	8.0	33.39	8.0	24.4	2.20
I19	11 Oct 2021	3	16.37	75.89	7.9	33.40	8.0	24.4	2.47
I19	11 Oct 2021	4	15.79	75.34	7.7	33.45	8.0	24.6	2.64
I19	11 Oct 2021	5	15.15	75.34	7.4	33.41	7.9	24.7	3.09
I19	11 Oct 2021	6	15.06	74.88	7.3	33.40	7.9	24.7	3.03
I19	11 Oct 2021	7	14.74	74.57	7.3	33.41	7.9	24.8	2.86
I19	11 Oct 2021	8	14.58	75.34	7.2	33.40	7.9	24.8	2.54
I19	11 Oct 2021	9	14.45	76.22	7.2	33.39	7.9	24.8	2.37
I19	11 Oct 2021	10	14.39	75.15	7.2	33.38	7.9	24.9	2.23
I19	20 Oct 2021	1	16.98	77.04	8.2	33.51	8.1	24.4	1.05
I19	20 Oct 2021	2	16.32	77.43	8.2	33.57	8.1	24.6	1.06
I19	20 Oct 2021	3	15.73	75.48	8.2	33.48	8.1	24.6	1.11
I19	20 Oct 2021	4	15.57	72.98	8.0	33.44	8.1	24.6	1.36
I19	20 Oct 2021	5	15.44	71.97	7.9	33.44	8.1	24.7	1.85
I19	20 Oct 2021	6	15.24	71.84	7.8	33.43	8.0	24.7	2.66
I19	20 Oct 2021	7	15.14	71.11	7.7	33.42	8.0	24.7	3.95
I19	20 Oct 2021	8	14.98	71.17	7.6	33.43	8.0	24.8	4.71
I19	20 Oct 2021	9	14.75	72.60	7.5	33.42	8.0	24.8	4.72
I19	20 Oct 2021	10	14.74	69.97	7.4	33.40	8.0	24.8	4.64
I19	27 Oct 2021	1	13.95	65.22	7.2	33.43	7.9	25.0	0.90
I19	27 Oct 2021	2	13.87	64.00	7.2	33.45	7.9	25.0	0.91
I19	27 Oct 2021	3	13.72	61.72	7.0	33.45	7.9	25.0	0.96
I19	27 Oct 2021	4	13.50	57.53	6.7	33.47	7.8	25.1	1.09
I19	27 Oct 2021	5	13.40	51.77	6.5	33.45	7.8	25.1	1.23
I19	27 Oct 2021	6	13.36	46.76	6.4	33.45	7.8	25.1	1.73
I19	27 Oct 2021	7	13.35	37.67	6.4	33.45	7.8	25.1	2.53
I19	27 Oct 2021	8	13.13	33.63	6.2	33.47	7.8	25.2	3.03
I19	27 Oct 2021	9	12.96	42.78	6.0	33.48	7.8	25.2	3.05
I19	27 Oct 2021	10	12.76	41.67	5.9	33.49	7.8	25.3	3.06
I24	04 Oct 2021	1	18.35	74.35	8.8	33.39	8.1	24.0	3.20
I24	04 Oct 2021	2	18.34	74.38	8.7	33.41	8.1	24.0	3.30
I24	04 Oct 2021	3	17.67	74.48	8.6	33.54	8.1	24.2	3.45
I24	04 Oct 2021	4	16.60	75.99	8.7	33.48	8.1	24.4	3.62
I24	04 Oct 2021	5	16.27	77.22	8.6	33.45	8.1	24.5	3.29
I24	04 Oct 2021	6	15.94	78.45	8.2	33.45	8.0	24.6	3.15
I24	04 Oct 2021	7	15.86	75.54	7.8	33.42	8.0	24.6	3.01
I24	04 Oct 2021	8	15.85	70.65	7.7	33.42	8.0	24.6	3.08
I24	04 Oct 2021	9	15.84	67.32	7.7	33.42	8.0	24.6	2.94
I24	11 Oct 2021	1	16.85	74.59	8.1	33.38	8.0	24.3	2.81

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I24	11 Oct 2021	2	16.86	74.59	8.1	33.38	8.0	24.3	2.79
I24	11 Oct 2021	3	16.82	74.63	8.1	33.39	8.0	24.3	2.91
I24	11 Oct 2021	4	16.59	74.33	8.0	33.40	8.0	24.4	2.85
I24	11 Oct 2021	5	16.37	75.99	7.8	33.42	8.0	24.4	3.21
I24	11 Oct 2021	6	15.13	78.23	7.6	33.48	8.0	24.8	3.35
I24	11 Oct 2021	7	14.59	82.17	7.6	33.40	7.9	24.8	3.10
I24	11 Oct 2021	8	14.62	82.17	7.5	33.38	7.9	24.8	2.45
I24	11 Oct 2021	9	14.29	75.29	7.2	33.40	7.9	24.9	2.07
I24	11 Oct 2021	10	14.06	69.12	7.0	33.40	7.9	24.9	1.83
I24	11 Oct 2021	11	14.05	66.38	7.1	33.37	7.9	24.9	1.58
I24	20 Oct 2021	1	17.18	79.09	8.0	33.49	8.1	24.3	0.93
I24	20 Oct 2021	2	17.17	79.09	8.0	33.49	8.1	24.3	0.94
I24	20 Oct 2021	3	17.12	79.06	8.0	33.50	8.1	24.3	0.98
I24	20 Oct 2021	4	16.90	78.81	8.0	33.51	8.1	24.4	1.02
I24	20 Oct 2021	5	16.79	77.96	7.9	33.50	8.1	24.4	1.14
I24	20 Oct 2021	6	16.39	77.14	7.8	33.52	8.1	24.5	1.43
I24	20 Oct 2021	7	16.03	77.16	7.7	33.47	8.1	24.6	1.70
I24	20 Oct 2021	8	15.55	78.80	7.6	33.48	8.1	24.7	1.80
I24	20 Oct 2021	9	15.13	80.36	7.4	33.43	8.0	24.7	1.85
I24	20 Oct 2021	10	14.85	75.24	7.2	33.43	8.0	24.8	1.80
I24	27 Oct 2021	1	15.74	80.95	7.7	33.47	8.0	24.6	0.89
I24	27 Oct 2021	2	15.70	80.57	7.7	33.48	8.0	24.6	0.92
I24	27 Oct 2021	3	15.38	80.85	7.6	33.51	8.0	24.7	0.95
I24	27 Oct 2021	4	14.84	78.51	7.6	33.53	8.0	24.9	1.06
I24	27 Oct 2021	5	14.35	74.89	7.4	33.51	7.9	25.0	1.11
I24	27 Oct 2021	6	13.90	72.85	7.1	33.49	7.9	25.0	1.29
I24	27 Oct 2021	7	13.48	73.68	6.8	33.49	7.9	25.1	1.41
I24	27 Oct 2021	8	13.26	72.98	6.6	33.45	7.9	25.1	1.47
I24	27 Oct 2021	9	13.23	70.49	6.5	33.44	7.9	25.1	1.38
I24	27 Oct 2021	10	13.23	69.67	6.4	33.44	7.9	25.1	1.50
I24	27 Oct 2021	11	13.24	68.53	6.4	33.44	7.9	25.1	1.52
I25	04 Oct 2021	1	18.34	73.90	8.8	33.38	8.1	24.0	3.29
I25	04 Oct 2021	2	18.20	73.96	8.6	33.45	8.1	24.0	3.45
I25	04 Oct 2021	3	16.93	75.58	8.8	33.53	8.1	24.4	3.58
I25	04 Oct 2021	4	16.49	76.81	8.6	33.45	8.1	24.4	3.61
I25	04 Oct 2021	5	16.11	75.19	8.2	33.45	8.0	24.5	3.44
I25	04 Oct 2021	6	16.05	73.30	7.9	33.42	8.0	24.5	3.38
I25	04 Oct 2021	7	16.04	72.27	7.8	33.41	8.0	24.5	3.18
I25	04 Oct 2021	8	16.04	72.03	7.7	33.41	8.0	24.5	2.94
I25	04 Oct 2021	9	16.04	71.94	7.7	33.41	8.0	24.5	2.71
I25	11 Oct 2021	1	16.90	75.49	8.2	33.39	8.0	24.3	2.12
I25	11 Oct 2021	2	16.90	75.59	8.2	33.39	8.0	24.3	2.18
I25	11 Oct 2021	3	16.88	75.51	8.2	33.39	8.0	24.3	2.32
I25	11 Oct 2021	4	16.84	74.46	8.1	33.40	8.0	24.3	2.42
I25	11 Oct 2021	5	16.76	74.20	8.1	33.40	8.0	24.3	3.06
I25	11 Oct 2021	6	16.22	74.44	7.8	33.43	8.0	24.5	3.66
I25	11 Oct 2021	7	15.68	74.60	7.6	33.45	8.0	24.6	3.73
I25	11 Oct 2021	8	15.22	77.77	7.5	33.42	8.0	24.7	3.58
I25	11 Oct 2021	9	14.47	77.74	7.5	33.40	7.9	24.9	3.04
I25	20 Oct 2021	1	17.00	78.33	7.9	33.48	8.1	24.4	1.08
I25	20 Oct 2021	2	17.00	78.39	7.9	33.48	8.1	24.4	1.05
I25	20 Oct 2021	3	16.80	78.63	7.9	33.51	8.1	24.4	1.05
I25	20 Oct 2021	4	16.65	78.97	7.9	33.47	8.1	24.4	1.08
I25	20 Oct 2021	5	16.57	79.52	7.8	33.47	8.1	24.4	1.25
I25	20 Oct 2021	6	16.12	81.68	7.8	33.49	8.1	24.6	1.37
I25	20 Oct 2021	7	15.33	82.81	7.6	33.46	8.1	24.7	1.49

