SD Public Utilities

SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

NPDES Permit No. CA0109045
SDRWQCB Order No. R9-2021-0011

JANUARY 2025

Environmental Monitoring and Technical Services
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CERTIFIED
Public Utilities Department
Continual Improvement, Prevention of Pollution, Regulatory Compliance
ISO 14001

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

February 28, 2025

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 January 2025 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 Director, Public Utilities Department

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 weekly 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.

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 quarterly 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 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 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:

<u>Water-Contact Objectives</u>

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 E*nterococci* 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

<u>Shellfish Harvesting Standards</u>

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.

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, 1987[2]) 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 2025 Quality Assurance Report, which will be completed in March 2026.

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 January**,** six of the eight shore stations located north of the border were out of compliance with the 2019 California Ocean Plan (Ocean Plan) water contact standards on one or more days as follows:
    - The 30-day running geometric mean standard for fecal coliforms was exceeded at stations S5 and S10.
    - The single sample maximum (SSM) standard for fecal coliforms was exceeded at stations S5, S6, S10, S11, and S12.
    - The 6-week running 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, S5, S6, S10, S11, and S12.

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

        - The 30-day running median standard for total coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
        - The STV standard for total coliforms was exceeded at stations S4, S5, S6, S10, S11, and S12.
    - A sewage-like odor was observed at stations S5, S6, S10, and S12 on one or more days in January.
    - 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 January 6, 14, 21, and 28.
    - During January, each of the seven kelp bed stations were out of compliance with the various 2019 Ocean Plan water contact standards on one or more days as follows:
        - The 30-day running geometric mean standard for fecal coliforms was exceeded at station I40.
        - The SSM standard for fecal coliforms was exceeded at stations I24, I26, and I40.
        - The 6-week running geometric mean standard for *Enterococcus* was exceeded at stations I19 and I40.
        - The STV standard for *Enterococcus* was exceeded at stations I19, I24, I25, I26, I32, and I40.
        - The 30-day running median standard for total coliforms was exceeded at stations I19, I24, I25, and I40.
        - The STV standard for total coliforms was exceeded at stations I19, I24, I25, I26, I32, I39, and I40.
    - Water column temperatures ranged from 11.89 to 13.92°C. The difference between surface and bottom waters ranged from 0.01 to 1.29°C.
    - Concentrations of chlorophyll *a* ranged from 0.78 to 22.36 µg/L at the kelp bed stations.
    - Nothing of sewage origin was observed at SBOO kelp stations in January.

- **Offshore Water Quality Sampling**
    - Quarterly sampling was not conducted during January at the offshore stations. The next quarterly sampling is scheduled for February 2025.

TABLES AND FIGURES

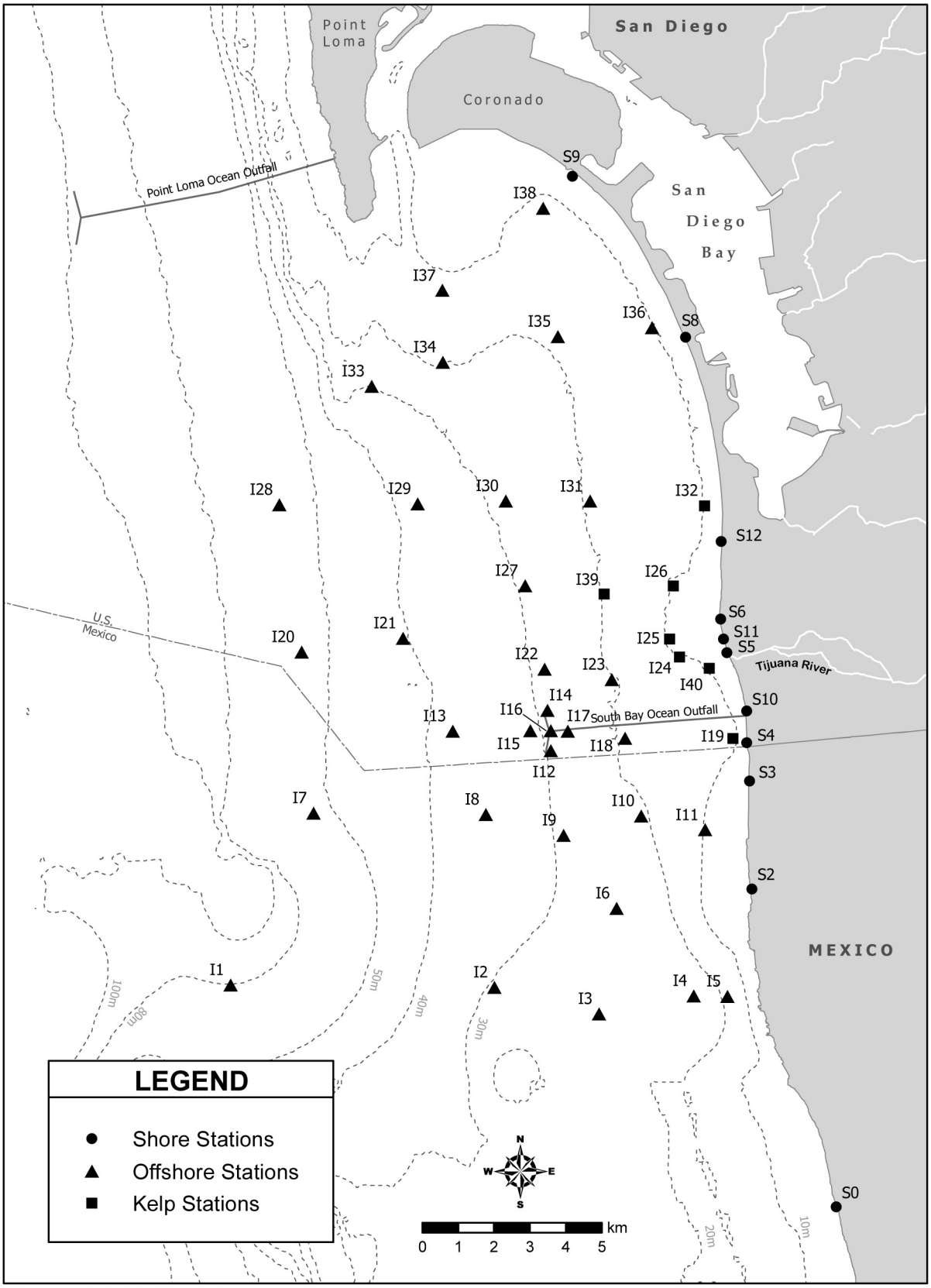

Figure 1.1 Station Map

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Shore Stations

Table 2.1

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for 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 Jan 2025	49	**337**	7	2	4	79	7	5
02 Jan 2025	*93	***684**	*4	*2	*5	*199	*4	*5
03 Jan 2025	*93	***684**	*4	*2	*5	*199	*4	*5
04 Jan 2025	*93	***684**	*4	*2	*5	*199	*4	*5
05 Jan 2025	*93	***684**	*4	*2	*5	*199	*4	*5
06 Jan 2025	*93	***684**	*4	*2	*5	*199	*4	*5
07 Jan 2025	87	**1213**	11	2	5	**273**	12	15
08 Jan 2025	87	**1213**	11	2	5	**273**	12	15
09 Jan 2025	*150	***684**	*11	*2	*6	***538**	*9	*24
10 Jan 2025	*150	***684**	*11	*2	*6	***538**	*9	*24
11 Jan 2025	*150	***684**	*11	*2	*6	***538**	*9	*24
12 Jan 2025	*150	***684**	*11	*2	*6	***538**	*9	*24
13 Jan 2025	*150	***684**	*11	*2	*6	***538**	*9	*24
14 Jan 2025	63	**713**	8	2	6	176	7	17
15 Jan 2025	63	**713**	8	2	6	176	7	17
16 Jan 2025	*59	***834**	*11	*2	*6	***273**	*9	*18
17 Jan 2025	*59	***834**	*11	*2	*6	***273**	*9	*18
18 Jan 2025	*59	***834**	*11	*2	*6	***273**	*9	*18
19 Jan 2025	*59	***834**	*11	*2	*6	***273**	*9	*18
20 Jan 2025	*59	***834**	*11	*2	*6	***273**	*9	*18
21 Jan 2025	34	**1422**	8	2	5	**286**	7	12
22 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
23 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
24 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
25 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
26 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
27 Jan 2025	*11	***834**	*9	*2	*3	*138	*9	*13
28 Jan 2025	14	**1422**	24	2	3	59	25	18
29 Jan 2025	*12	***6172**	*44	*2	*3	*34	*47	*26
30 Jan 2025	*12	***6172**	*44	*2	*3	*34	*47	*26
31 Jan 2025	*12	***6172**	*44	*2	*3	*34	*47	*26

* 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
07 Jan 2025	IC	**E**	**E**	IC	IC	**E**	**E**	**E**
14 Jan 2025	IC	**E**	IC	IC	IC	IC	IC	IC
21 Jan 2025	IC	**E**	IC	IC	IC	IC	IC	IC
28 Jan 2025	IC	**E**	**E**	IC	IC	IC	**E**	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 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
02 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
03 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
04 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
05 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
06 Jan 2025	23	**520**	8	3	3	**79**	**32**	3
07 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
08 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
09 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
10 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
11 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
12 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
13 Jan 2025	**39**	**520**	10	2	3	**94**	19	5
14 Jan 2025	27	**708**	5	2	3	**94**	10	5
15 Jan 2025	27	**708**	5	2	3	**94**	10	5
16 Jan 2025	27	**708**	5	2	3	**94**	10	5
17 Jan 2025	27	**708**	5	2	3	**94**	10	5
18 Jan 2025	27	**708**	5	2	3	**94**	10	5
19 Jan 2025	27	**708**	5	2	3	**94**	10	5
20 Jan 2025	27	**708**	5	2	3	**94**	10	5
21 Jan 2025	29	**708**	5	2	2	**149**	5	5
22 Jan 2025	29	**708**	5	2	2	**149**	5	5
23 Jan 2025	29	**708**	5	2	2	**149**	5	5
24 Jan 2025	29	**708**	5	2	2	**149**	5	5
25 Jan 2025	29	**708**	5	2	2	**149**	5	5
26 Jan 2025	29	**708**	5	2	2	**149**	5	5
27 Jan 2025	29	**708**	5	2	2	**149**	5	5
28 Jan 2025	**51**	**1968**	16	2	3	**201**	19	12
29 Jan 2025	**51**	**1968**	16	2	3	**201**	19	12
30 Jan 2025	**51**	**1968**	16	2	3	**201**	19	12
31 Jan 2025	**51**	**1968**	16	2	3	**201**	19	12

* 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
January	**E**	**E**	**E**	IC	IC	**E**	**E**	**E**

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 Jan 2025	**140**	**1800**	20	20	20	**200**	20	20
02 Jan 2025	***150**	***8900**	*20	*20	*20	***1300**	*20	*20
03 Jan 2025	***150**	***8900**	*20	*20	*20	***1300**	*20	*20
04 Jan 2025	***150**	***8900**	*20	*20	*20	***1300**	*20	*20
05 Jan 2025	***150**	***8900**	*20	*20	*20	***1300**	*20	*20
06 Jan 2025	***150**	***8900**	*20	*20	*20	***1300**	*20	*20
07 Jan 2025	**200**	**16000**	20	20	20	**2400**	20	20
08 Jan 2025	**200**	**16000**	20	20	20	**2400**	20	20
09 Jan 2025	***500**	***8900**	*30	*20	*20	***3100**	*20	*20
10 Jan 2025	***500**	***8900**	*30	*20	*20	***3100**	*20	*20
11 Jan 2025	***500**	***8900**	*30	*20	*20	***3100**	*20	*20
12 Jan 2025	***500**	***8900**	*30	*20	*20	***3100**	*20	*20
13 Jan 2025	***500**	***8900**	*30	*20	*20	***3100**	*20	*20
14 Jan 2025	**200**	**2600**	20	20	20	**2400**	20	20
15 Jan 2025	**200**	**2600**	20	20	20	**2400**	20	20
16 Jan 2025	***440**	***9300**	*30	*11	*13	***3100**	*20	*20
17 Jan 2025	***440**	***9300**	*30	*11	*13	***3100**	*20	*20
18 Jan 2025	***440**	***9300**	*30	*11	*13	***3100**	*20	*20
19 Jan 2025	***440**	***9300**	*30	*11	*13	***3100**	*20	*20
20 Jan 2025	***440**	***9300**	*30	*11	*13	***3100**	*20	*20
21 Jan 2025	**80**	**16000**	20	2	20	**2400**	20	20
22 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
23 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
24 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
25 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
26 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
27 Jan 2025	*70	***9300**	*20	*2	*13	***1700**	*20	*12
28 Jan 2025	60	**16000**	20	2	6	**1000**	20	20
29 Jan 2025	*60	***16000**	***1110**	*2	*4	***560**	***1810**	***802**
30 Jan 2025	*60	***16000**	***1110**	*2	*4	***560**	***1810**	***802**
31 Jan 2025	*60	***16000**	***1110**	*2	*4	***560**	***1810**	***802**

* Median calculated using n<5

Table 2.6

Summary of compliance at the SBOO shore stations with the Ocean Plan's Statistical Threshold Value 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
January	**E**	**E**	**E**	IC	IC	**E**	**E**	**E**

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 fecal coliform (Fecal) and *Enterococcus* (Entero) are reported as CFU/100 mL. Comments follow the data summary.