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I25	20 Oct 2021	8	14.97	82.46	7.4	33.42	8.0	24.8	1.59
I25	20 Oct 2021	9	14.85	82.12	7.3	33.37	8.0	24.7	1.61
I25	27 Oct 2021	1	14.69	64.45	7.7	33.44	7.9	24.8	1.03
I25	27 Oct 2021	2	14.46	64.21	7.6	33.49	7.9	24.9	1.03
I25	27 Oct 2021	3	14.10	65.24	7.3	33.47	7.9	25.0	0.99
I25	27 Oct 2021	4	14.05	67.29	7.2	33.45	7.9	25.0	1.11
I25	27 Oct 2021	5	14.03	69.69	7.2	33.44	7.9	25.0	1.41
I25	27 Oct 2021	6	13.69	73.24	7.1	33.50	7.9	25.1	1.51
I25	27 Oct 2021	7	13.20	78.73	6.8	33.47	7.9	25.2	1.64
I25	27 Oct 2021	8	13.14	78.15	6.5	33.45	7.9	25.2	1.62
I25	27 Oct 2021	9	13.10	69.86	6.3	33.44	7.8	25.2	1.65
I26	04 Oct 2021	1	17.86	72.51	8.3	33.40	8.1	24.1	3.22
I26	04 Oct 2021	2	17.84	72.87	8.2	33.41	8.1	24.1	3.22
I26	04 Oct 2021	3	17.81	72.54	8.2	33.41	8.1	24.1	3.23
I26	04 Oct 2021	4	17.65	72.20	8.1	33.43	8.1	24.2	3.37
I26	04 Oct 2021	5	16.88	71.54	8.1	33.47	8.1	24.4	3.64
I26	04 Oct 2021	6	16.63	72.57	8.0	33.43	8.0	24.4	3.65
I26	04 Oct 2021	7	16.40	74.52	8.0	33.43	8.0	24.4	3.59
I26	04 Oct 2021	8	16.25	75.32	7.8	33.42	8.0	24.5	3.32
I26	04 Oct 2021	9	16.18	75.03	7.7	33.41	8.0	24.5	3.00
I26	11 Oct 2021	1	16.86	72.21	8.2	33.39	8.0	24.3	2.21
I26	11 Oct 2021	2	16.84	74.00	8.2	33.39	8.0	24.3	2.37
I26	11 Oct 2021	3	16.80	73.69	8.1	33.39	8.0	24.3	2.60
I26	11 Oct 2021	4	16.72	73.54	8.0	33.39	8.0	24.3	2.96
I26	11 Oct 2021	5	16.60	74.55	7.9	33.40	8.0	24.4	3.38
I26	11 Oct 2021	6	16.28	75.68	7.8	33.40	8.0	24.5	3.43
I26	11 Oct 2021	7	16.04	77.92	7.8	33.39	8.0	24.5	3.14
I26	11 Oct 2021	8	15.24	80.94	7.6	33.42	8.0	24.7	2.89
I26	11 Oct 2021	9	13.84	81.85	7.6	33.39	8.0	25.0	2.46
I26	20 Oct 2021	1	17.53	81.25	8.1	33.51	8.1	24.2	1.12
I26	20 Oct 2021	2	17.41	81.14	8.0	33.54	8.1	24.3	1.12
I26	20 Oct 2021	3	16.83	81.05	7.8	33.56	8.1	24.4	1.11
I26	20 Oct 2021	4	16.36	80.76	7.7	33.52	8.1	24.5	1.15
I26	20 Oct 2021	5	15.93	81.75	7.7	33.50	8.1	24.6	1.15
I26	20 Oct 2021	6	15.49	82.73	7.7	33.45	8.1	24.7	1.15
I26	20 Oct 2021	7	15.13	84.12	7.6	33.44	8.1	24.7	1.25
I26	20 Oct 2021	8	14.97	83.51	7.5	33.40	8.0	24.7	1.24
I26	20 Oct 2021	9	14.97	83.02	7.5	33.39	8.0	24.7	1.24
I26	27 Oct 2021	1	15.53	69.15	7.8	33.45	8.0	24.7	1.04
I26	27 Oct 2021	2	15.45	68.41	7.8	33.45	8.0	24.7	1.08
I26	27 Oct 2021	3	14.97	68.83	7.5	33.52	8.0	24.8	1.14
I26	27 Oct 2021	4	13.77	79.19	7.2	33.54	7.9	25.1	1.21
I26	27 Oct 2021	5	13.31	84.32	6.9	33.45	7.9	25.1	1.22
I26	27 Oct 2021	6	13.17	84.80	6.8	33.45	7.9	25.2	1.17
I26	27 Oct 2021	7	13.11	80.47	6.5	33.45	7.9	25.2	1.13
I26	27 Oct 2021	8	13.11	76.37	6.4	33.45	7.9	25.2	1.04
I26	27 Oct 2021	9	13.11	72.43	6.3	33.45	7.8	25.2	1.11
I32	04 Oct 2021	1	18.17	72.00	8.6	33.42	8.1	24.0	3.41
I32	04 Oct 2021	2	17.95	71.98	8.4	33.44	8.1	24.1	3.45
I32	04 Oct 2021	3	17.74	72.44	8.4	33.43	8.1	24.1	3.55
I32	04 Oct 2021	4	17.51	72.56	8.3	33.44	8.1	24.2	3.63
I32	04 Oct 2021	5	16.98	71.89	8.2	33.46	8.1	24.3	3.45
I32	04 Oct 2021	6	16.58	72.52	8.2	33.45	8.1	24.4	3.43
I32	04 Oct 2021	7	16.25	73.76	8.0	33.43	8.0	24.5	3.51
I32	04 Oct 2021	8	16.16	69.15	7.8	33.42	8.0	24.5	3.44

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I32	04 Oct 2021	9	16.23	67.29	7.8	33.40	8.0	24.5	3.05
I32	04 Oct 2021	10	16.13	66.87	7.8	33.42	8.0	24.5	2.75
I32	11 Oct 2021	1	15.41	69.95	7.8	33.36	8.0	24.6	1.14
I32	11 Oct 2021	2	15.43	74.05	7.8	33.01	8.0	24.3	1.12
I32	11 Oct 2021	3	15.36	79.06	7.8	33.38	8.0	24.6	1.15
I32	11 Oct 2021	4	15.18	79.31	7.7	33.38	8.0	24.7	1.23
I32	11 Oct 2021	5	14.90	79.40	7.6	33.40	8.0	24.8	1.33
I32	11 Oct 2021	6	14.43	76.20	7.5	33.42	7.9	24.9	1.44
I32	11 Oct 2021	7	14.08	78.74	7.4	33.39	7.9	24.9	1.54
I32	11 Oct 2021	8	13.94	79.25	7.3	33.39	7.9	25.0	1.51
I32	11 Oct 2021	9	13.89	76.20	7.2	33.38	7.9	25.0	1.46
I32	11 Oct 2021	10	13.89	74.36	7.2	33.38	7.9	25.0	1.41
I32	20 Oct 2021	1	16.23	78.05	7.9	33.46	8.1	24.5	1.18
I32	20 Oct 2021	2	15.77	78.09	7.8	33.49	8.1	24.6	1.17
I32	20 Oct 2021	3	15.64	77.58	7.7	33.43	8.1	24.6	1.18
I32	20 Oct 2021	4	15.50	77.35	7.7	33.43	8.1	24.7	1.30
I32	20 Oct 2021	5	15.43	77.94	7.6	33.42	8.0	24.7	1.36
I32	20 Oct 2021	6	15.40	78.94	7.6	33.41	8.0	24.7	1.43
I32	20 Oct 2021	7	15.32	79.57	7.6	33.41	8.0	24.7	1.54
I32	20 Oct 2021	8	15.26	79.98	7.6	33.40	8.0	24.7	1.58
I32	20 Oct 2021	9	15.16	79.83	7.5	33.41	8.0	24.7	1.57
I32	20 Oct 2021	10	15.05	79.02	7.4	33.41	8.0	24.7	1.58
I32	27 Oct 2021	1	14.45	45.37	7.7	33.44	7.9	24.9	1.67
I32	27 Oct 2021	2	14.38	44.95	7.7	33.45	7.9	24.9	1.72
I32	27 Oct 2021	3	14.30	45.29	7.5	33.45	7.9	24.9	1.83
I32	27 Oct 2021	4	14.22	47.39	7.4	33.46	7.9	25.0	1.85
I32	27 Oct 2021	5	14.19	49.63	7.3	33.44	7.9	24.9	2.14
I32	27 Oct 2021	6	13.88	57.71	7.1	33.49	7.9	25.0	2.45
I32	27 Oct 2021	7	13.59	65.10	6.8	33.49	7.9	25.1	2.39
I32	27 Oct 2021	8	13.27	68.14	6.5	33.48	7.9	25.2	2.37
I32	27 Oct 2021	9	13.11	56.12	6.3	33.46	7.8	25.2	2.41
I32	27 Oct 2021	10	12.99	49.00	6.2	33.46	7.8	25.2	2.37
I39	04 Oct 2021	1	18.90	83.97	8.4	33.45	8.1	23.9	0.94
I39	04 Oct 2021	2	18.78	83.88	8.5	33.47	8.1	23.9	0.96
I39	04 Oct 2021	3	18.72	83.83	8.5	33.46	8.1	23.9	0.98
I39	04 Oct 2021	4	18.68	84.11	8.4	33.46	8.1	23.9	1.03
I39	04 Oct 2021	5	18.59	84.08	8.4	33.46	8.1	23.9	1.05
I39	04 Oct 2021	6	18.49	83.71	8.4	33.46	8.1	24.0	1.07
I39	04 Oct 2021	7	18.23	83.65	8.4	33.49	8.1	24.1	1.10
I39	04 Oct 2021	8	17.54	83.41	8.6	33.50	8.1	24.2	1.23
I39	04 Oct 2021	9	17.23	83.03	8.7	33.45	8.1	24.3	1.30
I39	04 Oct 2021	10	17.10	82.49	8.6	33.44	8.1	24.3	1.41
I39	04 Oct 2021	11	17.00	82.31	8.7	33.43	8.1	24.3	1.57
I39	04 Oct 2021	12	16.78	81.49	8.5	33.45	8.1	24.4	1.62
I39	04 Oct 2021	13	16.13	81.12	8.2	33.51	8.1	24.6	1.78
I39	04 Oct 2021	14	15.51	79.03	7.9	33.48	8.0	24.7	1.94
I39	04 Oct 2021	15	15.34	77.22	7.7	33.44	8.0	24.7	2.02
I39	04 Oct 2021	16	15.26	76.40	7.7	33.44	8.0	24.7	2.18
I39	04 Oct 2021	17	15.19	76.03	7.6	33.43	8.0	24.7	2.30
I39	04 Oct 2021	18	15.06	75.49	7.4	33.44	8.0	24.8	2.32
I39	11 Oct 2021	1	17.61	77.57	8.2	33.40	8.0	24.1	2.31
I39	11 Oct 2021	2	17.61	78.73	8.2	33.41	8.0	24.2	2.33
I39	11 Oct 2021	3	17.60	78.97	8.2	33.41	8.0	24.2	2.43
I39	11 Oct 2021	4	17.57	78.99	8.1	33.42	8.0	24.2	2.56
I39	11 Oct 2021	5	17.25	79.48	8.1	33.44	8.0	24.3	2.64
I39	11 Oct 2021	6	16.61	81.18	8.0	33.45	8.0	24.4	2.74

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I39	11 Oct 2021	7	16.18	82.33	8.0	33.42	8.0	24.5	2.67
I39	11 Oct 2021	8	16.09	82.71	8.0	33.40	8.0	24.5	2.67
I39	11 Oct 2021	9	16.00	82.94	7.9	33.39	8.0	24.5	2.46
I39	11 Oct 2021	10	15.97	83.01	8.0	33.38	8.0	24.5	2.34
I39	11 Oct 2021	11	15.82	83.21	7.9	33.39	8.0	24.6	2.25
I39	11 Oct 2021	12	15.59	83.37	7.8	33.39	8.0	24.6	2.14
I39	11 Oct 2021	13	14.59	84.67	7.5	33.51	8.0	24.9	1.98
I39	11 Oct 2021	14	13.39	85.45	7.2	33.45	7.9	25.1	1.77
I39	11 Oct 2021	15	13.21	85.60	7.0	33.42	7.9	25.1	1.37
I39	11 Oct 2021	16	13.12	85.54	6.9	33.41	7.9	25.1	1.20
I39	11 Oct 2021	17	13.06	84.72	6.9	33.41	7.9	25.2	1.07
I39	11 Oct 2021	18	13.07	84.19	7.0	33.41	7.9	25.1	0.96
I39	20 Oct 2021	1	17.56	84.68	7.9	33.53	8.1	24.3	0.88
I39	20 Oct 2021	2	17.41	84.61	7.9	33.55	8.1	24.3	0.93
I39	20 Oct 2021	3	17.26	84.65	7.9	33.53	8.1	24.3	0.91
I39	20 Oct 2021	4	17.22	84.56	7.9	33.52	8.1	24.3	0.95
I39	20 Oct 2021	5	17.22	84.51	8.0	33.51	8.1	24.3	1.02
I39	20 Oct 2021	6	17.19	84.36	7.9	33.51	8.1	24.3	1.09
I39	20 Oct 2021	7	17.14	84.40	7.9	33.51	8.1	24.3	1.19
I39	20 Oct 2021	8	17.06	84.09	8.0	33.51	8.1	24.4	1.39
I39	20 Oct 2021	9	17.05	84.45	7.9	33.50	8.1	24.4	1.57
I39	20 Oct 2021	10	16.99	84.59	7.8	33.51	8.1	24.4	1.64
I39	20 Oct 2021	11	16.97	84.77	7.8	33.50	8.1	24.4	1.58
I39	20 Oct 2021	12	16.86	84.72	7.8	33.52	8.1	24.4	1.61
I39	20 Oct 2021	13	16.52	85.03	7.7	33.53	8.1	24.5	1.61
I39	20 Oct 2021	14	16.27	85.24	7.6	33.49	8.1	24.5	1.58
I39	20 Oct 2021	15	15.09	85.42	7.5	33.64	8.1	24.9	1.57
I39	20 Oct 2021	16	14.18	85.46	7.4	33.48	8.0	25.0	1.71
I39	20 Oct 2021	17	14.09	85.48	7.3	33.42	8.0	25.0	1.60
I39	20 Oct 2021	18	14.03	85.38	7.3	33.41	8.0	25.0	1.51
I39	27 Oct 2021	1	14.95	76.32	7.5	33.46	7.9	24.8	0.84
I39	27 Oct 2021	2	14.94	76.11	7.5	33.45	7.9	24.8	0.85
I39	27 Oct 2021	3	14.85	76.35	7.5	33.47	7.9	24.8	0.83
I39	27 Oct 2021	4	14.77	77.63	7.4	33.46	7.9	24.8	0.98
I39	27 Oct 2021	5	14.62	79.38	7.3	33.47	7.9	24.9	1.13
I39	27 Oct 2021	6	14.42	81.13	7.2	33.47	7.9	24.9	1.29
I39	27 Oct 2021	7	14.11	82.67	7.0	33.48	7.9	25.0	1.32
I39	27 Oct 2021	8	13.47	84.32	6.8	33.50	7.9	25.1	1.32
I39	27 Oct 2021	9	12.93	86.05	6.7	33.48	7.9	25.2	1.30
I39	27 Oct 2021	10	12.83	87.17	6.7	33.44	7.9	25.2	1.07
I39	27 Oct 2021	11	12.80	87.46	6.7	33.44	7.9	25.2	0.92
I39	27 Oct 2021	12	12.79	87.49	6.6	33.44	7.8	25.2	0.86
I39	27 Oct 2021	13	12.69	87.54	6.5	33.46	7.8	25.3	0.75
I39	27 Oct 2021	14	12.55	87.31	6.4	33.47	7.8	25.3	0.73
I39	27 Oct 2021	15	12.50	85.98	6.3	33.46	7.8	25.3	0.76
I39	27 Oct 2021	16	12.44	83.25	6.2	33.46	7.8	25.3	0.81
I39	27 Oct 2021	17	12.43	80.89	6.2	33.46	7.8	25.3	0.89
I39	27 Oct 2021	18	12.44	81.20	6.1	33.47	7.8	25.3	0.99
I40	04 Oct 2021	1	18.03	74.52	8.4	33.39	8.1	24.0	2.59
I40	04 Oct 2021	2	17.92	74.34	8.4	33.43	8.1	24.1	2.68
I40	04 Oct 2021	3	17.44	73.07	8.5	33.45	8.1	24.2	2.81
I40	04 Oct 2021	4	17.04	73.45	8.6	33.47	8.1	24.3	2.92
I40	04 Oct 2021	5	16.62	75.57	8.5	33.44	8.1	24.4	3.09
I40	04 Oct 2021	6	16.58	76.02	8.4	33.42	8.1	24.4	3.23
I40	04 Oct 2021	7	16.39	74.83	8.2	33.44	8.0	24.5	3.36
I40	04 Oct 2021	8	16.24	70.51	7.9	33.42	8.0	24.5	3.34
I40	04 Oct 2021	9	16.22	67.87	7.8	33.41	8.0	24.5	3.23
I40	04 Oct 2021	10	16.10	64.79	7.8	33.42	8.0	24.5	3.19

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I40	11 Oct 2021	1	16.41	74.24	8.0	33.39	8.0	24.4	1.84
I40	11 Oct 2021	2	16.41	74.80	8.0	33.39	8.0	24.4	1.86
I40	11 Oct 2021	3	16.37	76.42	8.0	33.39	8.0	24.4	1.84
I40	11 Oct 2021	4	16.03	76.32	7.8	33.41	8.0	24.5	2.05
I40	11 Oct 2021	5	15.60	75.78	7.6	33.42	8.0	24.6	2.34
I40	11 Oct 2021	6	15.26	72.15	7.5	33.41	7.9	24.7	2.67
I40	11 Oct 2021	7	14.95	56.09	7.4	33.41	7.9	24.8	2.85
I40	11 Oct 2021	8	14.59	60.49	7.2	33.39	7.9	24.8	2.86
I40	11 Oct 2021	9	14.44	67.29	7.2	33.39	7.9	24.9	3.03
I40	11 Oct 2021	10	14.34	55.53	7.2	33.38	7.9	24.9	2.99
I40	20 Oct 2021	1	17.24	76.07	8.0	33.50	8.1	24.3	1.11
I40	20 Oct 2021	2	17.01	76.04	7.9	33.55	8.1	24.4	1.12
I40	20 Oct 2021	3	16.15	76.38	8.0	33.54	8.1	24.6	1.17
I40	20 Oct 2021	4	15.76	76.83	7.9	33.51	8.1	24.7	1.28
I40	20 Oct 2021	5	15.18	77.27	7.8	33.49	8.1	24.8	1.60
I40	20 Oct 2021	6	14.85	75.78	7.6	33.44	8.0	24.8	1.93
I40	20 Oct 2021	7	14.81	70.73	7.4	33.41	8.0	24.8	2.54
I40	20 Oct 2021	8	14.79	68.31	7.4	33.41	8.0	24.8	2.84
I40	20 Oct 2021	9	14.79	65.97	7.3	33.40	8.0	24.8	3.15
I40	20 Oct 2021	10	14.78	65.30	7.3	33.40	8.0	24.8	3.13
I40	27 Oct 2021	1	15.35	74.88	7.6	33.46	8.0	24.7	0.90
I40	27 Oct 2021	2	15.28	72.50	7.6	33.46	8.0	24.7	0.88
I40	27 Oct 2021	3	15.12	73.87	7.5	33.48	8.0	24.8	0.90
I40	27 Oct 2021	4	14.92	73.38	7.4	33.48	8.0	24.8	0.97
I40	27 Oct 2021	5	14.43	73.52	7.2	33.56	8.0	25.0	1.06
I40	27 Oct 2021	6	13.80	74.55	6.9	33.52	7.9	25.1	1.25
I40	27 Oct 2021	7	13.58	74.62	6.6	33.45	7.9	25.1	1.37
I40	27 Oct 2021	8	13.30	74.66	6.4	33.49	7.9	25.2	1.39
I40	27 Oct 2021	9	13.03	68.31	6.1	33.47	7.8	25.2	1.37
I40	27 Oct 2021	10	12.96	47.30	5.9	33.46	7.8	25.2	1.54