Station	Date	Time	Total	Fecal	Entero
S0	07 Jan 2025	850	>16000	11000	>12000
S0	14 Jan 2025	1000	9400	1100	1600e
S0	21 Jan 2025	915	15000	3000e	1400e
S0	28 Jan 2025	825	3000e	1100	520
S10	07 Jan 2025	1103	3800e	960	900
S10	14 Jan 2025	1029	120e	<2	<2
S10	21 Jan 2025	1042	1000e	340e	900
S10	28 Jan 2025	1220	20e	<2	12e
S11	07 Jan 2025	956	3600e	1000	260e
S11	14 Jan 2025	948	2e	<2	<2
S11	21 Jan 2025	952	<20	<2	2e
S11	28 Jan 2025	1053	>16000	1200e	5000
S12	07 Jan 2025	859	2400e	860	400
S12	14 Jan 2025	839	4e	4e	<2
S12	21 Jan 2025	847	<2	<2	4e
S12	28 Jan 2025	936	1600e	66	240e
S2	07 Jan 2025	955	>16000	8800	5600
S2	14 Jan 2025	1100	1500	26e	32e
S2	21 Jan 2025	1000	58	<2	8e
S2	28 Jan 2025	950	8200	140e	400
S3	07 Jan 2025	925	600e	200e	160e
S3	14 Jan 2025	1130	80e	18e	<20
S3	21 Jan 2025	1040	6e	<2	38e
S3	28 Jan 2025	920	1100	84	300e
S4	07 Jan 2025	1132	800e	68	88
S4	14 Jan 2025	1042	48	<2	<2
S4	21 Jan 2025	1057	60e	4e	18e
S4	28 Jan 2025	1236	60e	34e	180e
S5	07 Jan 2025	936	>16000	>12000	>12000
S5	14 Jan 2025	926	2600e	840	140e
S5	21 Jan 2025	931	>16000	>12000	>12000
S5	28 Jan 2025	1107	>16000	>12000	>12000
S6	07 Jan 2025	1010	2200e	900	400
S6	14 Jan 2025	958	6e	2e	<2
S6	21 Jan 2025	1004	<20	<2	<2
S6	28 Jan 2025	1028	>16000	1000e	3000e
S8	07 Jan 2025	841	2e	<2	<2
S8	14 Jan 2025	828	2e	2e	2e
S8	21 Jan 2025	831	2e	<2	<2
S8	28 Jan 2025	916	4e	<2	<2
S9	07 Jan 2025	822	<2	4e	<2
S9	14 Jan 2025	805	6e	6e	4e
S9	21 Jan 2025	814	<20	<2	2e
S9	28 Jan 2025	858	<2	<2	4e

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	07 Jan 2025	Arrive Time	850
S0	07 Jan 2025	Wind Speed (kts)	0
S0	07 Jan 2025	Wind Dir	NE
S0	07 Jan 2025	Animal Life	Dog-1; Seagull-10;
S0	07 Jan 2025	Floatables	None
S0	07 Jan 2025	Current Direction	N
S0	07 Jan 2025	Water Temp (C)	11
S0	07 Jan 2025	High Tide Time	
S0	07 Jan 2025	Low Tide Time	
S0	07 Jan 2025	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-4; No wind speed data available; 0.5 L/sec water flowing from storm drain
S0	14 Jan 2025	Arrive Time	1000
S0	14 Jan 2025	Wind Speed (kts)	18
S0	14 Jan 2025	Wind Dir	NE
S0	14 Jan 2025	Animal Life	-10;
S0	14 Jan 2025	Floatables	None
S0	14 Jan 2025	Current Direction	S
S0	14 Jan 2025	Water Temp (C)	10
S0	14 Jan 2025	High Tide Time	
S0	14 Jan 2025	Low Tide Time	
S0	14 Jan 2025	Comments	Water clear; Trash-0; Kelp; No flow from storm drain
S0	21 Jan 2025	Arrive Time	915
S0	21 Jan 2025	Wind Speed (kts)	4
S0	21 Jan 2025	Wind Dir	NE
S0	21 Jan 2025	Animal Life	-10;
S0	21 Jan 2025	Floatables	None
S0	21 Jan 2025	Current Direction	S
S0	21 Jan 2025	Water Temp (C)	10
S0	21 Jan 2025	High Tide Time	
S0	21 Jan 2025	Low Tide Time	
S0	21 Jan 2025	Comments	Water clear; Trash-0; No flow from storm drain
S0	28 Jan 2025	Arrive Time	825
S0	28 Jan 2025	Wind Speed (kts)	0
S0	28 Jan 2025	Wind Dir	XX
S0	28 Jan 2025	Animal Life	
S0	28 Jan 2025	Floatables	None
S0	28 Jan 2025	Current Direction	N
S0	28 Jan 2025	Water Temp (C)	11
S0	28 Jan 2025	High Tide Time	
S0	28 Jan 2025	Low Tide Time	
S0	28 Jan 2025	Comments	Water turbid; Trash-0; No flow from storm drain
S2	07 Jan 2025	Arrive Time	955
S2	07 Jan 2025	Wind Speed (kts)	0
S2	07 Jan 2025	Wind Dir	NE
S2	07 Jan 2025	Animal Life	Dog-2; Seagull-10;
S2	07 Jan 2025	Floatables	None
S2	07 Jan 2025	Current Direction	N
S2	07 Jan 2025	Water Temp (C)	11
S2	07 Jan 2025	High Tide Time	
S2	07 Jan 2025	Low Tide Time	
S2	07 Jan 2025	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-4; No wind speed data available; No flow from storm drain

Station	Date	Parameter	Value
S2	14 Jan 2025	Arrive Time	1100
S2	14 Jan 2025	Wind Speed (kts)	10
S2	14 Jan 2025	Wind Dir	NE
S2	14 Jan 2025	Animal Life	-10;
S2	14 Jan 2025	Floatables	None
S2	14 Jan 2025	Current Direction	S
S2	14 Jan 2025	Water Temp (C)	10
S2	14 Jan 2025	High Tide Time	
S2	14 Jan 2025	Low Tide Time	
S2	14 Jan 2025	Comments	Water clear; Trash-0; No flow from storm drain
S2	21 Jan 2025	Arrive Time	1000
S2	21 Jan 2025	Wind Speed (kts)	2
S2	21 Jan 2025	Wind Dir	NE
S2	21 Jan 2025	Animal Life	-20;
S2	21 Jan 2025	Floatables	None
S2	21 Jan 2025	Current Direction	S
S2	21 Jan 2025	Water Temp (C)	10
S2	21 Jan 2025	High Tide Time	
S2	21 Jan 2025	Low Tide Time	
S2	21 Jan 2025	Comments	Water clear; Trash-0; Person/Walker/Jogger-10; No flow from storm drain; Surf height is listed as 0 because no value was given on hard copy of survey
S2	28 Jan 2025	Arrive Time	950
S2	28 Jan 2025	Wind Speed (kts)	0
S2	28 Jan 2025	Wind Dir	XX
S2	28 Jan 2025	Animal Life	Dog-2; Seal/Sea Lion-1;
S2	28 Jan 2025	Floatables	None
S2	28 Jan 2025	Current Direction	S
S2	28 Jan 2025	Water Temp (C)	13
S2	28 Jan 2025	High Tide Time	
S2	28 Jan 2025	Low Tide Time	
S2	28 Jan 2025	Comments	Water turbid; Trash-0; No flow from storm drain; Dead seal
S3	07 Jan 2025	Arrive Time	925
S3	07 Jan 2025	Wind Speed (kts)	0
S3	07 Jan 2025	Wind Dir	NE
S3	07 Jan 2025	Animal Life	Seagull-10;
S3	07 Jan 2025	Floatables	None
S3	07 Jan 2025	Current Direction	N
S3	07 Jan 2025	Water Temp (C)	11
S3	07 Jan 2025	High Tide Time	
S3	07 Jan 2025	Low Tide Time	
S3	07 Jan 2025	Comments	Water clear; Trash-0; Kelp; No wind speed data available; No flow from storm drain
S3	14 Jan 2025	Arrive Time	1130
S3	14 Jan 2025	Wind Speed (kts)	10
S3	14 Jan 2025	Wind Dir	NE
S3	14 Jan 2025	Animal Life	-10;
S3	14 Jan 2025	Floatables	None
S3	14 Jan 2025	Current Direction	S
S3	14 Jan 2025	Water Temp (C)	10
S3	14 Jan 2025	High Tide Time	
S3	14 Jan 2025	Low Tide Time	
S3	14 Jan 2025	Comments	Water clear; Trash-0; Kelp; Person/Walker/Jogger-8; No flow from storm drain
S3	21 Jan 2025	Arrive Time	1040

Station	Date	Parameter	Value
S3	21 Jan 2025	Wind Speed (kts)	5
S3	21 Jan 2025	Wind Dir	NE
S3	21 Jan 2025	Animal Life	-10;
S3	21 Jan 2025	Floatables	None
S3	21 Jan 2025	Current Direction	S
S3	21 Jan 2025	Water Temp (C)	10
S3	21 Jan 2025	High Tide Time	
S3	21 Jan 2025	Low Tide Time	
S3	21 Jan 2025	Comments	Water clear; Trash-0; No flow from storm drain
S3	28 Jan 2025	Arrive Time	920
S3	28 Jan 2025	Wind Speed (kts)	0
S3	28 Jan 2025	Wind Dir	XX
S3	28 Jan 2025	Animal Life	
S3	28 Jan 2025	Floatables	None
S3	28 Jan 2025	Current Direction	S
S3	28 Jan 2025	Water Temp (C)	13
S3	28 Jan 2025	High Tide Time	
S3	28 Jan 2025	Low Tide Time	
S3	28 Jan 2025	Comments	Water turbid; Trash-0; No flow from storm drain
S4	07 Jan 2025	Arrive Time	1137
S4	07 Jan 2025	Wind Speed (kts)	2.5
S4	07 Jan 2025	Wind Dir	W
S4	07 Jan 2025	Animal Life	
S4	07 Jan 2025	Floatables	None
S4	07 Jan 2025	Current Direction	S
S4	07 Jan 2025	Water Temp (C)	14.2
S4	07 Jan 2025	High Tide Time	
S4	07 Jan 2025	Low Tide Time	
S4	07 Jan 2025	Comments	Water clear; Trash-3; Debris
S4	14 Jan 2025	Arrive Time	1042
S4	14 Jan 2025	Wind Speed (kts)	4.8
S4	14 Jan 2025	Wind Dir	NW
S4	14 Jan 2025	Animal Life	
S4	14 Jan 2025	Floatables	None
S4	14 Jan 2025	Current Direction	S
S4	14 Jan 2025	Water Temp (C)	11.4
S4	14 Jan 2025	High Tide Time	
S4	14 Jan 2025	Low Tide Time	
S4	14 Jan 2025	Comments	Water clear; Trash-4; Kelp;Debris
S4	21 Jan 2025	Arrive Time	1057
S4	21 Jan 2025	Wind Speed (kts)	8
S4	21 Jan 2025	Wind Dir	SW
S4	21 Jan 2025	Animal Life	
S4	21 Jan 2025	Floatables	None
S4	21 Jan 2025	Current Direction	S
S4	21 Jan 2025	Water Temp (C)	11.1
S4	21 Jan 2025	High Tide Time	
S4	21 Jan 2025	Low Tide Time	
S4	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S4	28 Jan 2025	Arrive Time	1236
S4	28 Jan 2025	Wind Speed (kts)	5.3
S4	28 Jan 2025	Wind Dir	SW
S4	28 Jan 2025	Animal Life	Bird-1;
S4	28 Jan 2025	Floatables	None
S4	28 Jan 2025	Current Direction	S
S4	28 Jan 2025	Water Temp (C)	12.4

Station	Date	Parameter	Value
S4	28 Jan 2025	High Tide Time	
S4	28 Jan 2025	Low Tide Time	
S4	28 Jan 2025	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S10	07 Jan 2025	Arrive Time	1103
S10	07 Jan 2025	Wind Speed (kts)	4.7
S10	07 Jan 2025	Wind Dir	W
S10	07 Jan 2025	Animal Life	
S10	07 Jan 2025	Floatables	None
S10	07 Jan 2025	Current Direction	S
S10	07 Jan 2025	Water Temp (C)	14.9
S10	07 Jan 2025	High Tide Time	
S10	07 Jan 2025	Low Tide Time	
S10	07 Jan 2025	Comments	Water clear; Trash-2; Debris; Sewage-like odor
S10	14 Jan 2025	Arrive Time	1029
S10	14 Jan 2025	Wind Speed (kts)	7.1
S10	14 Jan 2025	Wind Dir	NW
S10	14 Jan 2025	Animal Life	
S10	14 Jan 2025	Floatables	None
S10	14 Jan 2025	Current Direction	S
S10	14 Jan 2025	Water Temp (C)	12.3
S10	14 Jan 2025	High Tide Time	
S10	14 Jan 2025	Low Tide Time	
S10	14 Jan 2025	Comments	Water clear; Trash-2
S10	21 Jan 2025	Arrive Time	1042
S10	21 Jan 2025	Wind Speed (kts)	13.8
S10	21 Jan 2025	Wind Dir	W
S10	21 Jan 2025	Animal Life	Horse-1;
S10	21 Jan 2025	Floatables	None
S10	21 Jan 2025	Current Direction	S
S10	21 Jan 2025	Water Temp (C)	12.4
S10	21 Jan 2025	High Tide Time	
S10	21 Jan 2025	Low Tide Time	
S10	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1
S10	28 Jan 2025	Arrive Time	1220
S10	28 Jan 2025	Wind Speed (kts)	5.8
S10	28 Jan 2025	Wind Dir	SW
S10	28 Jan 2025	Animal Life	Bird-36;
S10	28 Jan 2025	Floatables	None
S10	28 Jan 2025	Current Direction	S
S10	28 Jan 2025	Water Temp (C)	12.1
S10	28 Jan 2025	High Tide Time	
S10	28 Jan 2025	Low Tide Time	
S10	28 Jan 2025	Comments	Water clear; Trash-4; Kelp;Seagrass;Debris; Person/Walker/Jogger-3
S5	07 Jan 2025	Arrive Time	936
S5	07 Jan 2025	Wind Speed (kts)	1.4
S5	07 Jan 2025	Wind Dir	NE
S5	07 Jan 2025	Animal Life	Bird-5;
S5	07 Jan 2025	Floatables	None
S5	07 Jan 2025	Current Direction	S
S5	07 Jan 2025	Water Temp (C)	12.3
S5	07 Jan 2025	High Tide Time	
S5	07 Jan 2025	Low Tide Time	
S5	07 Jan 2025	Comments	Water clear; Trash-4; Kelp;Seagrass;Algae;Debris; Sewage-like odor

Station	Date	Parameter	Value
S5	14 Jan 2025	Arrive Time	926
S5	14 Jan 2025	Wind Speed (kts)	5.7
S5	14 Jan 2025	Wind Dir	E
S5	14 Jan 2025	Animal Life	Bird-1;
S5	14 Jan 2025	Floatables	None
S5	14 Jan 2025	Current Direction	S
S5	14 Jan 2025	Water Temp (C)	10.6
S5	14 Jan 2025	High Tide Time	
S5	14 Jan 2025	Low Tide Time	
S5	14 Jan 2025	Comments	Water clear; Trash-1; Kelp;Debris;Seagrass; Person/Walker/Jogger-1
S5	21 Jan 2025	Arrive Time	931
S5	21 Jan 2025	Wind Speed (kts)	6.5
S5	21 Jan 2025	Wind Dir	SW
S5	21 Jan 2025	Animal Life	
S5	21 Jan 2025	Floatables	None
S5	21 Jan 2025	Current Direction	S
S5	21 Jan 2025	Water Temp (C)	12.2
S5	21 Jan 2025	High Tide Time	
S5	21 Jan 2025	Low Tide Time	
S5	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-1; Sewage-like odor
S5	28 Jan 2025	Arrive Time	1028
S5	28 Jan 2025	Wind Speed (kts)	3.6
S5	28 Jan 2025	Wind Dir	W
S5	28 Jan 2025	Animal Life	
S5	28 Jan 2025	Floatables	None
S5	28 Jan 2025	Current Direction	S
S5	28 Jan 2025	Water Temp (C)	13.8
S5	28 Jan 2025	High Tide Time	
S5	28 Jan 2025	Low Tide Time	
S5	28 Jan 2025	Comments	Water clear; Trash-5; Kelp;Seagrass;Algae;Debris; Sewage-like odor
S11	07 Jan 2025	Arrive Time	956
S11	07 Jan 2025	Wind Speed (kts)	4.4
S11	07 Jan 2025	Wind Dir	W
S11	07 Jan 2025	Animal Life	
S11	07 Jan 2025	Floatables	None
S11	07 Jan 2025	Current Direction	S
S11	07 Jan 2025	Water Temp (C)	15.1
S11	07 Jan 2025	High Tide Time	
S11	07 Jan 2025	Low Tide Time	
S11	07 Jan 2025	Comments	Water clear; Trash-3; Kelp;Seagrass;Debris
S11	14 Jan 2025	Arrive Time	948
S11	14 Jan 2025	Wind Speed (kts)	5.2
S11	14 Jan 2025	Wind Dir	N
S11	14 Jan 2025	Animal Life	
S11	14 Jan 2025	Floatables	None
S11	14 Jan 2025	Current Direction	S
S11	14 Jan 2025	Water Temp (C)	12.4
S11	14 Jan 2025	High Tide Time	
S11	14 Jan 2025	Low Tide Time	
S11	14 Jan 2025	Comments	Water clear; Trash-1; Kelp;Algae
S11	21 Jan 2025	Arrive Time	952
S11	21 Jan 2025	Wind Speed (kts)	8.7