NA = not available

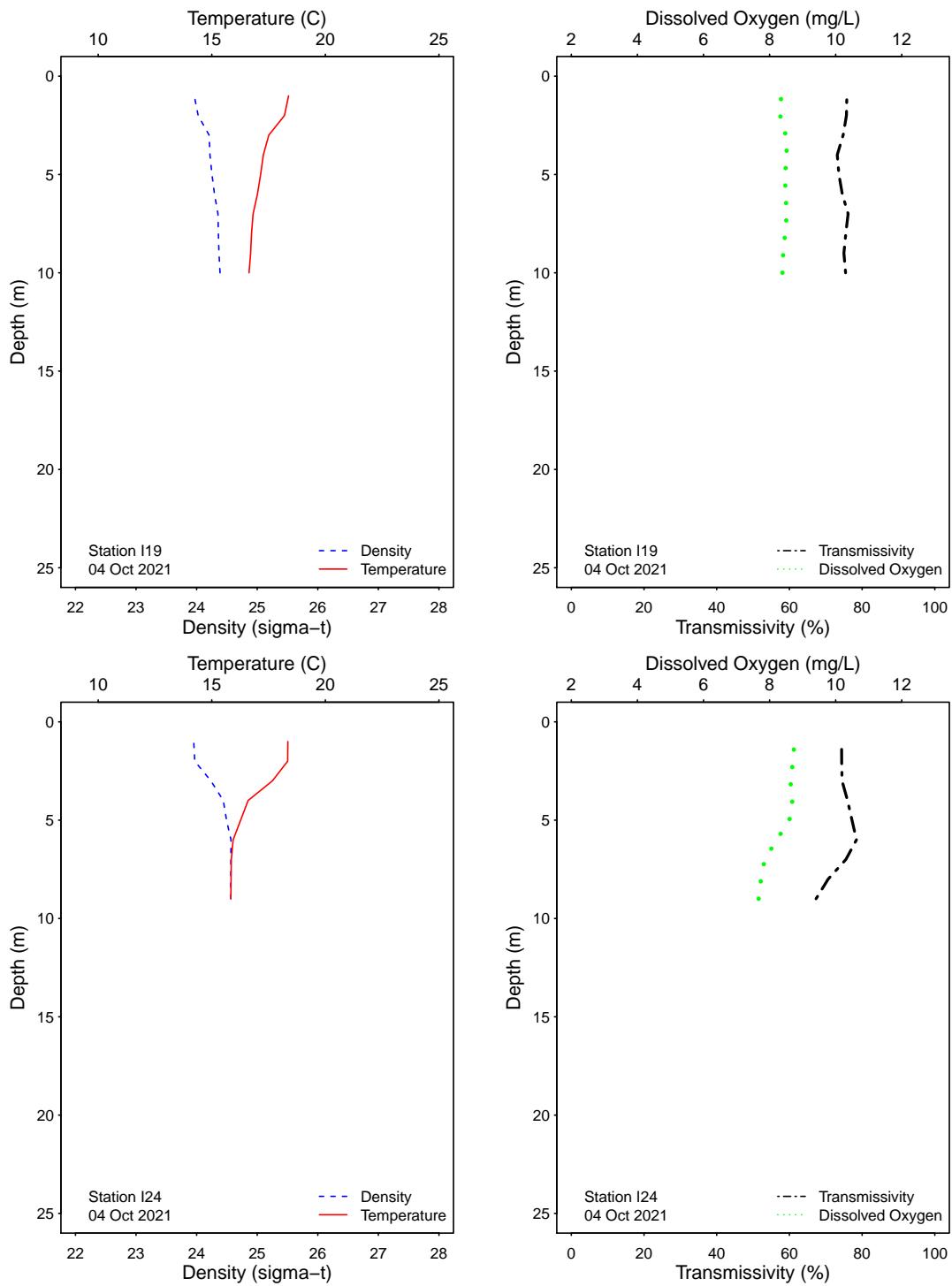


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

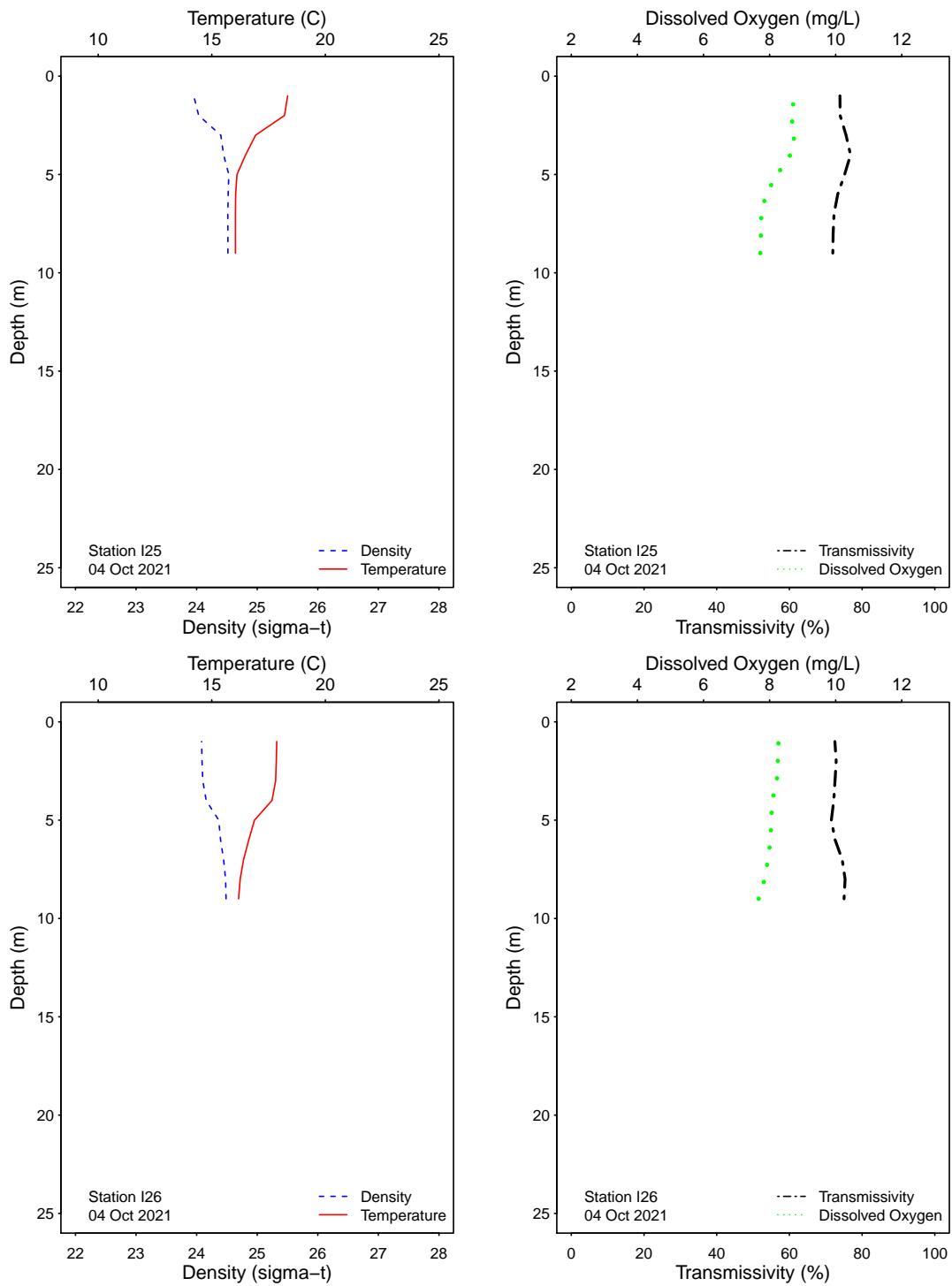


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

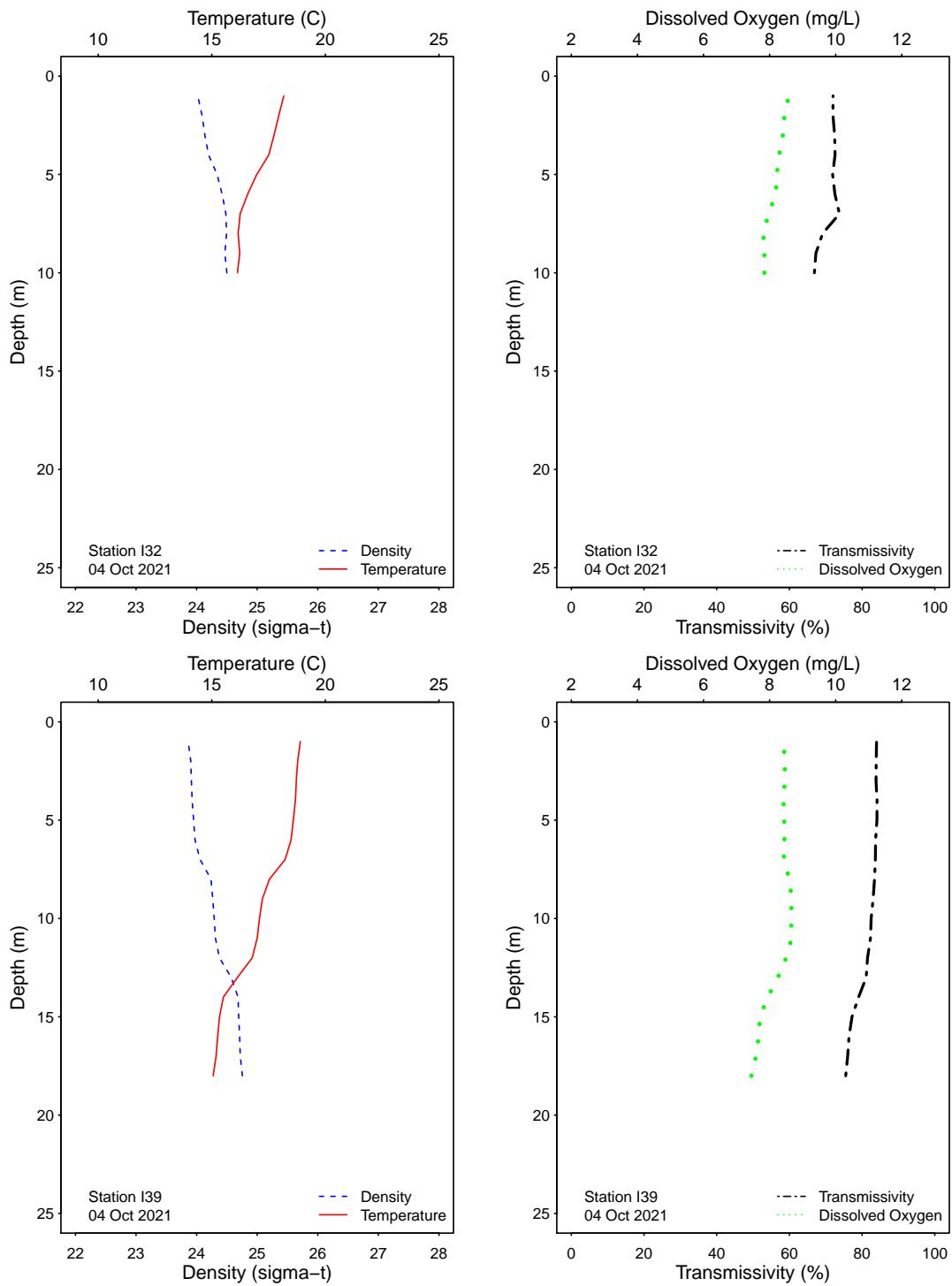


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

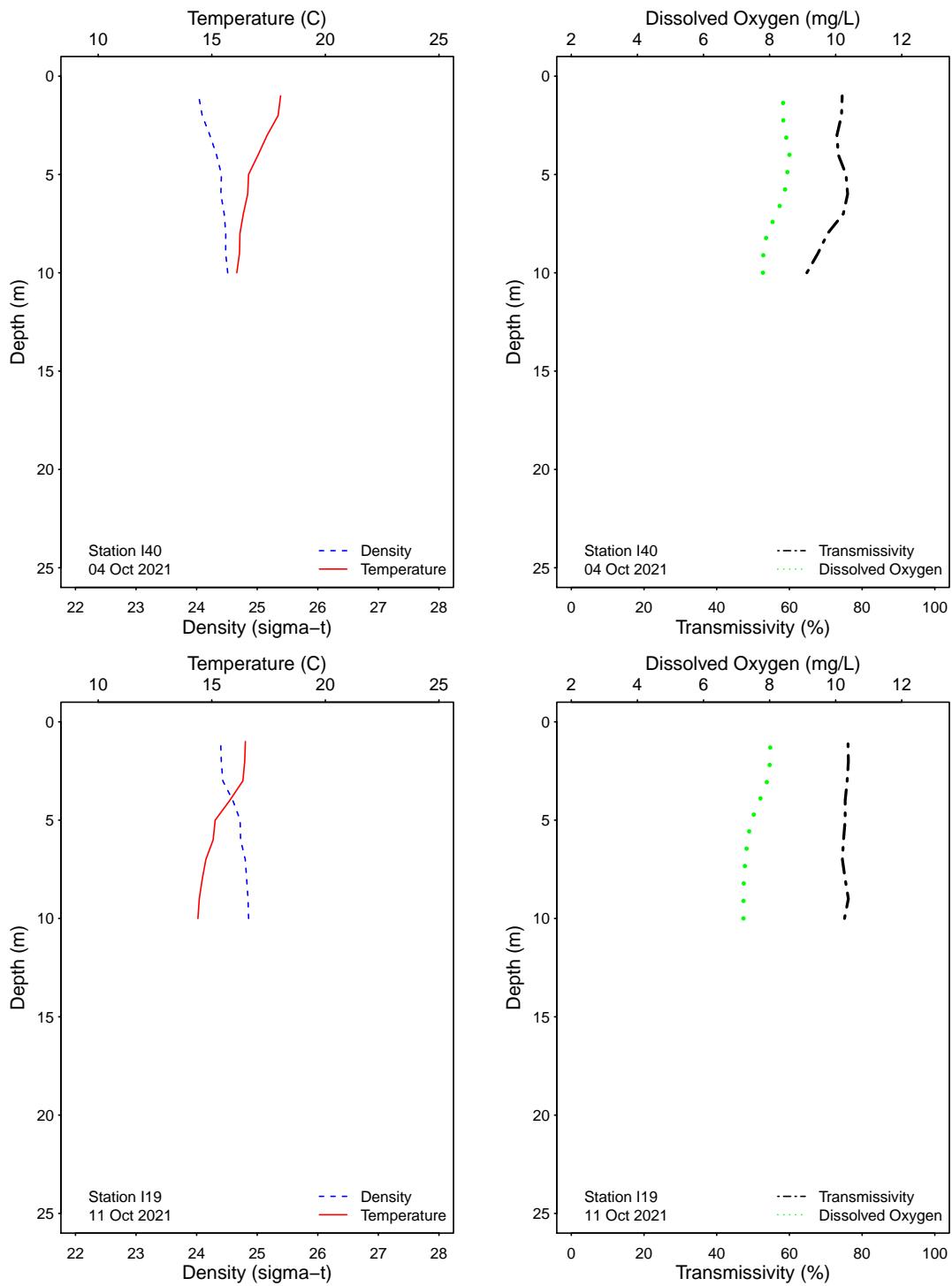


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