Station	Date	Parameter	Value
S11	21 Jan 2025	Wind Dir	NW
S11	21 Jan 2025	Animal Life	
S11	21 Jan 2025	Floatables	None
S11	21 Jan 2025	Current Direction	S
S11	21 Jan 2025	Water Temp (C)	11.6
S11	21 Jan 2025	High Tide Time	
S11	21 Jan 2025	Low Tide Time	
S11	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S11	28 Jan 2025	Arrive Time	1053
S11	28 Jan 2025	Wind Speed (kts)	3
S11	28 Jan 2025	Wind Dir	SW
S11	28 Jan 2025	Animal Life	
S11	28 Jan 2025	Floatables	None
S11	28 Jan 2025	Current Direction	S
S11	28 Jan 2025	Water Temp (C)	13.9
S11	28 Jan 2025	High Tide Time	
S11	28 Jan 2025	Low Tide Time	
S11	28 Jan 2025	Comments	Water clear; Trash-5; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S6	07 Jan 2025	Arrive Time	1010
S6	07 Jan 2025	Wind Speed (kts)	4.3
S6	07 Jan 2025	Wind Dir	W
S6	07 Jan 2025	Animal Life	
S6	07 Jan 2025	Floatables	None
S6	07 Jan 2025	Current Direction	S
S6	07 Jan 2025	Water Temp (C)	14.4
S6	07 Jan 2025	High Tide Time	
S6	07 Jan 2025	Low Tide Time	
S6	07 Jan 2025	Comments	Water clear; Trash-2; Kelp;Debris;Seagrass
S6	14 Jan 2025	Arrive Time	958
S6	14 Jan 2025	Wind Speed (kts)	1.7
S6	14 Jan 2025	Wind Dir	N
S6	14 Jan 2025	Animal Life	
S6	14 Jan 2025	Floatables	None
S6	14 Jan 2025	Current Direction	S
S6	14 Jan 2025	Water Temp (C)	11.6
S6	14 Jan 2025	High Tide Time	
S6	14 Jan 2025	Low Tide Time	
S6	14 Jan 2025	Comments	Water clear; Trash-3; Debris
S6	21 Jan 2025	Arrive Time	1004
S6	21 Jan 2025	Wind Speed (kts)	2
S6	21 Jan 2025	Wind Dir	SW
S6	21 Jan 2025	Animal Life	Dog-15;
S6	21 Jan 2025	Floatables	None
S6	21 Jan 2025	Current Direction	S
S6	21 Jan 2025	Water Temp (C)	11.6
S6	21 Jan 2025	High Tide Time	
S6	21 Jan 2025	Low Tide Time	
S6	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Algae;Debris; Person/Walker/Jogger-5
S6	28 Jan 2025	Arrive Time	1107
S6	28 Jan 2025	Wind Speed (kts)	2.5
S6	28 Jan 2025	Wind Dir	SW
S6	28 Jan 2025	Animal Life	Bird-1;
S6	28 Jan 2025	Floatables	None
S6	28 Jan 2025	Current Direction	S

Station	Date	Parameter	Value
S6	28 Jan 2025	Water Temp (C)	14
S6	28 Jan 2025	High Tide Time	
S6	28 Jan 2025	Low Tide Time	
S6	28 Jan 2025	Comments	Water clear; Trash-2; Debris; Sewage-like odor
S12	07 Jan 2025	Arrive Time	859
S12	07 Jan 2025	Wind Speed (kts)	3.2
S12	07 Jan 2025	Wind Dir	NE
S12	07 Jan 2025	Animal Life	
S12	07 Jan 2025	Floatables	None
S12	07 Jan 2025	Current Direction	S
S12	07 Jan 2025	Water Temp (C)	12.6
S12	07 Jan 2025	High Tide Time	
S12	07 Jan 2025	Low Tide Time	
S12	07 Jan 2025	Comments	Water clear; Trash-1
S12	14 Jan 2025	Arrive Time	839
S12	14 Jan 2025	Wind Speed (kts)	0
S12	14 Jan 2025	Wind Dir	XX
S12	14 Jan 2025	Animal Life	
S12	14 Jan 2025	Floatables	None
S12	14 Jan 2025	Current Direction	S
S12	14 Jan 2025	Water Temp (C)	10.3
S12	14 Jan 2025	High Tide Time	
S12	14 Jan 2025	Low Tide Time	
S12	14 Jan 2025	Comments	Water clear; Surfer/Paddle boarder-1; Trash-2; Sea-grass;Kelp
S12	21 Jan 2025	Arrive Time	847
S12	21 Jan 2025	Wind Speed (kts)	2.5
S12	21 Jan 2025	Wind Dir	SW
S12	21 Jan 2025	Animal Life	
S12	21 Jan 2025	Floatables	None
S12	21 Jan 2025	Current Direction	S
S12	21 Jan 2025	Water Temp (C)	10.8
S12	21 Jan 2025	High Tide Time	
S12	21 Jan 2025	Low Tide Time	
S12	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S12	28 Jan 2025	Arrive Time	936
S12	28 Jan 2025	Wind Speed (kts)	1.7
S12	28 Jan 2025	Wind Dir	S
S12	28 Jan 2025	Animal Life	Bird-1;
S12	28 Jan 2025	Floatables	None
S12	28 Jan 2025	Current Direction	S
S12	28 Jan 2025	Water Temp (C)	12.6
S12	28 Jan 2025	High Tide Time	
S12	28 Jan 2025	Low Tide Time	
S12	28 Jan 2025	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris; Per-son/Walker/Jogger-1; Sewage-like odor
S8	07 Jan 2025	Arrive Time	841
S8	07 Jan 2025	Wind Speed (kts)	3
S8	07 Jan 2025	Wind Dir	E
S8	07 Jan 2025	Animal Life	
S8	07 Jan 2025	Floatables	None
S8	07 Jan 2025	Current Direction	S
S8	07 Jan 2025	Water Temp (C)	12.5
S8	07 Jan 2025	High Tide Time	
S8	07 Jan 2025	Low Tide Time	
S8	07 Jan 2025	Comments	Water clear; Trash-2; Kelp;Seagrass;Debris

Station	Date	Parameter	Value
S8	14 Jan 2025	Arrive Time	820
S8	14 Jan 2025	Wind Speed (kts)	0.4
S8	14 Jan 2025	Wind Dir	W
S8	14 Jan 2025	Animal Life	
S8	14 Jan 2025	Floatables	None
S8	14 Jan 2025	Current Direction	S
S8	14 Jan 2025	Water Temp (C)	11
S8	14 Jan 2025	High Tide Time	
S8	14 Jan 2025	Low Tide Time	
S8	14 Jan 2025	Comments	Water clear; Trash-1; Kelp;Debris
S8	21 Jan 2025	Arrive Time	831
S8	21 Jan 2025	Wind Speed (kts)	0.7
S8	21 Jan 2025	Wind Dir	SW
S8	21 Jan 2025	Animal Life	
S8	21 Jan 2025	Floatables	None
S8	21 Jan 2025	Current Direction	S
S8	21 Jan 2025	Water Temp (C)	11.5
S8	21 Jan 2025	High Tide Time	
S8	21 Jan 2025	Low Tide Time	
S8	21 Jan 2025	Comments	Water clear; Trash-1; Kelp;Seagrass;Debris
S8	28 Jan 2025	Arrive Time	919
S8	28 Jan 2025	Wind Speed (kts)	5.6
S8	28 Jan 2025	Wind Dir	E
S8	28 Jan 2025	Animal Life	
S8	28 Jan 2025	Floatables	None
S8	28 Jan 2025	Current Direction	S
S8	28 Jan 2025	Water Temp (C)	12.4
S8	28 Jan 2025	High Tide Time	
S8	28 Jan 2025	Low Tide Time	
S8	28 Jan 2025	Comments	Water clear; Trash-5; Kelp;Seagrass;Algae;Debris
S9	07 Jan 2025	Arrive Time	822
S9	07 Jan 2025	Wind Speed (kts)	2.3
S9	07 Jan 2025	Wind Dir	S
S9	07 Jan 2025	Animal Life	Bird-2;
S9	07 Jan 2025	Floatables	None
S9	07 Jan 2025	Current Direction	S
S9	07 Jan 2025	Water Temp (C)	12.3
S9	07 Jan 2025	High Tide Time	
S9	07 Jan 2025	Low Tide Time	
S9	07 Jan 2025	Comments	Water clear; Trash-1; Algae;Debris
S9	14 Jan 2025	Arrive Time	805
S9	14 Jan 2025	Wind Speed (kts)	0
S9	14 Jan 2025	Wind Dir	XX
S9	14 Jan 2025	Animal Life	
S9	14 Jan 2025	Floatables	None
S9	14 Jan 2025	Current Direction	S
S9	14 Jan 2025	Water Temp (C)	11.1
S9	14 Jan 2025	High Tide Time	
S9	14 Jan 2025	Low Tide Time	
S9	14 Jan 2025	Comments	Water clear; Trash-1
S9	21 Jan 2025	Arrive Time	814
S9	21 Jan 2025	Wind Speed (kts)	10
S9	21 Jan 2025	Wind Dir	SW
S9	21 Jan 2025	Animal Life	
S9	21 Jan 2025	Floatables	None

Station	Date	Parameter	Value
S9	21 Jan 2025	Current Direction	S
S9	21 Jan 2025	Water Temp (C)	10.1
S9	21 Jan 2025	High Tide Time	
S9	21 Jan 2025	Low Tide Time	
S9	21 Jan 2025	Comments	Water clear; Surfer/Paddle boarder-1; Trash-1; Kelp;Seagrass;Debris; Person/Walker/Jogger-2
S9	28 Jan 2025	Arrive Time	858
S9	28 Jan 2025	Wind Speed (kts)	1.1
S9	28 Jan 2025	Wind Dir	SE
S9	28 Jan 2025	Animal Life	
S9	28 Jan 2025	Floatables	None
S9	28 Jan 2025	Current Direction	S
S9	28 Jan 2025	Water Temp (C)	13.1
S9	28 Jan 2025	High Tide Time	
S9	28 Jan 2025	Low Tide Time	
S9	28 Jan 2025	Comments	Water clear; Trash-2; Seagrass;Kelp;Debris

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 Jan 2025	*26	*24	*2	*2	*2	*2	*33
02 Jan 2025	*26	*24	*2	*2	*2	*2	*33
03 Jan 2025	*26	*24	*2	*2	*2	*2	*33
04 Jan 2025	*26	*24	*2	*2	*2	*2	*33
05 Jan 2025	*26	*24	*2	*2	*2	*2	*33
06 Jan 2025	32	38	3	3	2	2	80
07 Jan 2025	32	38	3	3	2	2	80
08 Jan 2025	32	38	3	3	2	2	80
09 Jan 2025	32	38	3	3	2	2	80
10 Jan 2025	*64	*21	*4	*3	*2	*2	*41
11 Jan 2025	*64	*21	*4	*3	*2	*2	*41
12 Jan 2025	*64	*21	*4	*3	*2	*2	*41
13 Jan 2025	*64	*21	*4	*3	*2	*2	*41
14 Jan 2025	64	31	3	3	2	2	88
15 Jan 2025	64	31	3	3	2	2	88
16 Jan 2025	*57	*19	*4	*3	*2	*2	*66
17 Jan 2025	*57	*19	*4	*3	*2	*2	*66
18 Jan 2025	*57	*19	*4	*3	*2	*2	*66
19 Jan 2025	*57	*19	*4	*3	*2	*2	*66
20 Jan 2025	*57	*19	*4	*3	*2	*2	*66
21 Jan 2025	34	30	3	3	2	2	68
22 Jan 2025	34	30	3	3	2	2	68
23 Jan 2025	34	30	3	3	2	2	68
24 Jan 2025	34	30	3	3	2	2	68
25 Jan 2025	*24	*58	*4	*3	*2	*2	*163
26 Jan 2025	*24	*58	*4	*3	*2	*2	*163
27 Jan 2025	*24	*58	*4	*3	*2	*2	*163
28 Jan 2025	30	62	7	10	5	4	181
29 Jan 2025	*34	*145	*10	*15	*6	*5	***558**
30 Jan 2025	*34	*145	*10	*15	*6	*5	***558**
31 Jan 2025	*34	*145	*10	*15	*6	*5	***558**

* 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
06 Jan 2025	IC	**E**	IC	IC	IC	IC	**E**
14 Jan 2025	IC	IC	IC	IC	IC	IC	**E**
21 Jan 2025	IC	IC	IC	IC	IC	IC	IC
28 Jan 2025	IC	IC	IC	**E**	IC	IC	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 Jan 2025	16	7	4	4	3	3	19
02 Jan 2025	16	7	4	4	3	3	19
03 Jan 2025	16	7	4	4	3	3	19
04 Jan 2025	16	7	4	4	3	3	19
05 Jan 2025	16	7	4	4	3	3	19
06 Jan 2025	19	11	6	4	2	3	**37**
07 Jan 2025	18	15	5	4	2	3	**33**
08 Jan 2025	18	15	5	4	2	3	**33**
09 Jan 2025	18	15	5	4	2	3	**33**
10 Jan 2025	18	15	5	4	2	3	**33**
11 Jan 2025	18	15	5	4	2	3	**33**
12 Jan 2025	18	15	5	4	2	3	**33**
13 Jan 2025	14	15	4	2	2	2	**33**
14 Jan 2025	17	16	3	2	2	2	**48**
15 Jan 2025	17	16	3	2	2	2	**48**
16 Jan 2025	17	16	3	2	2	2	**48**
17 Jan 2025	17	16	3	2	2	2	**48**
18 Jan 2025	17	16	3	2	2	2	**48**
19 Jan 2025	17	16	3	2	2	2	**48**
20 Jan 2025	17	16	3	2	2	2	**48**
21 Jan 2025	15	21	3	2	2	2	**68**
22 Jan 2025	21	17	3	3	2	2	**58**
23 Jan 2025	21	17	3	3	2	2	**58**
24 Jan 2025	21	17	3	3	2	2	**58**
25 Jan 2025	21	17	3	3	2	2	**58**
26 Jan 2025	21	17	3	3	2	2	**58**
27 Jan 2025	21	17	3	3	2	2	**58**
28 Jan 2025	**32**	20	6	6	4	4	**81**
29 Jan 2025	**32**	20	6	6	4	4	**81**
30 Jan 2025	**32**	20	6	6	4	4	**81**
31 Jan 2025	**32**	20	6	6	4	4	**81**

* 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
January	IC	**E**	IC	**E**	**E**	IC	**E**

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 over the previous 30 days unless otherwise noted (*). Values >70 CFU/100 mL exceed the standard.