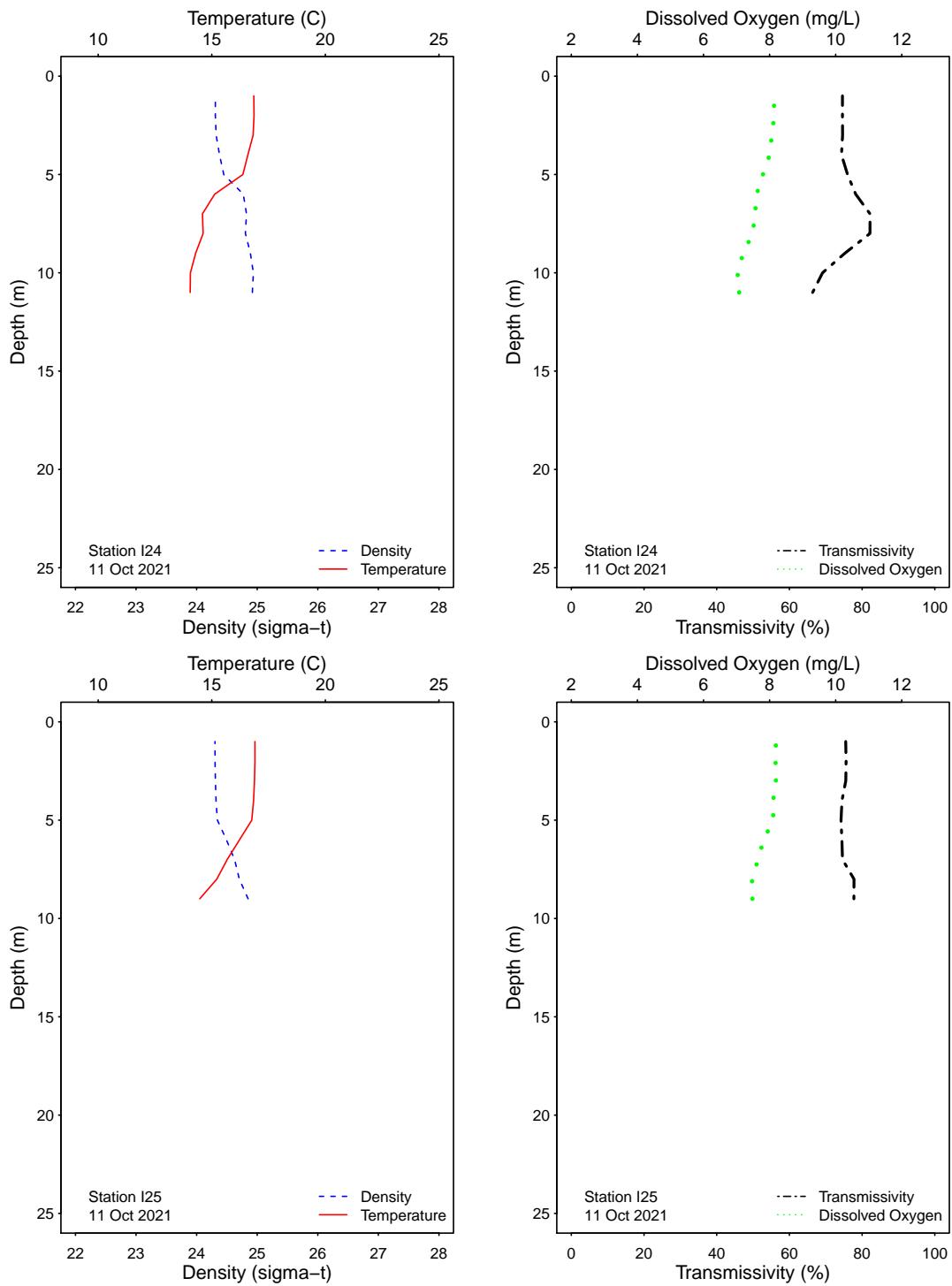


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

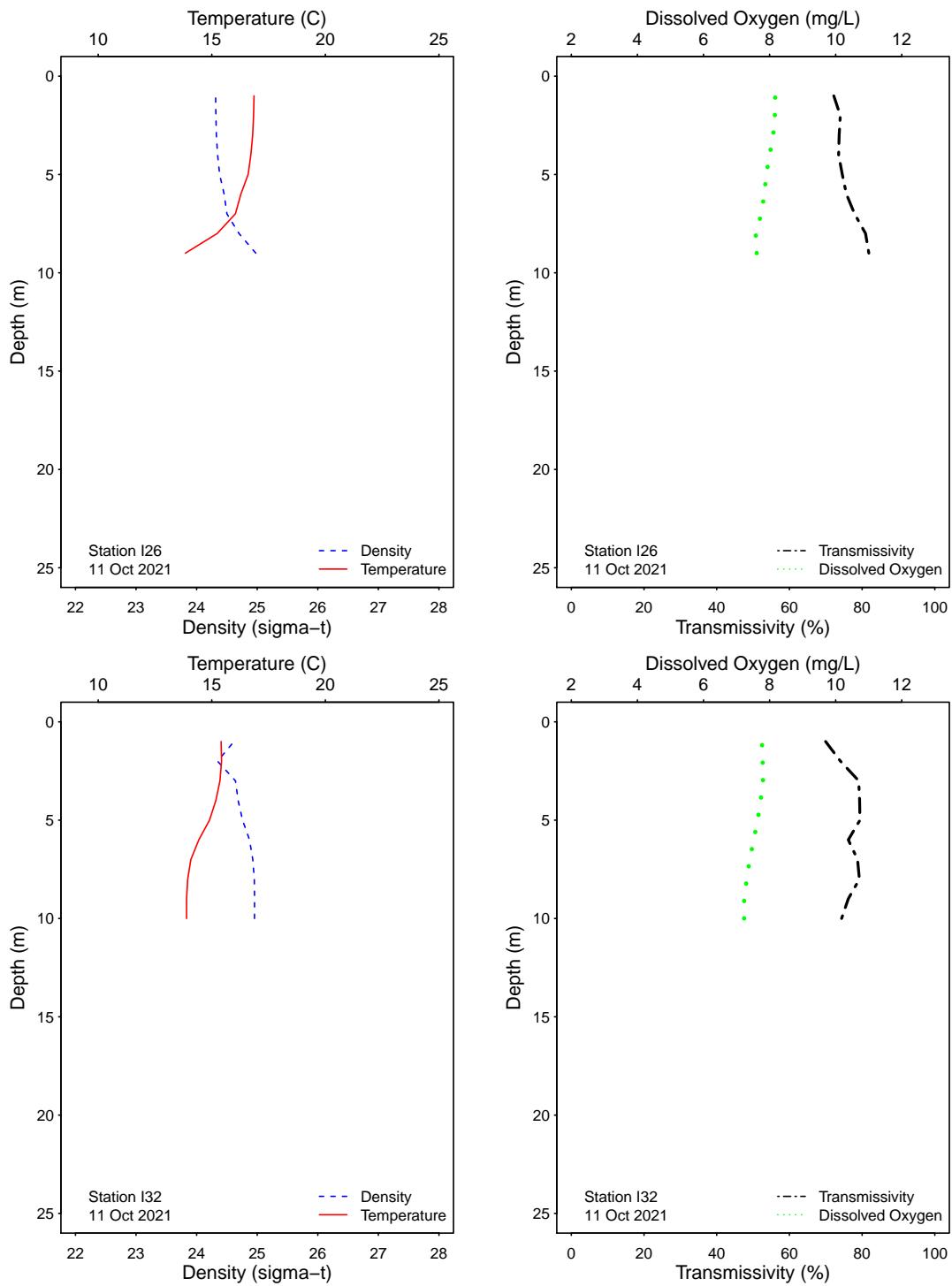


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

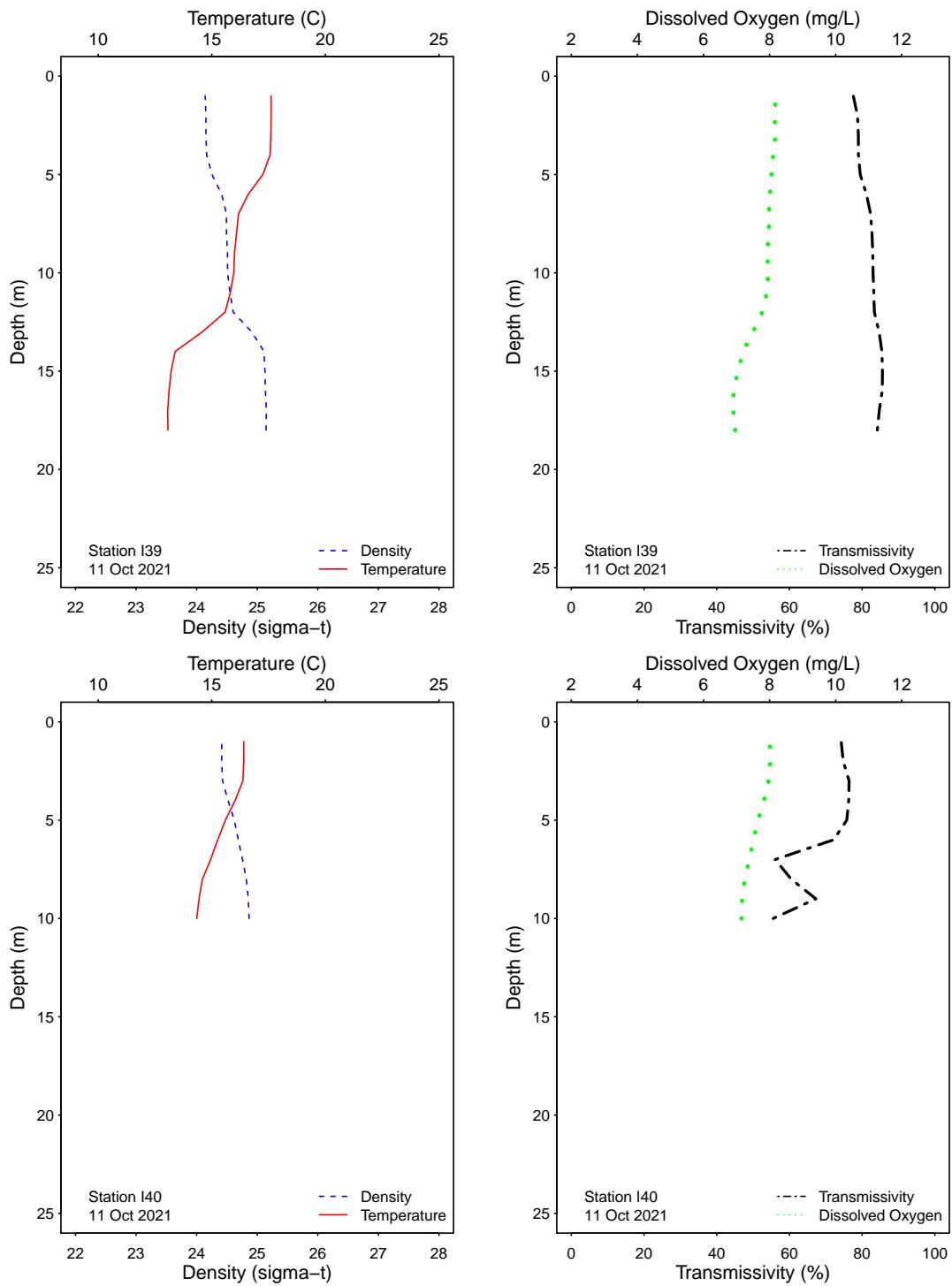


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

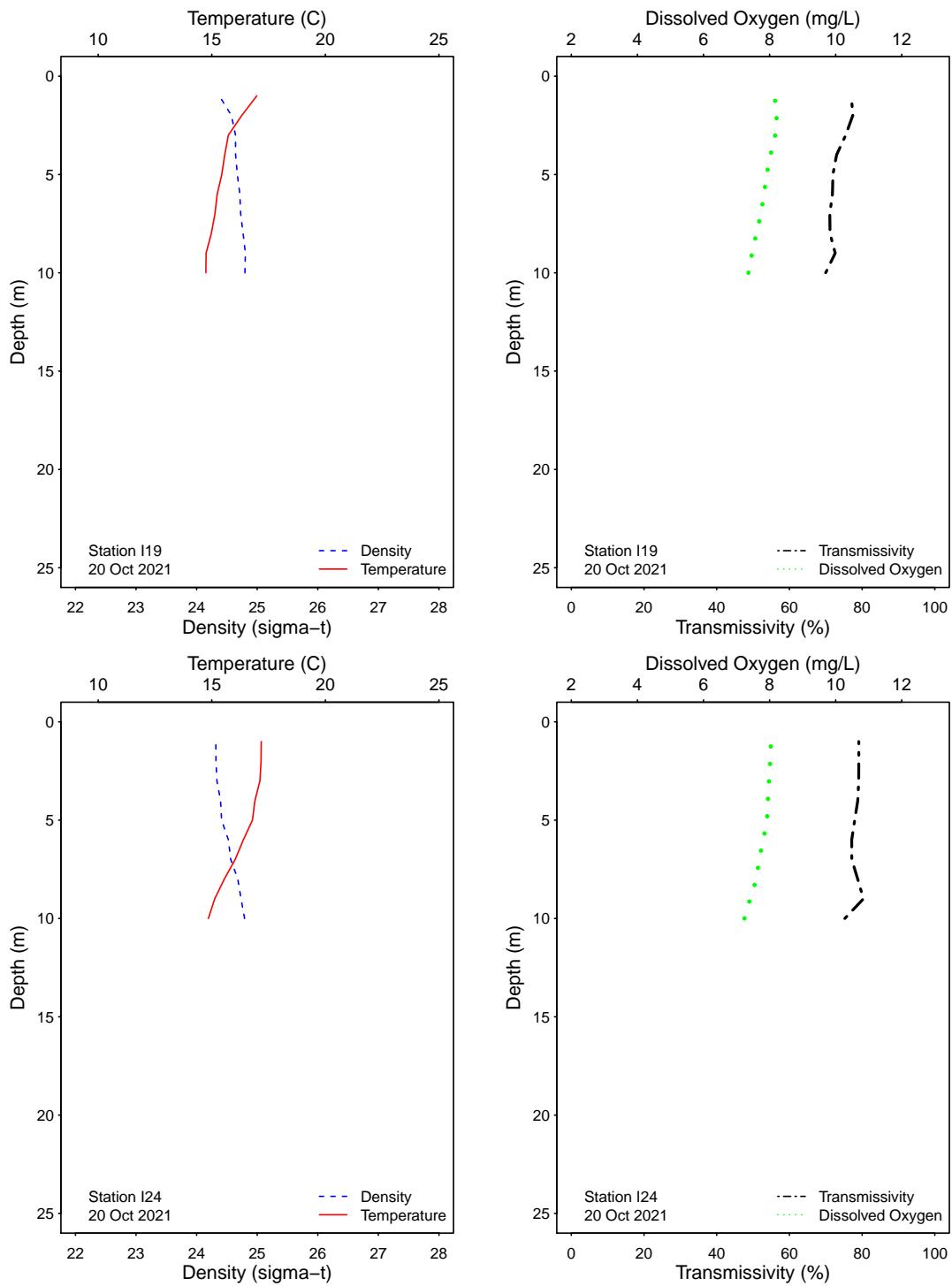


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

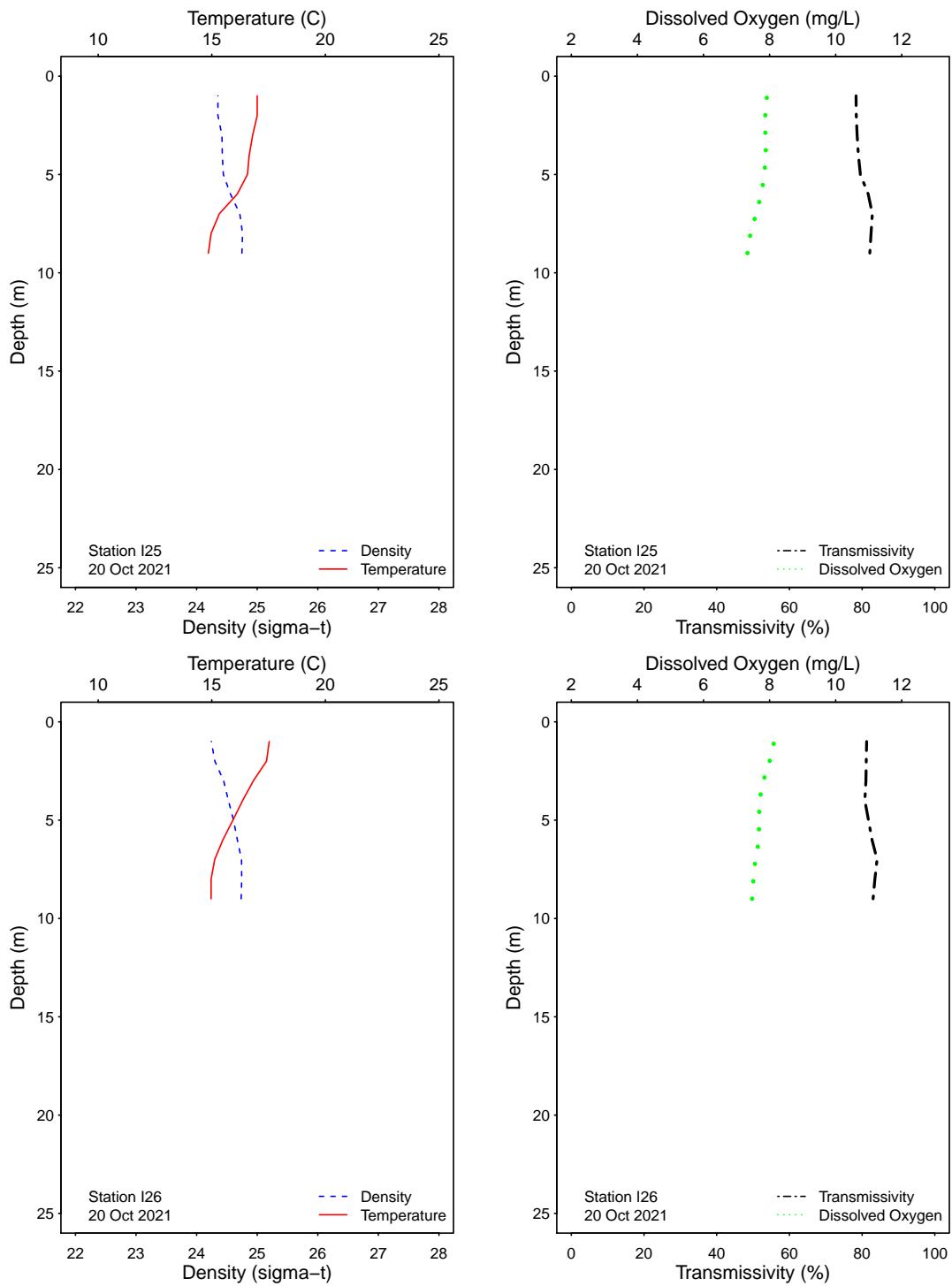


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

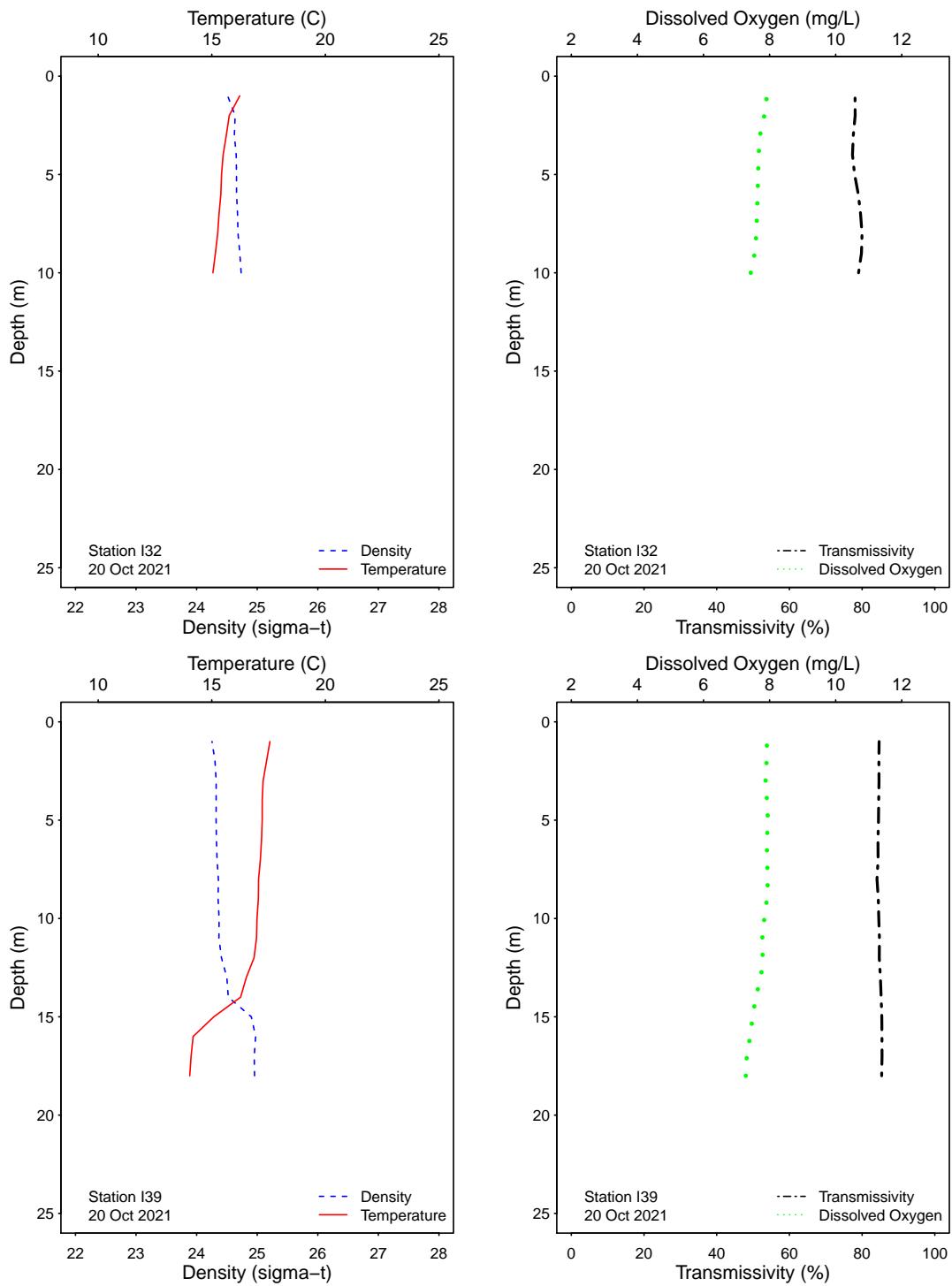


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

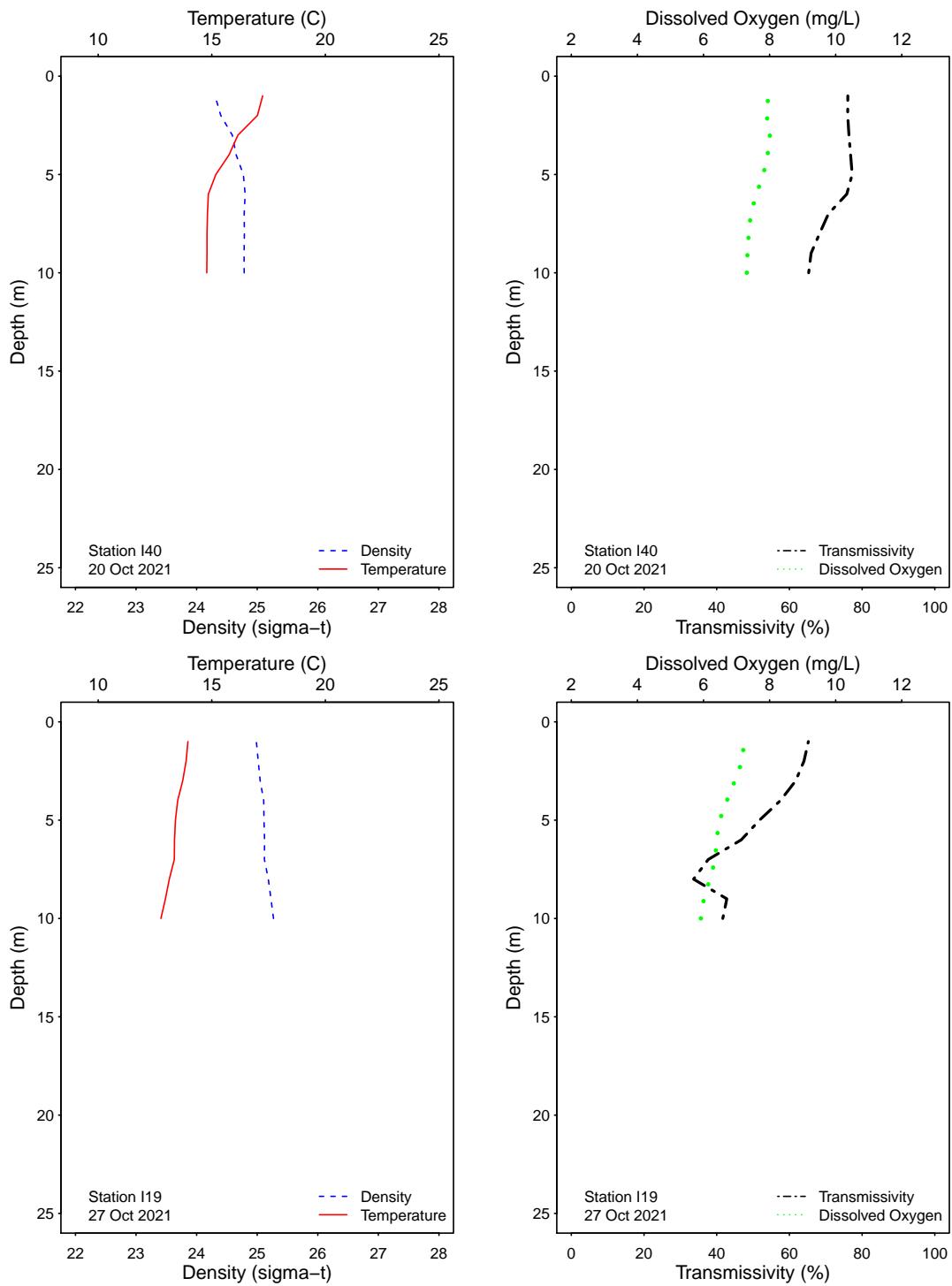


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

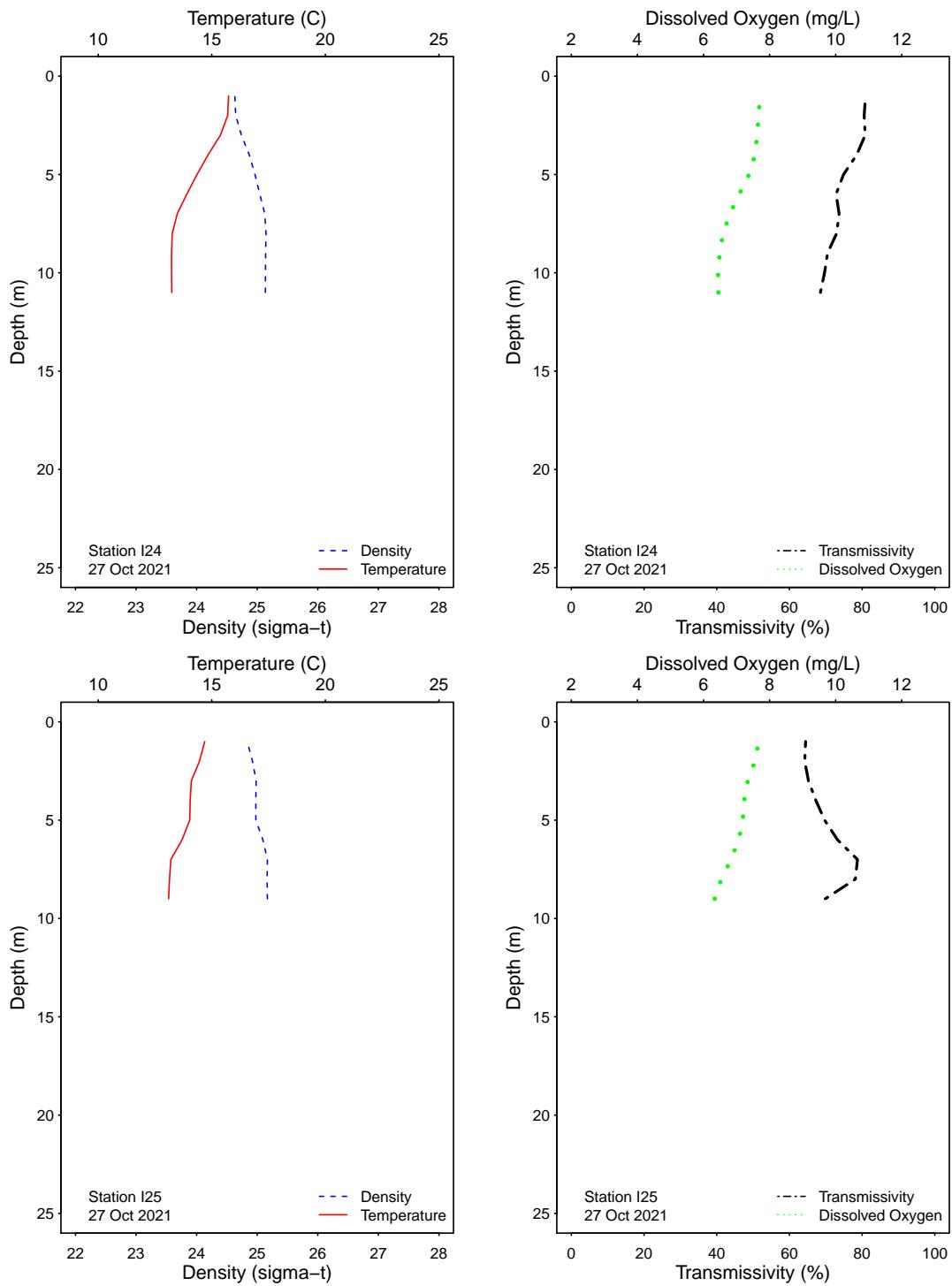


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

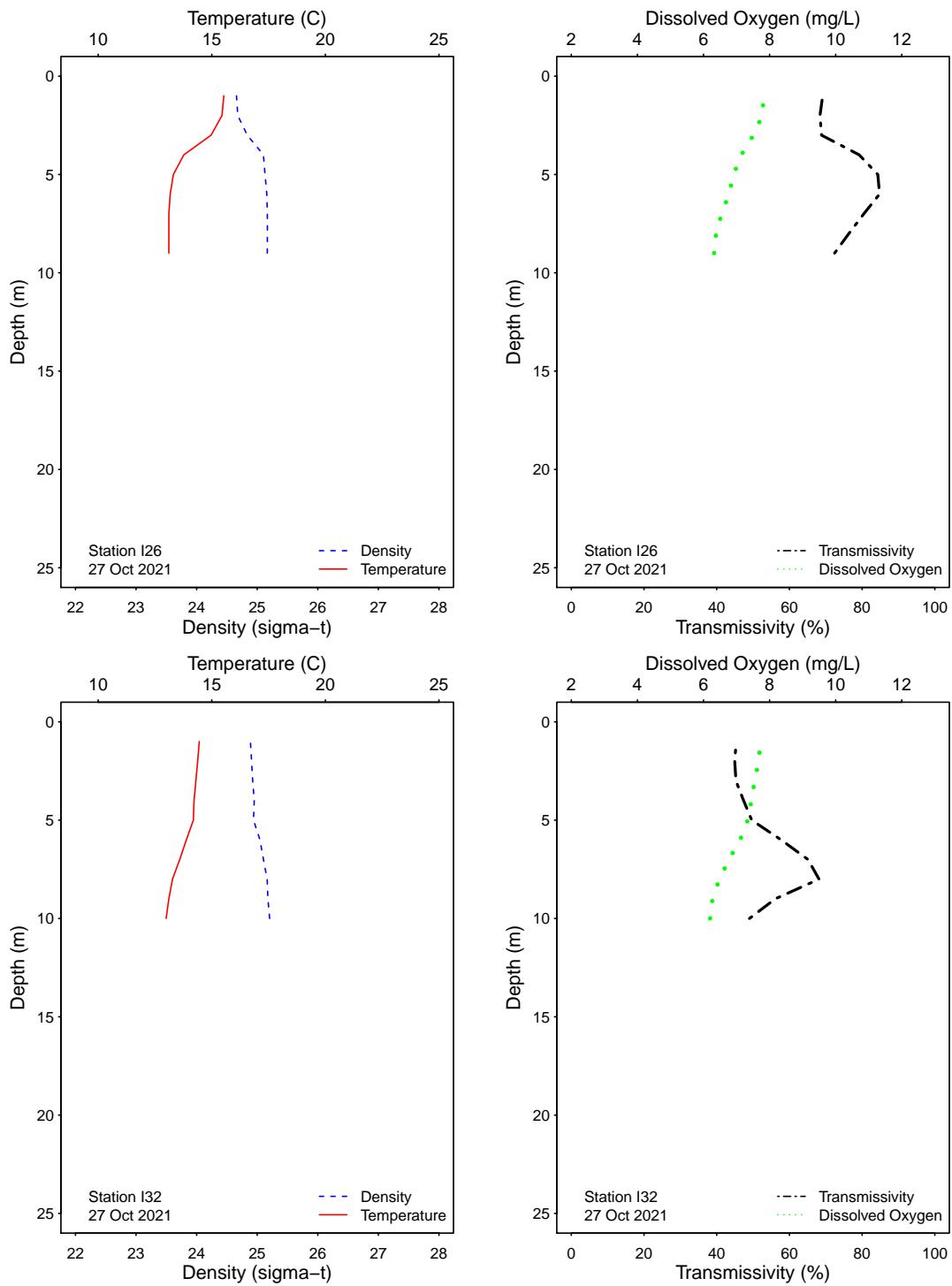


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