	I19			I24			I25			I26			I32			I39			I40		
Date	2m	6m	11m	2m	6m	11m	2m	6m	9m	2m	6m	9m	2m	6m	9m	2m	12m	18m	2m	6m	9m
01 Jan 2025	*24	**134	**140	**471	**462	**71	*3	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	**701	**601	*30
02 Jan 2025	*24	**134	**140	**471	**462	**71	*3	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	**701	**601	*30
03 Jan 2025	*24	**134	**140	**471	**462	**71	*3	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	**701	**601	*30
04 Jan 2025	*24	**134	**140	**471	**462	**71	*3	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	**701	**601	*30
05 Jan 2025	*24	**134	**140	**471	**462	**71	*3	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	**701	**601	*30
06 Jan 2025	40	**240	**200	**96	**920	**140	4	2	2	2	2	2	2	2	2	2	2	2	**1400	**1200	40
07 Jan 2025	40	**240	**200	**96	**920	**140	4	2	2	2	2	2	2	2	2	2	2	2	**1400	**1200	40
08 Jan 2025	40	**240	**200	**96	**920	**140	4	2	2	2	2	2	2	2	2	2	2	2	**1400	**1200	40
09 Jan 2025	40	**240	**200	**96	**920	**140	4	2	2	2	2	2	2	2	2	2	2	2	**1400	**1200	40
10 Jan 2025	**200	**250	**200	*49	**462	**71	*3	*11	*3	*2	*2	*3	*2	*3	*2	*2	*2	*11	**701	**601	*30
11 Jan 2025	**200	**250	**200	*49	**462	**71	*3	*11	*3	*2	*2	*3	*2	*3	*2	*2	*2	*11	**701	**601	*30
12 Jan 2025	**200	**250	**200	*49	**462	**71	*3	*11	*3	*2	*2	*3	*2	*3	*2	*2	*2	*11	**701	**601	*30
13 Jan 2025	**200	**250	**200	*49	**462	**71	*3	*11	*3	*2	*2	*3	*2	*3	*2	*2	*2	*11	**701	**601	*30
14 Jan 2025	**110	**260	**200	2	4	**140	2	20	2	2	2	4	2	2	2	2	2	4	**860	**1200	40
15 Jan 2025	**110	**260	**200	2	4	**140	2	20	2	2	2	4	2	2	2	2	2	4	**860	**1200	40
16 Jan 2025	**235	**280	**140	*2	*3	**251	*2	*20	*2	*2	*2	*4	*2	*3	*2	*2	*2	*12	**431	**4101	**4010
17 Jan 2025	**235	**280	**140	*2	*3	**251	*2	*20	*2	*2	*2	*4	*2	*3	*2	*2	*2	*12	**431	**4101	**4010
18 Jan 2025	**235	**280	**140	*2	*3	**251	*2	*20	*2	*2	*2	*4	*2	*3	*2	*2	*2	*12	**431	**4101	**4010
19 Jan 2025	**235	**280	**140	*2	*3	**251	*2	*20	*2	*2	*2	*4	*2	*3	*2	*2	*2	*12	**431	**4101	**4010
20 Jan 2025	**235	**280	**140	*2	*3	**251	*2	*20	*2	*2	*2	*4	*2	*3	*2	*2	*2	*12	**431	**4101	**4010
21 Jan 2025	**110	**260	**80	2	4	**500	2	20	2	2	2	4	2	2	2	2	2	4	**320	**200	**480
22 Jan 2025	**110	**260	**80	2	4	**500	2	20	2	2	2	4	2	2	2	2	2	4	**320	**200	**480
23 Jan 2025	**110	**260	**80	2	4	**500	2	20	2	2	2	4	2	2	2	2	2	4	**320	**200	**480
24 Jan 2025	**110	**260	**80	2	4	**500	2	20	2	2	2	4	2	2	2	2	2	4	**320	**200	**480
25 Jan 2025	**78	**250	**79	*49	**242	**590	*2	*11	*2	*2	*2	*4	*2	*2	*2	*2	*2	*3	**590	**4200	**4240
26 Jan 2025	**78	**250	**79	*49	**242	**590	*2	*11	*2	*2	*2	*4	*2	*2	*2	*2	*2	*3	**590	**4200	**4240
27 Jan 2025	**78	**250	**79	*49	**242	**590	*2	*11	*2	*2	*2	*4	*2	*2	*2	*2	*2	*3	**590	**4200	**4240
28 Jan 2025	**110	**260	**80	**96	**480	**680	2	20	2	2	2	4	2	2	2	2	2	4	**860	**2400	**3200
29 Jan 2025	**215	**280	**139	**108	**580	**710	**101	*70	*15	*2	*22	*12	*2	*3	*6	*2	*3	*14	**1430	**5300	**5600
30 Jan 2025	**215	**280	**139	**108	**580	**710	**101	*70	*15	*2	*22	*12	*2	*3	*6	*2	*3	*14	**1430	**5300	**5600
31 Jan 2025	**215	**280	**139	**108	**580	**710	**101	*70	*15	*2	*22	*12	*2	*3	*6	*2	*3	*14	**1430	**5300	**5600

* Median calculated using n<5

Table 3.6

Summary of compliance at the SBOO kelp stations with the Ocean Plan's Statistical Threshold Value 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.

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

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
I19	06 Jan 2025	1050	2	360e	68	26e
I19	06 Jan 2025	1050	6	260e	82	48
I19	06 Jan 2025	1050	11	200e	66	62
I19	14 Jan 2025	1035	2	110	80	52
I19	14 Jan 2025	1035	6	300e	76	64
I19	14 Jan 2025	1035	11	78	28e	14e
I19	21 Jan 2025	1054	2	46	4e	2e
I19	21 Jan 2025	1054	6	42	2e	2e
I19	21 Jan 2025	1054	11	40e	6e	20e
I19	28 Jan 2025	1000	2	320e	28e	44
I19	28 Jan 2025	1000	6	2000e	100	20e
I19	28 Jan 2025	1000	11	1400e	100	160e
I24	06 Jan 2025	1110	2	96	24e	50
I24	06 Jan 2025	1110	6	3200e	620	220e
I24	06 Jan 2025	1110	11	500	120	58
I24	14 Jan 2025	1058	2	<2	<2	<2
I24	14 Jan 2025	1058	6	<2	2e	<2
I24	14 Jan 2025	1058	11	680	380e	48
I24	21 Jan 2025	1113	2	340e	110	80e
I24	21 Jan 2025	1113	6	480	180e	180e
I24	21 Jan 2025	1113	11	740	240e	100e
I24	28 Jan 2025	1018	2	120e	16e	16e
I24	28 Jan 2025	1018	6	680	120e	100e
I24	28 Jan 2025	1018	11	820	96	100
I25	06 Jan 2025	1121	2	320e	54	56
I25	06 Jan 2025	1121	6	120	34e	38e
I25	06 Jan 2025	1121	9	28e	8e	10e
I25	14 Jan 2025	1112	2	<2	2e	<2
I25	14 Jan 2025	1112	6	<20	<2	2e
I25	14 Jan 2025	1112	9	2e	<2	<2
I25	21 Jan 2025	1120	2	<2	<2	<2
I25	21 Jan 2025	1120	6	2e	<2	<2
I25	21 Jan 2025	1120	9	2e	<2	2e
I25	28 Jan 2025	1023	2	200e	20e	30e
I25	28 Jan 2025	1023	6	860	90	96
I25	28 Jan 2025	1023	9	740	92	120
I26	06 Jan 2025	1132	2	<2	<2	<2
I26	06 Jan 2025	1132	6	42	22e	4e
I26	06 Jan 2025	1132	9	20e	14e	8e

Station	Date	Time	Depth	Total	Fecal	Entero
I26	14 Jan 2025	1124	2	<2	<2	<2
I26	14 Jan 2025	1124	6	<2	<2	<2
I26	14 Jan 2025	1124	9	4e	<2	2e
I26	21 Jan 2025	1130	2	2e	<2	<2
I26	21 Jan 2025	1130	6	<2	<2	<2
I26	21 Jan 2025	1130	9	<2	<2	6e
I26	28 Jan 2025	1033	2	1100	280e	110
I26	28 Jan 2025	1033	6	13000	1000	440
I26	28 Jan 2025	1033	9	11000	1600e	640
I32	06 Jan 2025	1139	2	2e	<2	<2
I32	06 Jan 2025	1139	6	4e	<2	2e
I32	06 Jan 2025	1139	9	10e	6e	<2
I32	14 Jan 2025	1134	2	<2	<2	<2
I32	14 Jan 2025	1134	6	2e	2e	<2
I32	14 Jan 2025	1134	9	<2	<2	<2
I32	21 Jan 2025	1143	2	<2	<2	<2
I32	21 Jan 2025	1143	6	<2	<2	2e
I32	21 Jan 2025	1143	9	<2	<2	<2
I32	28 Jan 2025	1044	2	94	4e	28e
I32	28 Jan 2025	1044	6	2400e	86	240e
I32	28 Jan 2025	1044	9	1000	140e	180e
I39	06 Jan 2025	1027	2	<2	<2	<2
I39	06 Jan 2025	1027	12	4e	<2	<2
I39	06 Jan 2025	1027	18	24e	4e	4e
I39	14 Jan 2025	1013	2	<2	<2	<2
I39	14 Jan 2025	1013	12	<2	<2	<2
I39	14 Jan 2025	1013	18	4e	<2	<2
I39	21 Jan 2025	1036	2	<2	<2	<2
I39	21 Jan 2025	1036	12	<2	<2	<2
I39	21 Jan 2025	1036	18	<2	<2	<2
I39	28 Jan 2025	940	2	2600e	180e	92
I39	28 Jan 2025	940	12	160e	30e	34e
I39	28 Jan 2025	940	18	300e	44	46
I40	06 Jan 2025	1101	2	7000	2400e	2400e
I40	06 Jan 2025	1101	6	8400	3600e	2400e
I40	06 Jan 2025	1101	9	8800	1800e	860
I40	14 Jan 2025	1046	2	860	380e	82
I40	14 Jan 2025	1046	6	8200	3000e	540
I40	14 Jan 2025	1046	9	8000	2200e	380e
I40	21 Jan 2025	1105	2	320e	40e	980
I40	21 Jan 2025	1105	6	200e	60e	260e
I40	21 Jan 2025	1105	9	480	120e	300e
I40	28 Jan 2025	1011	2	2000e	400	140e
I40	28 Jan 2025	1011	6	2400e	240e	180e
I40	28 Jan 2025	1011	9	3200e	180e	320e

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	06 Jan 2025	Arrive Time	1050
I19	06 Jan 2025	Depart Time	1054
I19	06 Jan 2025	Air Temp (C)	14.2
I19	06 Jan 2025	Visibility (mi)	7
I19	06 Jan 2025	Wind Speed (kts)	6.5
I19	06 Jan 2025	Wind Dir	SE
I19	06 Jan 2025	Sea State	Calm
I19	06 Jan 2025	High Tide Time	212
I19	06 Jan 2025	Low Tide Time	1959
I19	06 Jan 2025	Comments	
I19	14 Jan 2025	Arrive Time	1035
I19	14 Jan 2025	Depart Time	1039
I19	14 Jan 2025	Air Temp (C)	13.5
I19	14 Jan 2025	Visibility (mi)	10
I19	14 Jan 2025	Wind Speed (kts)	7.3
I19	14 Jan 2025	Wind Dir	W
I19	14 Jan 2025	Sea State	Calm
I19	14 Jan 2025	High Tide Time	846
I19	14 Jan 2025	Low Tide Time	1558
I19	14 Jan 2025	Comments	
I19	21 Jan 2025	Arrive Time	1054
I19	21 Jan 2025	Depart Time	1058
I19	21 Jan 2025	Air Temp (C)	13.8
I19	21 Jan 2025	Visibility (mi)	10
I19	21 Jan 2025	Wind Speed (kts)	14.1
I19	21 Jan 2025	Wind Dir	NW
I19	21 Jan 2025	Sea State	Light Chop
I19	21 Jan 2025	High Tide Time	204
I19	21 Jan 2025	Low Tide Time	928
I19	21 Jan 2025	Comments	
I19	28 Jan 2025	Arrive Time	1000
I19	28 Jan 2025	Depart Time	1004
I19	28 Jan 2025	Air Temp (C)	11.8
I19	28 Jan 2025	Visibility (mi)	10
I19	28 Jan 2025	Wind Speed (kts)	4.6
I19	28 Jan 2025	Wind Dir	SE
I19	28 Jan 2025	Sea State	Regular Swell
I19	28 Jan 2025	High Tide Time	752
I19	28 Jan 2025	Low Tide Time	1510
I19	28 Jan 2025	Comments	
I40	06 Jan 2025	Arrive Time	1101
I40	06 Jan 2025	Depart Time	1105
I40	06 Jan 2025	Air Temp (C)	14.4
I40	06 Jan 2025	Visibility (mi)	7
I40	06 Jan 2025	Wind Speed (kts)	5.7
I40	06 Jan 2025	Wind Dir	SE
I40	06 Jan 2025	Sea State	Calm
I40	06 Jan 2025	High Tide Time	212
I40	06 Jan 2025	Low Tide Time	1959
I40	06 Jan 2025	Comments	
I40	14 Jan 2025	Arrive Time	1046

Station	Date	Parameter	Value
I40	14 Jan 2025	Depart Time	1051
I40	14 Jan 2025	Air Temp (C)	13.3
I40	14 Jan 2025	Visibility (mi)	10
I40	14 Jan 2025	Wind Speed (kts)	6.6
I40	14 Jan 2025	Wind Dir	W
I40	14 Jan 2025	Sea State	Calm
I40	14 Jan 2025	High Tide Time	846
I40	14 Jan 2025	Low Tide Time	1558
I40	14 Jan 2025	Comments	
I40	21 Jan 2025	Arrive Time	1105
I40	21 Jan 2025	Depart Time	1108
I40	21 Jan 2025	Air Temp (C)	13.8
I40	21 Jan 2025	Visibility (mi)	10
I40	21 Jan 2025	Wind Speed (kts)	2.7
I40	21 Jan 2025	Wind Dir	NW
I40	21 Jan 2025	Sea State	Light Chop
I40	21 Jan 2025	High Tide Time	204
I40	21 Jan 2025	Low Tide Time	928
I40	21 Jan 2025	Comments	
I40	28 Jan 2025	Arrive Time	1011
I40	28 Jan 2025	Depart Time	1016
I40	28 Jan 2025	Air Temp (C)	12
I40	28 Jan 2025	Visibility (mi)	10
I40	28 Jan 2025	Wind Speed (kts)	3.2
I40	28 Jan 2025	Wind Dir	SE
I40	28 Jan 2025	Sea State	Regular Swell
I40	28 Jan 2025	High Tide Time	752
I40	28 Jan 2025	Low Tide Time	1510
I40	28 Jan 2025	Comments	
I24	06 Jan 2025	Arrive Time	1110
I24	06 Jan 2025	Depart Time	1113
I24	06 Jan 2025	Air Temp (C)	14.3
I24	06 Jan 2025	Visibility (mi)	7
I24	06 Jan 2025	Wind Speed (kts)	4.7
I24	06 Jan 2025	Wind Dir	SE
I24	06 Jan 2025	Sea State	Calm
I24	06 Jan 2025	High Tide Time	212
I24	06 Jan 2025	Low Tide Time	1959
I24	06 Jan 2025	Comments	
I24	14 Jan 2025	Arrive Time	1058
I24	14 Jan 2025	Depart Time	1059
I24	14 Jan 2025	Air Temp (C)	13.6
I24	14 Jan 2025	Visibility (mi)	10
I24	14 Jan 2025	Wind Speed (kts)	8.9
I24	14 Jan 2025	Wind Dir	W
I24	14 Jan 2025	Sea State	Calm
I24	14 Jan 2025	High Tide Time	846
I24	14 Jan 2025	Low Tide Time	1558
I24	14 Jan 2025	Comments	
I24	21 Jan 2025	Arrive Time	1113
I24	21 Jan 2025	Depart Time	1116
I24	21 Jan 2025	Air Temp (C)	14.1
I24	21 Jan 2025	Visibility (mi)	10
I24	21 Jan 2025	Wind Speed (kts)	7.2
I24	21 Jan 2025	Wind Dir	W
I24	21 Jan 2025	Sea State	Light Chop

Station	Date	Parameter	Value
I24	21 Jan 2025	High Tide Time	204
I24	21 Jan 2025	Low Tide Time	928
I24	21 Jan 2025	Comments	
I24	28 Jan 2025	Arrive Time	1018
I24	28 Jan 2025	Depart Time	1022
I24	28 Jan 2025	Air Temp (C)	12
I24	28 Jan 2025	Visibility (mi)	10
I24	28 Jan 2025	Wind Speed (kts)	5
I24	28 Jan 2025	Wind Dir	S
I24	28 Jan 2025	Sea State	Regular Swell
I24	28 Jan 2025	High Tide Time	752
I24	28 Jan 2025	Low Tide Time	1510
I24	28 Jan 2025	Comments	
I25	06 Jan 2025	Arrive Time	1121
I25	06 Jan 2025	Depart Time	1124
I25	06 Jan 2025	Air Temp (C)	14.3
I25	06 Jan 2025	Visibility (mi)	7
I25	06 Jan 2025	Wind Speed (kts)	5.3
I25	06 Jan 2025	Wind Dir	S
I25	06 Jan 2025	Sea State	Calm
I25	06 Jan 2025	High Tide Time	212
I25	06 Jan 2025	Low Tide Time	1959
I25	06 Jan 2025	Comments	
I25	14 Jan 2025	Arrive Time	1112
I25	14 Jan 2025	Depart Time	1120
I25	14 Jan 2025	Air Temp (C)	13.2
I25	14 Jan 2025	Visibility (mi)	10
I25	14 Jan 2025	Wind Speed (kts)	7.8
I25	14 Jan 2025	Wind Dir	SW
I25	14 Jan 2025	Sea State	Calm
I25	14 Jan 2025	High Tide Time	846
I25	14 Jan 2025	Low Tide Time	1558
I25	14 Jan 2025	Comments	O2 sat seems low and after reviewing the whole day it seems there may be a need for calibration
I25	21 Jan 2025	Arrive Time	1120
I25	21 Jan 2025	Depart Time	1120
I25	21 Jan 2025	Air Temp (C)	14.4
I25	21 Jan 2025	Visibility (mi)	10
I25	21 Jan 2025	Wind Speed (kts)	6.8
I25	21 Jan 2025	Wind Dir	NW
I25	21 Jan 2025	Sea State	Light Chop
I25	21 Jan 2025	High Tide Time	204
I25	21 Jan 2025	Low Tide Time	928
I25	21 Jan 2025	Comments	Possible Red Tide
I25	28 Jan 2025	Arrive Time	1023
I25	28 Jan 2025	Depart Time	1027
I25	28 Jan 2025	Air Temp (C)	12
I25	28 Jan 2025	Visibility (mi)	10
I25	28 Jan 2025	Wind Speed (kts)	2.1
I25	28 Jan 2025	Wind Dir	SE
I25	28 Jan 2025	Sea State	Regular Swell
I25	28 Jan 2025	High Tide Time	752
I25	28 Jan 2025	Low Tide Time	1510
I25	28 Jan 2025	Comments	
I39	06 Jan 2025	Arrive Time	1027

Station	Date	Parameter	Value
I39	06 Jan 2025	Depart Time	1032
I39	06 Jan 2025	Air Temp (C)	14.8
I39	06 Jan 2025	Visibility (mi)	7
I39	06 Jan 2025	Wind Speed (kts)	0
I39	06 Jan 2025	Wind Dir	E
I39	06 Jan 2025	Sea State	Calm
I39	06 Jan 2025	High Tide Time	212
I39	06 Jan 2025	Low Tide Time	1959
I39	06 Jan 2025	Comments	
I39	14 Jan 2025	Arrive Time	1013
I39	14 Jan 2025	Depart Time	1028
I39	14 Jan 2025	Air Temp (C)	13
I39	14 Jan 2025	Visibility (mi)	10
I39	14 Jan 2025	Wind Speed (kts)	3.6
I39	14 Jan 2025	Wind Dir	NW
I39	14 Jan 2025	Sea State	Calm
I39	14 Jan 2025	High Tide Time	846
I39	14 Jan 2025	Low Tide Time	1558
I39	14 Jan 2025	Comments	2 casts performed on one file due to questions about high surface CDOM. please use cast 2.
I39	21 Jan 2025	Arrive Time	1036
I39	21 Jan 2025	Depart Time	1039
I39	21 Jan 2025	Air Temp (C)	13.2
I39	21 Jan 2025	Visibility (mi)	10
I39	21 Jan 2025	Wind Speed (kts)	3.9
I39	21 Jan 2025	Wind Dir	W
I39	21 Jan 2025	Sea State	Regular Swell
I39	21 Jan 2025	High Tide Time	204
I39	21 Jan 2025	Low Tide Time	928
I39	21 Jan 2025	Comments	
I39	28 Jan 2025	Arrive Time	940
I39	28 Jan 2025	Depart Time	946
I39	28 Jan 2025	Air Temp (C)	11.8
I39	28 Jan 2025	Visibility (mi)	10
I39	28 Jan 2025	Wind Speed (kts)	3
I39	28 Jan 2025	Wind Dir	E
I39	28 Jan 2025	Sea State	Regular Swell
I39	28 Jan 2025	High Tide Time	752
I39	28 Jan 2025	Low Tide Time	1510
I39	28 Jan 2025	Comments	
I26	06 Jan 2025	Arrive Time	1132
I26	06 Jan 2025	Depart Time	1133
I26	06 Jan 2025	Air Temp (C)	14.2
I26	06 Jan 2025	Visibility (mi)	7
I26	06 Jan 2025	Wind Speed (kts)	4.6
I26	06 Jan 2025	Wind Dir	S
I26	06 Jan 2025	Sea State	Calm
I26	06 Jan 2025	High Tide Time	212
I26	06 Jan 2025	Low Tide Time	1959
I26	06 Jan 2025	Comments	
I26	14 Jan 2025	Arrive Time	1124
I26	14 Jan 2025	Depart Time	1127
I26	14 Jan 2025	Air Temp (C)	13.3
I26	14 Jan 2025	Visibility (mi)	10
I26	14 Jan 2025	Wind Speed (kts)	6.9
I26	14 Jan 2025	Wind Dir	W

Station	Date	Parameter	Value
I26	14 Jan 2025	Sea State	Calm
I26	14 Jan 2025	High Tide Time	846
I26	14 Jan 2025	Low Tide Time	1558
I26	14 Jan 2025	Comments	
I26	21 Jan 2025	Arrive Time	1130
I26	21 Jan 2025	Depart Time	1133
I26	21 Jan 2025	Air Temp (C)	14.2
I26	21 Jan 2025	Visibility (mi)	10
I26	21 Jan 2025	Wind Speed (kts)	6.9
I26	21 Jan 2025	Wind Dir	W
I26	21 Jan 2025	Sea State	Light Chop
I26	21 Jan 2025	High Tide Time	204
I26	21 Jan 2025	Low Tide Time	928
I26	21 Jan 2025	Comments	
I26	28 Jan 2025	Arrive Time	1033
I26	28 Jan 2025	Depart Time	1037
I26	28 Jan 2025	Air Temp (C)	12.2
I26	28 Jan 2025	Visibility (mi)	10
I26	28 Jan 2025	Wind Speed (kts)	2.9
I26	28 Jan 2025	Wind Dir	SE
I26	28 Jan 2025	Sea State	Regular Swell
I26	28 Jan 2025	High Tide Time	752
I26	28 Jan 2025	Low Tide Time	1510
I26	28 Jan 2025	Comments	
I32	06 Jan 2025	Arrive Time	1139
I32	06 Jan 2025	Depart Time	1144
I32	06 Jan 2025	Air Temp (C)	14.4
I32	06 Jan 2025	Visibility (mi)	7
I32	06 Jan 2025	Wind Speed (kts)	4
I32	06 Jan 2025	Wind Dir	W
I32	06 Jan 2025	Sea State	Calm
I32	06 Jan 2025	High Tide Time	212
I32	06 Jan 2025	Low Tide Time	1959
I32	06 Jan 2025	Comments	
I32	14 Jan 2025	Arrive Time	1134
I32	14 Jan 2025	Depart Time	1138
I32	14 Jan 2025	Air Temp (C)	13.5
I32	14 Jan 2025	Visibility (mi)	10
I32	14 Jan 2025	Wind Speed (kts)	6.3
I32	14 Jan 2025	Wind Dir	SW
I32	14 Jan 2025	Sea State	Calm
I32	14 Jan 2025	High Tide Time	846
I32	14 Jan 2025	Low Tide Time	1558
I32	14 Jan 2025	Comments	
I32	21 Jan 2025	Arrive Time	1143
I32	21 Jan 2025	Depart Time	1146
I32	21 Jan 2025	Air Temp (C)	14.3
I32	21 Jan 2025	Visibility (mi)	10
I32	21 Jan 2025	Wind Speed (kts)	8.4
I32	21 Jan 2025	Wind Dir	W
I32	21 Jan 2025	Sea State	Light Chop
I32	21 Jan 2025	High Tide Time	204
I32	21 Jan 2025	Low Tide Time	928
I32	21 Jan 2025	Comments	
I32	28 Jan 2025	Arrive Time	1044

Station	Date	Parameter	Value
I32	28 Jan 2025	Depart Time	1049
I32	28 Jan 2025	Air Temp (C)	12.5
I32	28 Jan 2025	Visibility (mi)	10
I32	28 Jan 2025	Wind Speed (kts)	4.1
I32	28 Jan 2025	Wind Dir	SE
I32	28 Jan 2025	Sea State	Regular Swell
I32	28 Jan 2025	High Tide Time	752
I32	28 Jan 2025	Low Tide Time	1510
I32	28 Jan 2025	Comments	

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 (s-t)	Chlor (µg/L)
I19	06 Jan 2025	1	12.67	42.47	7.4	33.43	8.0	25.2	1.94
I19	06 Jan 2025	2	12.65	42.01	7.4	33.42	8.0	25.2	2.17
I19	06 Jan 2025	3	12.65	40.96	7.4	33.42	8.0	25.2	2.69
I19	06 Jan 2025	4	12.62	41.10	7.4	33.42	8.0	25.2	2.74
I19	06 Jan 2025	5	12.58	41.57	7.3	33.43	8.0	25.3	2.56
I19	06 Jan 2025	6	12.55	42.10	7.3	33.43	8.0	25.3	2.41
I19	06 Jan 2025	7	12.53	40.45	7.3	33.43	8.0	25.3	2.52
I19	06 Jan 2025	8	12.51	36.59	7.2	33.43	8.0	25.3	2.45
I19	06 Jan 2025	9	12.47	36.19	7.0	33.43	8.0	25.3	2.19
I19	06 Jan 2025	10	12.37	35.36	6.4	33.44	8.0	25.3	2.03
I19	14 Jan 2025	1	12.71	65.24	7.8	33.45	8.1	25.2	3.51
I19	14 Jan 2025	2	12.69	65.43	7.8	33.45	8.1	25.2	5.05
I19	14 Jan 2025	3	12.65	64.33	7.8	33.44	8.1	25.3	11.06
I19	14 Jan 2025	4	12.63	61.73	7.8	33.44	8.1	25.3	14.69
I19	14 Jan 2025	5	12.59	60.39	7.7	33.45	8.1	25.3	12.39
I19	14 Jan 2025	6	12.53	60.55	7.7	33.45	8.1	25.3	11.45
I19	14 Jan 2025	7	12.46	61.05	7.7	33.45	8.1	25.3	10.31
I19	14 Jan 2025	8	12.36	61.68	7.6	33.46	8.1	25.3	8.48
I19	14 Jan 2025	9	12.32	61.71	7.4	33.46	8.0	25.3	6.71
I19	14 Jan 2025	10	12.30	61.71	7.2	33.46	8.0	25.3	5.07
I19	21 Jan 2025	1	12.93	71.48	8.9	33.43	8.2	25.2	3.72
I19	21 Jan 2025	2	12.92	71.44	8.9	33.43	8.2	25.2	3.52
I19	21 Jan 2025	3	12.91	70.96	8.9	33.44	8.2	25.2	3.94
I19	21 Jan 2025	4	12.90	70.76	8.9	33.43	8.2	25.2	5.93
I19	21 Jan 2025	5	12.89	70.45	8.9	33.44	8.2	25.2	6.30
I19	21 Jan 2025	6	12.87	69.91	8.9	33.43	8.2	25.2	6.41
I19	21 Jan 2025	7	12.86	69.14	8.9	33.43	8.2	25.2	6.18
I19	21 Jan 2025	8	12.85	68.29	8.8	33.43	8.2	25.2	5.82
I19	21 Jan 2025	9	12.85	66.99	8.8	33.43	8.2	25.2	5.83
I19	21 Jan 2025	10	12.86	66.79	8.8	33.43	8.2	25.2	5.78
I19	28 Jan 2025	1	13.31	77.51	9.1	33.29	8.2	25.0	1.44
I19	28 Jan 2025	2	13.31	77.22	9.1	33.29	8.2	25.0	1.53
I19	28 Jan 2025	3	13.18	74.25	9.2	33.29	8.2	25.0	3.60
I19	28 Jan 2025	4	13.19	76.41	9.3	33.30	8.2	25.0	3.98
I19	28 Jan 2025	5	13.19	79.24	9.3	33.30	8.2	25.0	4.62
I19	28 Jan 2025	6	13.19	81.06	9.3	33.30	8.2	25.0	4.98
I19	28 Jan 2025	7	13.19	80.40	9.3	33.30	8.2	25.0	4.83
I19	28 Jan 2025	8	13.20	80.38	9.3	33.30	8.2	25.0	5.26
I19	28 Jan 2025	9	13.20	81.44	9.3	33.30	8.2	25.0	4.68
I19	28 Jan 2025	10	13.20	79.97	9.2	33.30	8.2	25.0	4.27
I40	06 Jan 2025	1	12.95	34.99	8.9	33.17	8.1	25.0	5.28
I40	06 Jan 2025	2	12.87	34.79	8.8	33.20	8.1	25.0	5.98
I40	06 Jan 2025	3	12.67	33.06	8.5	33.30	8.1	25.1	7.64
I40	06 Jan 2025	4	12.64	31.69	8.3	33.35	8.1	25.2	5.43
I40	06 Jan 2025	5	12.70	31.55	8.5	33.39	8.1	25.2	5.39
I40	06 Jan 2025	6	12.71	32.60	8.5	33.40	8.1	25.2	4.90
I40	06 Jan 2025	7	12.68	29.77	8.3	33.40	8.1	25.2	3.70
I40	06 Jan 2025	8	12.55	27.22	7.6	33.39	8.1	25.2	3.23
I40	06 Jan 2025	9	12.40	24.77	6.3	33.41	8.0	25.3	2.02
I40	06 Jan 2025	10	12.37	12.83	5.5	33.42	8.0	25.3	1.80
I40	14 Jan 2025	1	12.60	48.11	8.3	33.44	8.1	25.3	1.92
I40	14 Jan 2025	2	12.58	47.79	8.2	33.44	8.1	25.3	2.16
I40	14 Jan 2025	3	12.57	46.89	8.1	33.45	8.1	25.3	4.34
I40	14 Jan 2025	4	12.55	46.21	8.0	33.45	8.1	25.3	5.55
I40	14 Jan 2025	5	12.41	45.84	7.9	33.44	8.1	25.3	4.54
I40	14 Jan 2025	6	12.29	44.21	8.1	33.41	8.1	25.3	3.28
I40	14 Jan 2025	7	12.23	42.31	8.2	33.41	8.1	25.3	2.90
I40	14 Jan 2025	8	12.30	41.55	7.9	33.43	8.0	25.3	2.15
I40	14 Jan 2025	9	12.31	39.40	7.3	33.44	8.0	25.3	1.89
I40	14 Jan 2025	10	12.23	35.96	7.8	33.43	8.0	25.3	1.91
I40	21 Jan 2025	1	12.95	62.81	9.5	33.33	8.2	25.1	5.43
I40	21 Jan 2025	2	12.94	62.45	9.5	33.33	8.2	25.1	5.50