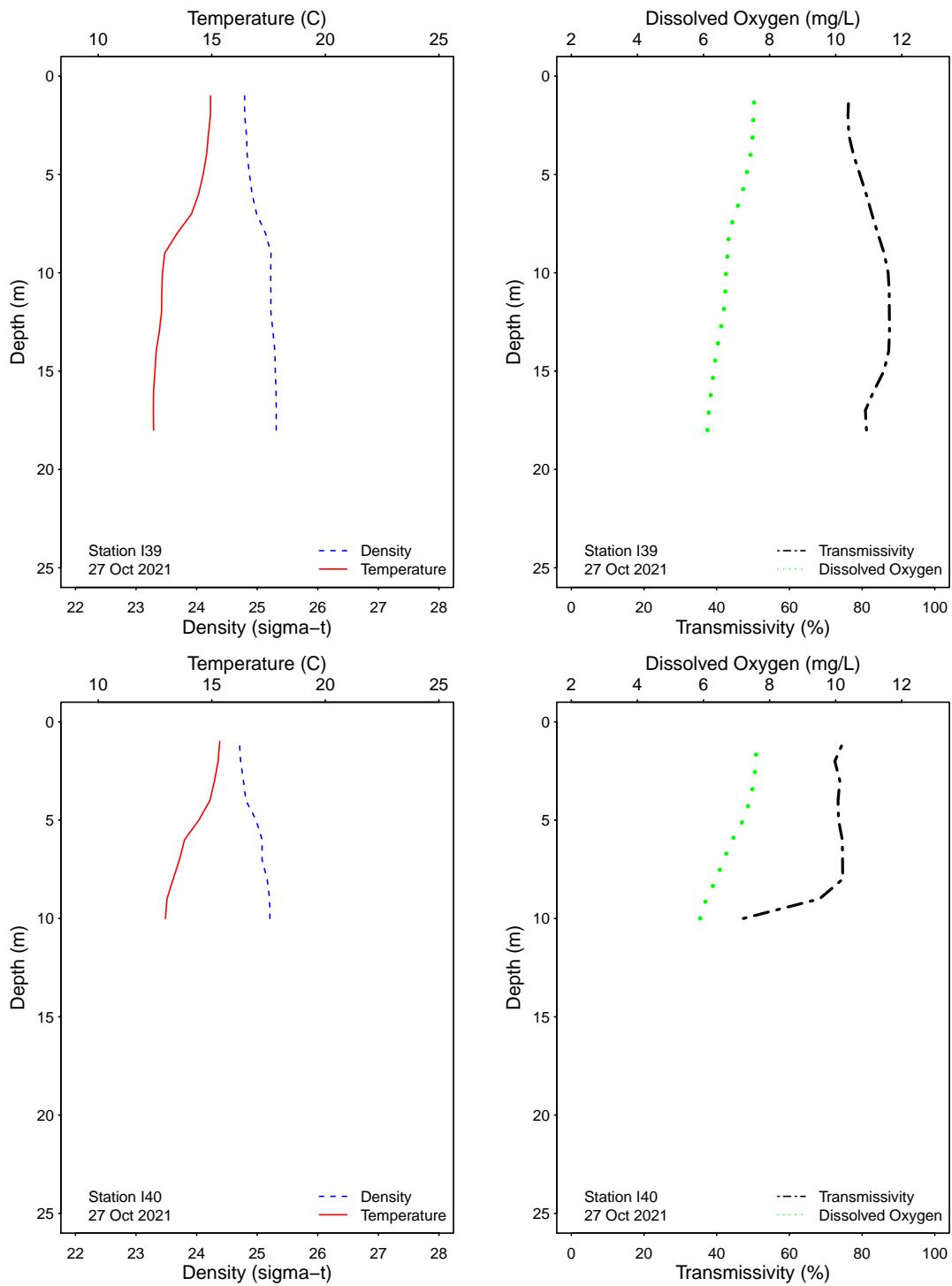


Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
I19	04 Oct 2021	6	HF	LAB DUPLICATE	60e	2e	2e
I19	11 Oct 2021	6	BS	LAB DUPLICATE	2e	2e	<2
I19	20 Oct 2021	6	KA	LAB DUPLICATE	<2	<2	<2
I19	27 Oct 2021	6	KA	LAB DUPLICATE	780	26e	10e
I40	04 Oct 2021	6	AR	LAB DUPLICATE	20e	<2	<2
I40	11 Oct 2021	6	BS	LAB DUPLICATE	40e	<2	<2
I40	20 Oct 2021	6	KA	LAB DUPLICATE	<20	<2	<2
I40	27 Oct 2021	6	KA	LAB DUPLICATE	180e	86	4e
S12	05 Oct 2021		BS	FIELD DUPLICATE	200e	12e	18e
S12	05 Oct 2021		BS	LAB DUPLICATE	40e	12e	16e
S12	12 Oct 2021		CRE	FIELD DUPLICATE	6e	6e	<2
S12	12 Oct 2021		CRE	LAB DUPLICATE	2e	2e	2e
S12	19 Oct 2021		CRE	FIELD DUPLICATE	<20	2e	<2
S12	19 Oct 2021		CRE	LAB DUPLICATE	<20	4e	<2
S12	26 Oct 2021		AR	FIELD DUPLICATE	20e	<2	<2
S12	26 Oct 2021		AR	LAB DUPLICATE	<20	<2	<2

ns = not sampled

ND = no data