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I40	21 Jan 2025	3	12.95	62.95	9.5	33.35	8.2	25.1	9.55
I40	21 Jan 2025	4	12.96	63.70	9.4	33.36	8.2	25.1	11.68
I40	21 Jan 2025	5	12.96	65.34	9.2	33.41	8.2	25.2	10.31
I40	21 Jan 2025	6	12.93	67.84	8.9	33.42	8.2	25.2	9.02
I40	21 Jan 2025	7	12.88	67.67	8.7	33.42	8.2	25.2	8.59
I40	21 Jan 2025	8	12.86	67.04	8.6	33.42	8.2	25.2	6.89
I40	21 Jan 2025	9	12.85	68.30	8.6	33.42	8.2	25.2	6.08
I40	21 Jan 2025	10	12.82	69.01	8.6	33.41	8.2	25.2	4.38
I40	28 Jan 2025	1	13.20	74.52	9.3	33.27	8.2	25.0	6.17
I40	28 Jan 2025	2	13.20	75.87	9.2	33.28	8.2	25.0	6.33
I40	28 Jan 2025	3	13.20	76.81	9.2	33.27	8.2	25.0	6.21
I40	28 Jan 2025	4	13.20	76.26	9.2	33.30	8.2	25.0	5.89
I40	28 Jan 2025	5	13.20	76.67	9.1	33.34	8.2	25.1	5.77
I40	28 Jan 2025	6	13.20	79.04	9.1	33.35	8.2	25.1	5.77
I40	28 Jan 2025	7	13.21	80.09	9.1	33.35	8.2	25.1	5.52
I40	28 Jan 2025	8	13.20	79.52	9.0	33.35	8.2	25.1	4.87
I40	28 Jan 2025	9	13.21	78.97	9.0	33.36	8.2	25.1	5.02
I40	28 Jan 2025	10	13.21	78.86	9.0	33.36	8.2	25.1	4.81
I24	06 Jan 2025	1	13.37	67.58	8.9	33.39	8.1	25.1	0.92
I24	06 Jan 2025	2	13.24	67.48	9.0	33.39	8.1	25.1	1.19
I24	06 Jan 2025	3	13.02	64.86	9.0	33.39	8.2	25.1	6.81
I24	06 Jan 2025	4	12.96	58.55	8.6	33.38	8.1	25.1	5.19
I24	06 Jan 2025	5	12.86	62.20	8.0	33.39	8.1	25.2	3.45
I24	06 Jan 2025	6	12.86	64.34	7.9	33.39	8.1	25.2	2.55
I24	06 Jan 2025	7	12.83	65.90	7.7	33.40	8.1	25.2	2.09
I24	06 Jan 2025	8	12.74	68.97	7.1	33.41	8.1	25.2	1.47
I24	06 Jan 2025	9	12.39	71.09	5.8	33.44	8.0	25.3	1.07
I24	06 Jan 2025	10	12.46	57.72	5.5	33.43	8.0	25.3	1.04
I24	14 Jan 2025	1	12.67	62.60	7.2	33.46	8.0	25.3	1.82
I24	14 Jan 2025	2	12.66	62.48	7.2	33.46	8.0	25.3	1.83
I24	14 Jan 2025	3	12.60	62.05	7.2	33.46	8.0	25.3	3.13
I24	14 Jan 2025	4	12.55	60.65	7.1	33.46	8.0	25.3	4.89
I24	14 Jan 2025	5	12.51	58.53	7.0	33.46	8.0	25.3	5.12
I24	14 Jan 2025	6	12.48	55.72	6.8	33.46	8.0	25.3	3.54
I24	14 Jan 2025	7	12.48	52.79	6.7	33.46	8.0	25.3	2.83
I24	14 Jan 2025	8	12.47	47.40	6.7	33.45	8.0	25.3	2.51
I24	14 Jan 2025	9	12.45	39.21	6.7	33.45	8.0	25.3	2.37
I24	14 Jan 2025	10	12.44	31.25	6.8	33.45	8.0	25.3	2.30
I24	14 Jan 2025	11	12.46	15.87	6.8	33.45	8.0	25.3	2.43
I24	21 Jan 2025	1	13.12	65.52	8.8	33.41	8.2	25.1	4.38
I24	21 Jan 2025	2	13.11	65.24	8.8	33.41	8.2	25.1	4.68
I24	21 Jan 2025	3	13.10	65.17	8.8	33.41	8.2	25.1	7.23
I24	21 Jan 2025	4	13.01	64.20	8.7	33.41	8.2	25.2	10.86
I24	21 Jan 2025	5	12.97	63.22	8.7	33.41	8.2	25.2	10.52
I24	21 Jan 2025	6	12.95	62.90	8.7	33.41	8.2	25.2	9.89
I24	21 Jan 2025	7	12.94	62.72	8.6	33.41	8.2	25.2	9.75
I24	21 Jan 2025	8	12.91	64.72	8.5	33.41	8.2	25.2	6.96
I24	21 Jan 2025	9	12.90	65.53	8.4	33.41	8.2	25.2	5.89
I24	21 Jan 2025	10	12.90	64.84	8.3	33.41	8.2	25.2	4.80
I24	28 Jan 2025	1	13.29	80.28	9.5	33.28	8.2	25.0	2.54
I24	28 Jan 2025	2	13.28	80.32	9.5	33.28	8.2	25.0	2.50
I24	28 Jan 2025	3	13.19	79.98	9.5	33.28	8.2	25.0	3.26
I24	28 Jan 2025	4	13.16	76.24	9.4	33.29	8.2	25.0	5.34
I24	28 Jan 2025	5	13.15	76.93	9.4	33.30	8.2	25.0	5.86
I24	28 Jan 2025	6	13.15	78.56	9.3	33.32	8.2	25.1	6.06
I24	28 Jan 2025	7	13.14	80.59	9.2	33.34	8.2	25.1	5.63
I24	28 Jan 2025	8	13.14	81.46	9.1	33.35	8.2	25.1	5.36
I24	28 Jan 2025	9	13.15	82.54	9.1	33.36	8.2	25.1	4.93
I24	28 Jan 2025	10	13.15	83.64	9.0	33.36	8.2	25.1	4.47
I24	28 Jan 2025	11	13.15	84.68	9.1	33.36	8.2	25.1	4.37
I25	06 Jan 2025	1	13.31	53.78	10.7	33.41	8.2	25.1	14.34
I25	06 Jan 2025	2	13.25	54.49	10.7	33.41	8.2	25.1	14.87
I25	06 Jan 2025	3	13.29	54.56	11.0	33.41	8.2	25.1	22.36
I25	06 Jan 2025	4	13.14	45.77	10.5	33.41	8.2	25.1	19.16
I25	06 Jan 2025	5	13.10	55.06	9.7	33.41	8.2	25.1	5.91
I25	06 Jan 2025	6	12.91	66.89	8.4	33.41	8.2	25.2	3.71
I25	06 Jan 2025	7	12.54	71.17	6.8	33.43	8.1	25.3	1.81
I25	06 Jan 2025	8	12.50	75.44	6.0	33.43	8.1	25.3	1.19

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I25	06 Jan 2025	9	12.28	58.24	4.9	33.45	8.0	25.3	1.09
I25	14 Jan 2025	1	12.61	66.87	6.6	33.46	8.0	25.3	2.17
I25	14 Jan 2025	2	12.60	66.64	6.6	33.46	8.0	25.3	2.14
I25	14 Jan 2025	3	12.59	66.51	6.6	33.46	8.0	25.3	2.44
I25	14 Jan 2025	4	12.55	66.04	6.6	33.46	8.0	25.3	3.94
I25	14 Jan 2025	5	12.54	64.94	6.5	33.46	8.0	25.3	5.20
I25	14 Jan 2025	6	12.49	63.69	6.4	33.46	8.0	25.3	4.58
I25	14 Jan 2025	7	12.48	58.52	6.2	33.46	8.0	25.3	3.61
I25	14 Jan 2025	8	12.48	55.58	6.2	33.46	8.0	25.3	3.15
I25	14 Jan 2025	9	12.48	54.66	6.1	33.46	8.0	25.3	3.02
I25	21 Jan 2025	1	13.11	52.57	9.6	33.43	8.2	25.2	18.20
I25	21 Jan 2025	2	13.11	52.79	9.6	33.43	8.2	25.2	17.42
I25	21 Jan 2025	3	13.10	52.84	9.5	33.43	8.2	25.2	21.25
I25	21 Jan 2025	4	13.05	56.47	9.3	33.43	8.2	25.2	20.72
I25	21 Jan 2025	5	13.05	58.90	9.2	33.43	8.2	25.2	18.42
I25	21 Jan 2025	6	13.04	58.80	9.1	33.43	8.2	25.2	17.86
I25	21 Jan 2025	7	13.03	60.93	8.9	33.43	8.2	25.2	14.35
I25	21 Jan 2025	8	13.03	62.01	8.8	33.43	8.2	25.2	13.54
I25	21 Jan 2025	9	13.03	61.29	8.7	33.43	8.2	25.2	8.42
I25	28 Jan 2025	1	13.37	73.18	9.4	33.27	8.2	25.0	1.43
I25	28 Jan 2025	2	13.27	73.53	9.5	33.28	8.2	25.0	1.97
I25	28 Jan 2025	3	13.17	71.93	9.5	33.30	8.2	25.0	3.91
I25	28 Jan 2025	4	13.14	71.35	9.4	33.33	8.2	25.1	4.83
I25	28 Jan 2025	5	13.12	73.99	9.2	33.34	8.2	25.1	4.64
I25	28 Jan 2025	6	13.11	77.38	9.2	33.34	8.2	25.1	4.15
I25	28 Jan 2025	7	13.10	79.03	9.1	33.34	8.2	25.1	4.27
I25	28 Jan 2025	8	13.10	80.07	9.1	33.34	8.2	25.1	3.88
I25	28 Jan 2025	9	13.10	80.35	9.1	33.34	8.2	25.1	3.80
I39	06 Jan 2025	1	13.18	75.08	9.8	33.42	8.2	25.1	3.83
I39	06 Jan 2025	2	13.15	75.37	9.9	33.42	8.2	25.1	3.09
I39	06 Jan 2025	3	13.04	75.05	10.1	33.42	8.2	25.2	7.85
I39	06 Jan 2025	4	12.98	68.04	9.9	33.42	8.2	25.2	14.66
I39	06 Jan 2025	5	12.95	65.81	9.5	33.41	8.2	25.2	11.80
I39	06 Jan 2025	6	12.94	70.16	9.1	33.41	8.2	25.2	9.17
I39	06 Jan 2025	7	12.90	73.50	8.8	33.41	8.2	25.2	6.50
I39	06 Jan 2025	8	12.88	77.32	8.6	33.41	8.2	25.2	5.16
I39	06 Jan 2025	9	12.86	78.86	8.3	33.41	8.2	25.2	4.09
I39	06 Jan 2025	10	12.51	81.35	7.4	33.40	8.1	25.3	2.55
I39	06 Jan 2025	11	12.27	85.13	6.4	33.40	8.1	25.3	2.19
I39	06 Jan 2025	12	12.01	88.27	5.6	33.45	8.1	25.4	2.07
I39	06 Jan 2025	13	12.00	90.63	5.2	33.47	8.0	25.4	1.78
I39	06 Jan 2025	14	11.98	90.35	5.1	33.48	8.0	25.4	1.53
I39	06 Jan 2025	15	11.94	88.69	4.9	33.50	8.0	25.4	1.45
I39	06 Jan 2025	16	11.92	88.68	4.6	33.51	8.0	25.4	1.26
I39	06 Jan 2025	17	11.90	87.16	4.4	33.52	7.9	25.5	0.99
I39	06 Jan 2025	18	11.89	82.38	4.3	33.52	7.9	25.5	0.99
I39	21 Jan 2025	1	13.01	84.41	9.8	33.44	8.2	25.2	2.67
I39	21 Jan 2025	2	13.00	84.20	9.8	33.44	8.2	25.2	2.84
I39	21 Jan 2025	3	13.00	83.36	9.8	33.44	8.2	25.2	3.78
I39	21 Jan 2025	4	12.99	82.59	9.8	33.44	8.2	25.2	5.01
I39	21 Jan 2025	5	12.94	82.41	9.8	33.44	8.2	25.2	7.29
I39	21 Jan 2025	6	12.92	80.60	9.7	33.44	8.2	25.2	8.71
I39	21 Jan 2025	7	12.92	81.00	9.6	33.44	8.2	25.2	7.44
I39	21 Jan 2025	8	12.91	81.49	9.6	33.44	8.2	25.2	7.14
I39	21 Jan 2025	9	12.91	82.40	9.5	33.44	8.2	25.2	6.50
I39	21 Jan 2025	10	12.91	83.02	9.5	33.44	8.2	25.2	6.37
I39	21 Jan 2025	11	12.91	83.30	9.4	33.44	8.2	25.2	6.32
I39	21 Jan 2025	12	12.90	83.42	9.4	33.44	8.2	25.2	6.30
I39	21 Jan 2025	13	12.90	83.60	9.4	33.44	8.2	25.2	6.00
I39	21 Jan 2025	14	12.90	83.92	9.3	33.44	8.2	25.2	5.64
I39	21 Jan 2025	15	12.89	84.41	9.2	33.44	8.2	25.2	4.57
I39	21 Jan 2025	16	12.85	85.90	9.0	33.44	8.2	25.2	2.87
I39	21 Jan 2025	17	12.77	87.83	8.4	33.44	8.2	25.2	1.47
I39	21 Jan 2025	18	12.62	89.89	7.7	33.44	8.1	25.3	0.78
I39	28 Jan 2025	1	13.09	87.20	9.4	33.37	8.2	25.1	1.83
I39	28 Jan 2025	2	13.09	87.25	9.4	33.37	8.2	25.1	2.00
I39	28 Jan 2025	3	13.07	86.94	9.4	33.37	8.2	25.1	2.15
I39	28 Jan 2025	4	13.07	86.93	9.4	33.37	8.2	25.1	2.54

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I39	28 Jan 2025	5	13.07	86.57	9.5	33.37	8.2	25.1	3.09
I39	28 Jan 2025	6	13.07	86.49	9.4	33.38	8.2	25.1	3.90
I39	28 Jan 2025	7	13.07	86.83	9.4	33.38	8.2	25.1	4.40
I39	28 Jan 2025	8	13.07	86.93	9.4	33.38	8.2	25.1	4.53
I39	28 Jan 2025	9	13.07	86.83	9.4	33.38	8.2	25.1	4.67
I39	28 Jan 2025	10	13.07	86.20	9.4	33.38	8.2	25.1	4.58
I39	28 Jan 2025	11	13.07	86.97	9.4	33.38	8.2	25.1	4.48
I39	28 Jan 2025	12	13.07	86.79	9.4	33.38	8.2	25.1	4.59
I39	28 Jan 2025	13	13.07	87.07	9.4	33.38	8.2	25.1	4.38
I39	28 Jan 2025	14	13.06	87.48	9.4	33.38	8.2	25.1	4.34
I39	28 Jan 2025	15	13.07	87.22	9.4	33.38	8.2	25.1	4.42
I39	28 Jan 2025	16	13.06	86.62	9.4	33.38	8.2	25.1	4.31
I39	28 Jan 2025	17	13.06	87.18	9.4	33.38	8.2	25.1	4.21
I39	28 Jan 2025	18	13.06	87.66	9.4	33.38	8.2	25.1	4.21
I26	06 Jan 2025	1	13.33	68.29	9.8	33.43	8.2	25.1	1.20
I26	06 Jan 2025	2	13.01	67.67	10.3	33.43	8.2	25.2	8.66
I26	06 Jan 2025	3	12.72	47.44	8.6	33.43	8.2	25.2	11.19
I26	06 Jan 2025	4	12.60	54.23	7.3	33.43	8.1	25.3	1.69
I26	06 Jan 2025	5	12.52	59.97	6.4	33.43	8.1	25.3	1.27
I26	06 Jan 2025	6	12.41	63.27	5.8	33.44	8.0	25.3	1.18
I26	06 Jan 2025	7	12.32	63.87	5.4	33.44	8.0	25.3	1.06
I26	06 Jan 2025	8	12.27	65.52	5.1	33.45	8.0	25.3	0.96
I26	06 Jan 2025	9	12.26	64.05	4.9	33.45	8.0	25.3	0.93
I26	14 Jan 2025	1	12.81	80.23	7.9	33.45	8.1	25.2	1.19
I26	14 Jan 2025	2	12.80	80.34	7.9	33.45	8.1	25.2	1.15
I26	14 Jan 2025	3	12.76	80.24	7.8	33.45	8.1	25.2	1.38
I26	14 Jan 2025	4	12.68	79.64	7.7	33.45	8.1	25.3	2.15
I26	14 Jan 2025	5	12.61	77.34	7.5	33.45	8.1	25.3	2.88
I26	14 Jan 2025	6	12.58	75.96	7.3	33.45	8.1	25.3	2.79
I26	14 Jan 2025	7	12.53	75.60	6.8	33.45	8.1	25.3	2.81
I26	14 Jan 2025	8	12.46	75.01	6.1	33.46	8.0	25.3	1.64
I26	14 Jan 2025	9	12.43	74.77	5.5	33.46	8.0	25.3	1.35
I26	21 Jan 2025	1	13.02	76.46	9.3	33.44	8.2	25.2	3.10
I26	21 Jan 2025	2	13.03	76.46	9.3	33.44	8.2	25.2	3.10
I26	21 Jan 2025	3	13.02	76.40	9.3	33.44	8.2	25.2	4.07
I26	21 Jan 2025	4	12.99	76.21	9.2	33.44	8.2	25.2	5.17
I26	21 Jan 2025	5	12.94	76.27	9.1	33.43	8.2	25.2	6.66
I26	21 Jan 2025	6	12.92	76.39	8.9	33.43	8.2	25.2	6.74
I26	21 Jan 2025	7	12.87	77.61	8.7	33.43	8.2	25.2	5.02
I26	21 Jan 2025	8	12.84	78.74	8.3	33.43	8.2	25.2	2.28
I26	21 Jan 2025	9	12.85	76.68	8.2	33.43	8.1	25.2	1.87
I26	28 Jan 2025	1	13.63	78.77	8.9	33.25	8.2	24.9	1.09
I26	28 Jan 2025	2	13.54	78.44	8.9	33.25	8.2	24.9	1.49
I26	28 Jan 2025	3	13.41	76.32	9.0	33.24	8.2	25.0	3.31
I26	28 Jan 2025	4	13.30	74.14	9.1	33.25	8.2	25.0	4.76
I26	28 Jan 2025	5	13.27	73.02	9.0	33.26	8.2	25.0	4.72
I26	28 Jan 2025	6	13.26	74.43	8.9	33.26	8.2	25.0	4.74
I26	28 Jan 2025	7	13.24	76.81	8.8	33.27	8.2	25.0	4.32
I26	28 Jan 2025	8	13.23	78.88	8.8	33.27	8.2	25.0	4.27
I26	28 Jan 2025	9	13.22	79.93	8.7	33.27	8.2	25.0	3.58
I32	06 Jan 2025	1	13.21	71.17	8.9	33.42	8.1	25.1	1.14
I32	06 Jan 2025	2	13.02	70.59	8.8	33.42	8.1	25.2	1.33
I32	06 Jan 2025	3	12.87	67.50	8.7	33.43	8.1	25.2	3.12
I32	06 Jan 2025	4	12.83	52.73	8.5	33.43	8.1	25.2	4.74
I32	06 Jan 2025	5	12.82	35.87	8.5	33.42	8.1	25.2	4.90
I32	06 Jan 2025	6	12.78	31.91	8.4	33.42	8.1	25.2	4.56
I32	06 Jan 2025	7	12.73	29.89	8.1	33.42	8.1	25.2	4.10
I32	06 Jan 2025	8	12.69	27.10	7.8	33.42	8.1	25.2	3.59
I32	06 Jan 2025	9	12.66	28.79	7.6	33.42	8.0	25.2	3.19
I32	06 Jan 2025	10	12.67	34.69	7.5	33.42	8.0	25.2	2.79
I32	14 Jan 2025	1	12.92	72.05	8.0	33.45	8.1	25.2	0.87
I32	14 Jan 2025	2	12.89	72.17	8.0	33.45	8.1	25.2	0.96
I32	14 Jan 2025	3	12.78	72.03	8.0	33.45	8.1	25.2	2.24
I32	14 Jan 2025	4	12.66	68.75	8.0	33.45	8.1	25.3	5.65
I32	14 Jan 2025	5	12.62	65.23	7.7	33.45	8.1	25.3	4.70
I32	14 Jan 2025	6	12.59	63.87	7.5	33.45	8.1	25.3	3.65
I32	14 Jan 2025	7	12.57	61.76	7.5	33.45	8.1	25.3	3.68
I32	14 Jan 2025	8	12.55	60.10	7.5	33.45	8.1	25.3	3.64

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/l)	Sal (ppt)	pH	Dens (s-t)	Chlor (µg/L)
I32	14 Jan 2025	9	12.53	60.99	7.6	33.45	8.1	25.3	3.20
I32	14 Jan 2025	10	12.46	60.59	7.8	33.46	8.1	25.3	2.91
I32	21 Jan 2025	1	13.02	55.60	9.0	33.45	8.2	25.2	7.21
I32	21 Jan 2025	2	13.02	55.60	9.0	33.45	8.2	25.2	7.73
I32	21 Jan 2025	3	13.00	55.25	9.0	33.45	8.2	25.2	10.98
I32	21 Jan 2025	4	12.98	54.61	8.9	33.45	8.2	25.2	13.70
I32	21 Jan 2025	5	12.97	53.87	8.9	33.44	8.2	25.2	14.50
I32	21 Jan 2025	6	12.96	52.52	8.9	33.44	8.2	25.2	14.79
I32	21 Jan 2025	7	12.96	51.86	8.9	33.44	8.2	25.2	14.83
I32	21 Jan 2025	8	12.94	51.26	8.8	33.44	8.2	25.2	15.00
I32	21 Jan 2025	9	12.91	49.76	8.8	33.45	8.2	25.2	14.86
I32	21 Jan 2025	10	12.85	47.88	8.7	33.45	8.2	25.2	11.61
I32	28 Jan 2025	1	13.92	82.10	8.8	33.33	8.2	24.9	0.92
I32	28 Jan 2025	2	13.85	81.77	8.9	33.33	8.2	24.9	1.36
I32	28 Jan 2025	3	13.79	80.74	9.0	33.33	8.2	24.9	3.08
I32	28 Jan 2025	4	13.77	79.10	8.9	33.32	8.2	24.9	3.76
I32	28 Jan 2025	5	13.75	79.00	8.9	33.33	8.2	24.9	4.04
I32	28 Jan 2025	6	13.75	79.97	8.8	33.33	8.2	24.9	3.92
I32	28 Jan 2025	7	13.74	81.32	8.7	33.33	8.2	25.0	2.96
I32	28 Jan 2025	8	13.73	82.46	8.5	33.34	8.2	25.0	2.35
I32	28 Jan 2025	9	13.72	82.35	8.4	33.34	8.2	25.0	2.09
I32	28 Jan 2025	10	13.71	80.96	8.3	33.34	8.2	25.0	1.76

NA = not available

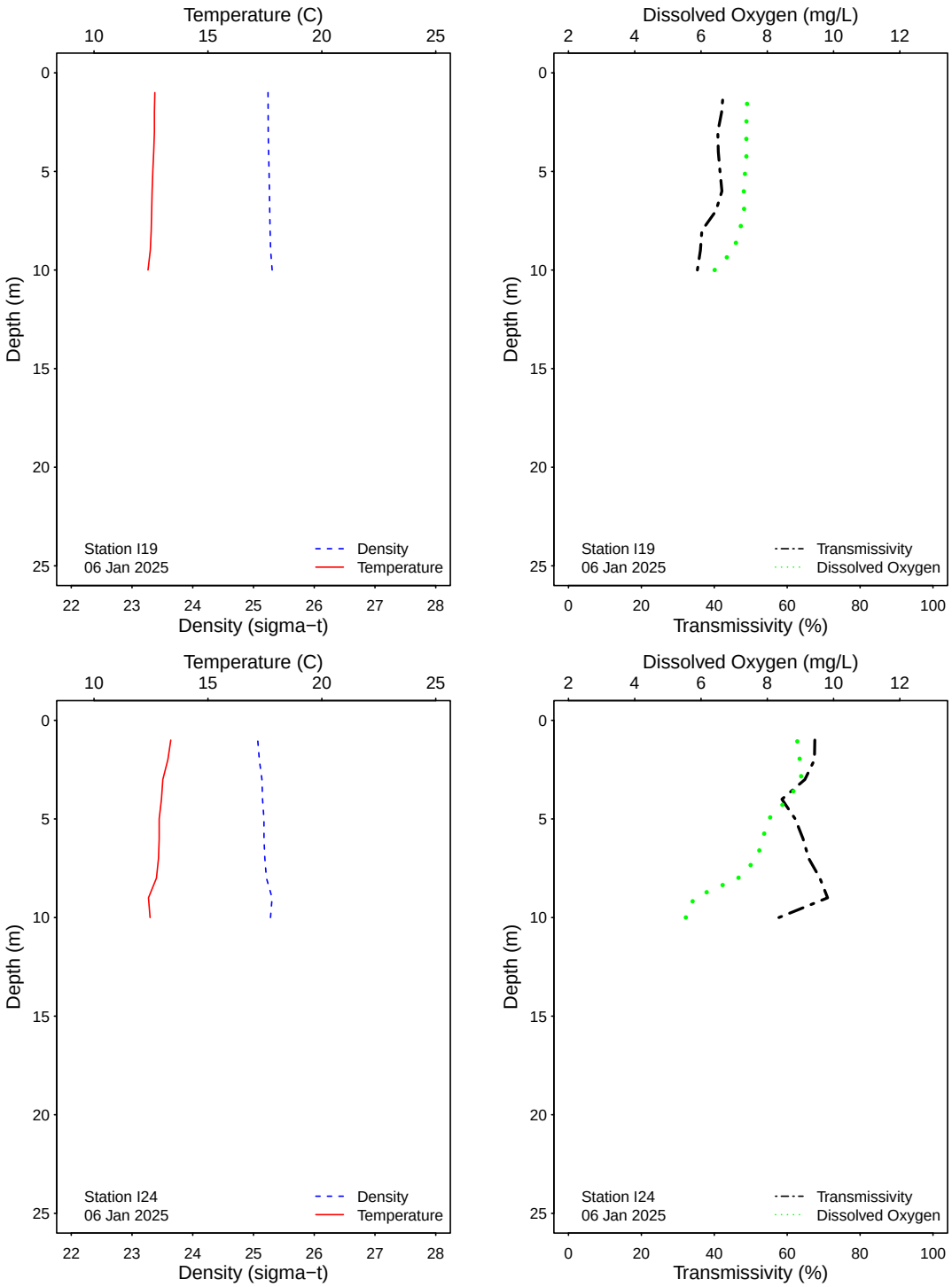

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

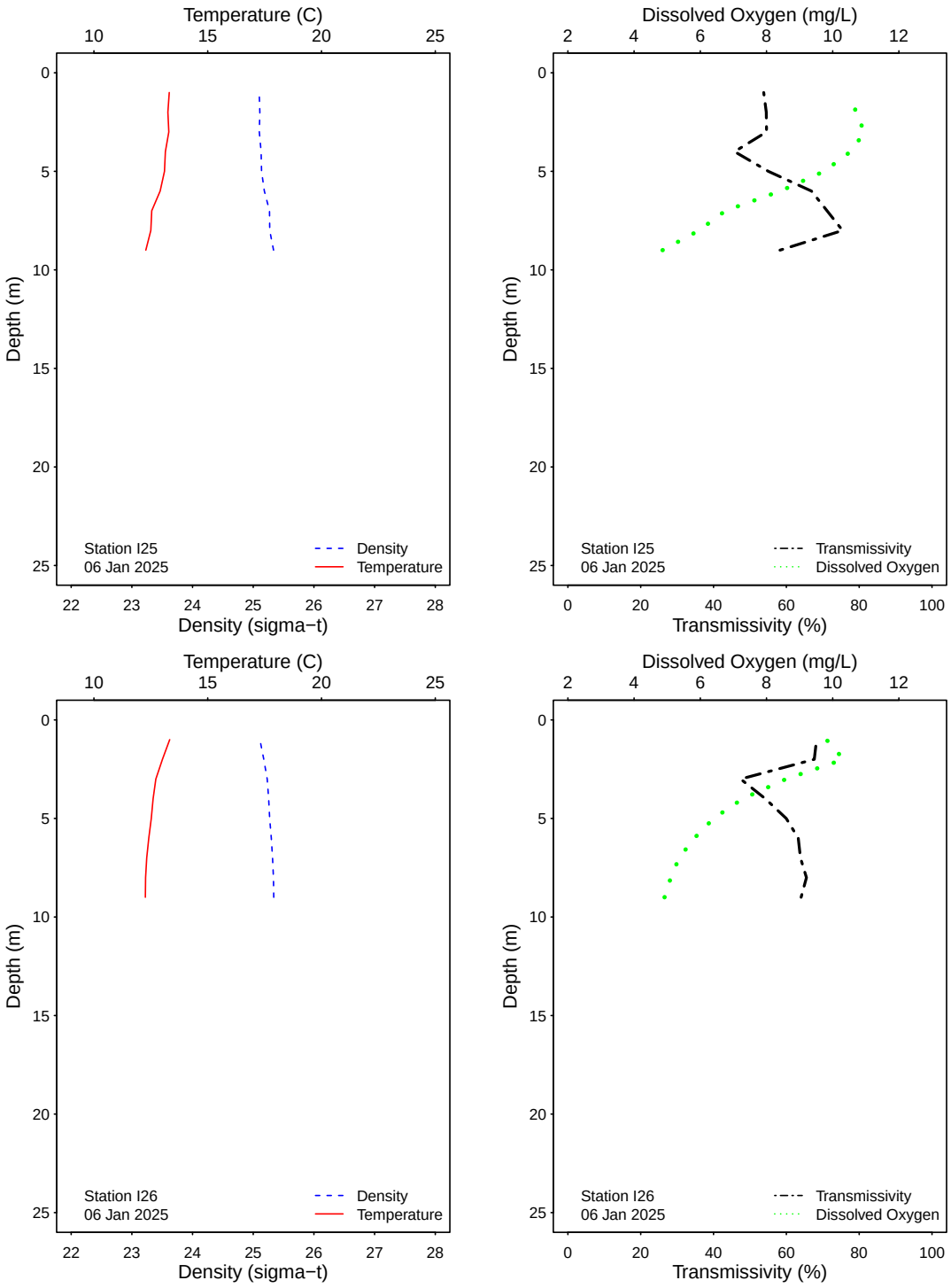

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

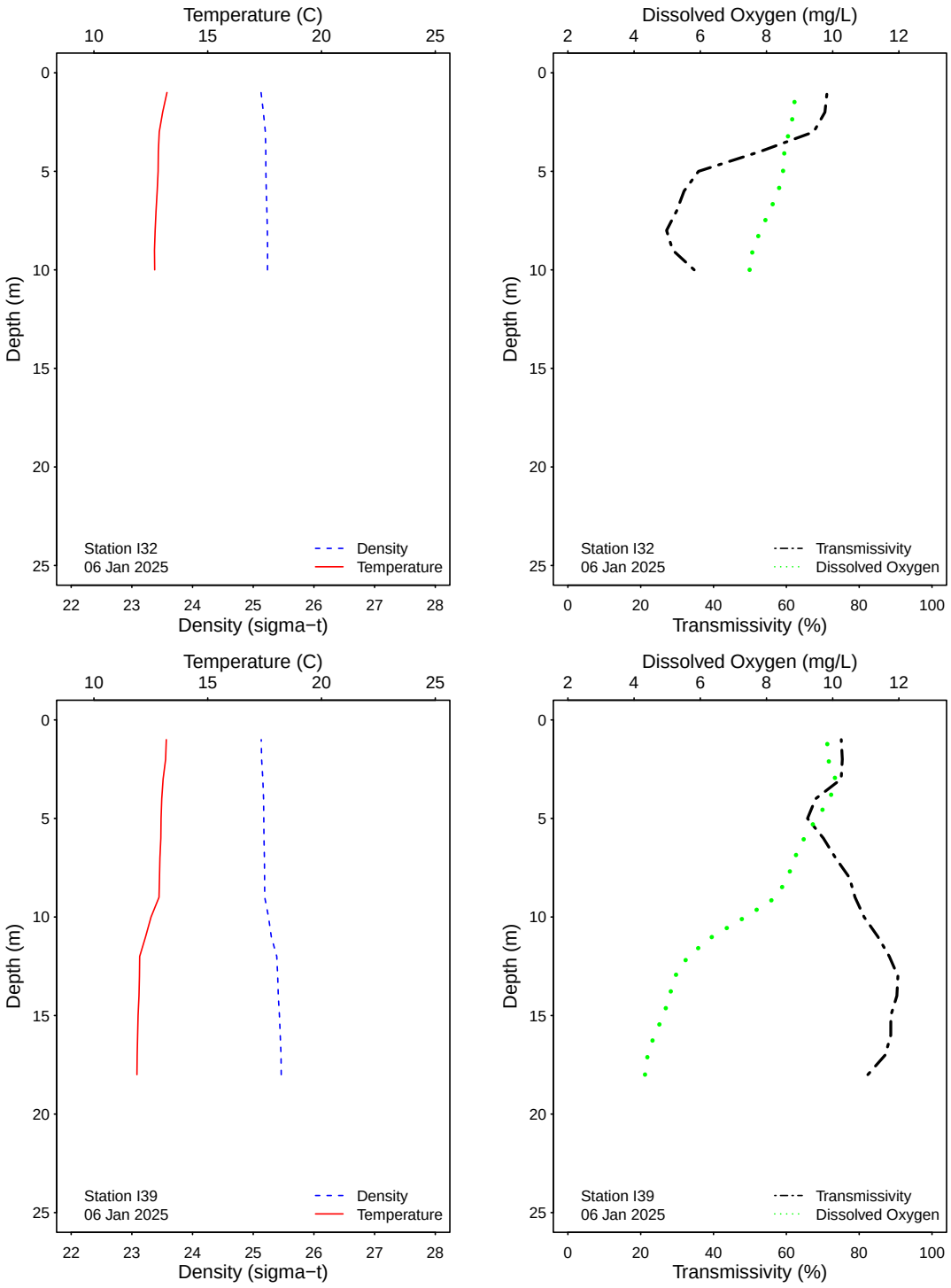

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

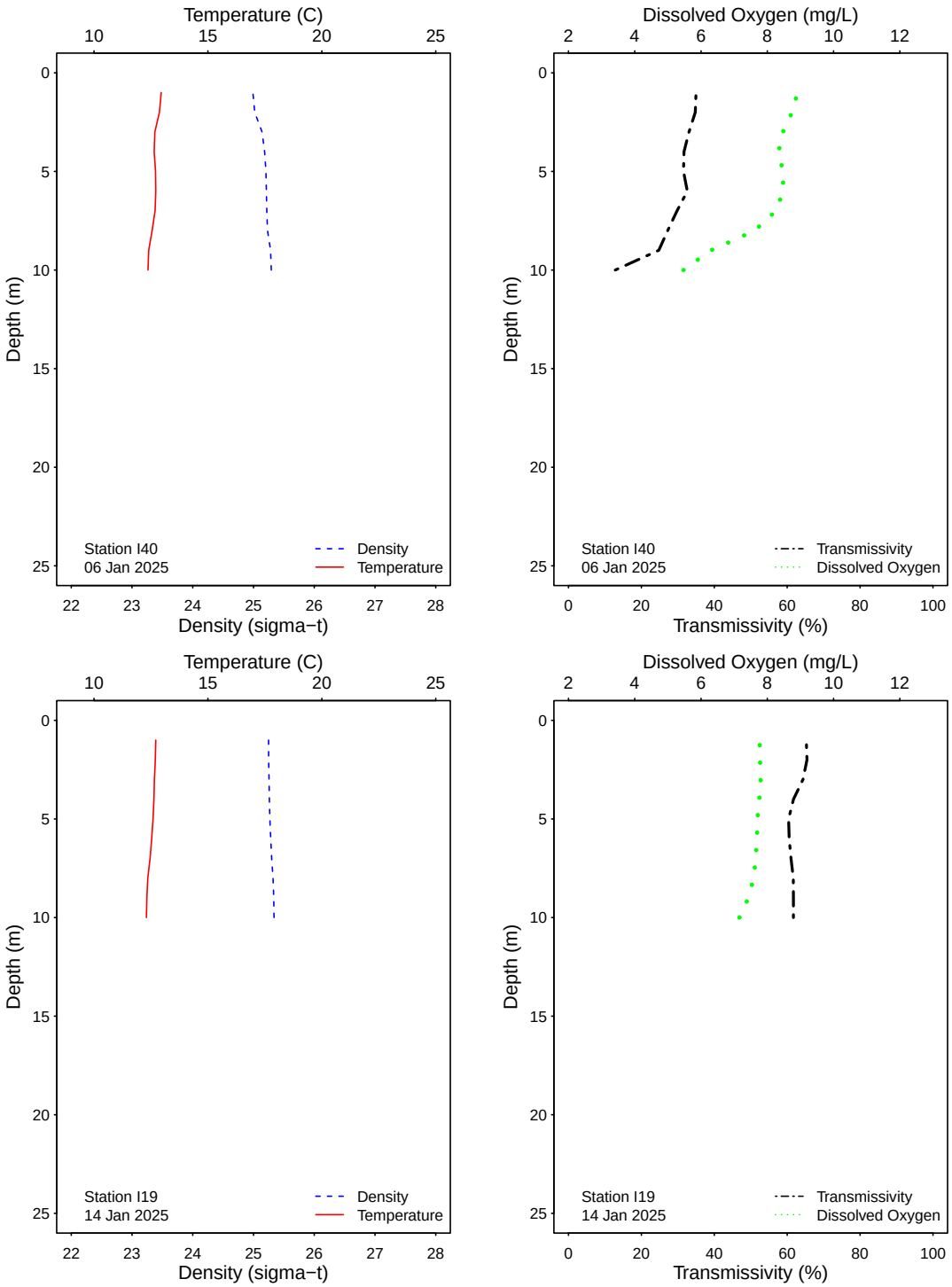

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

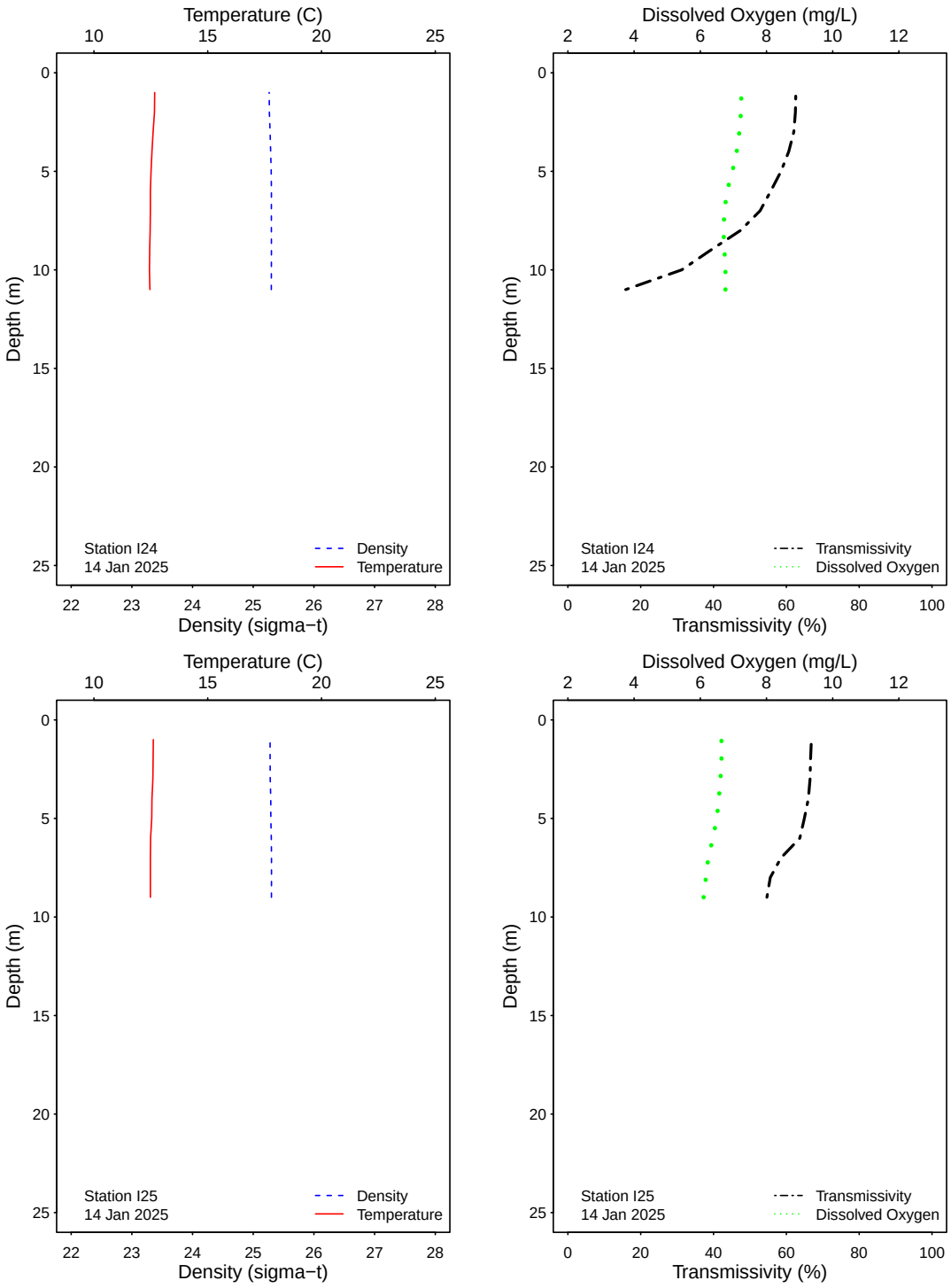

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

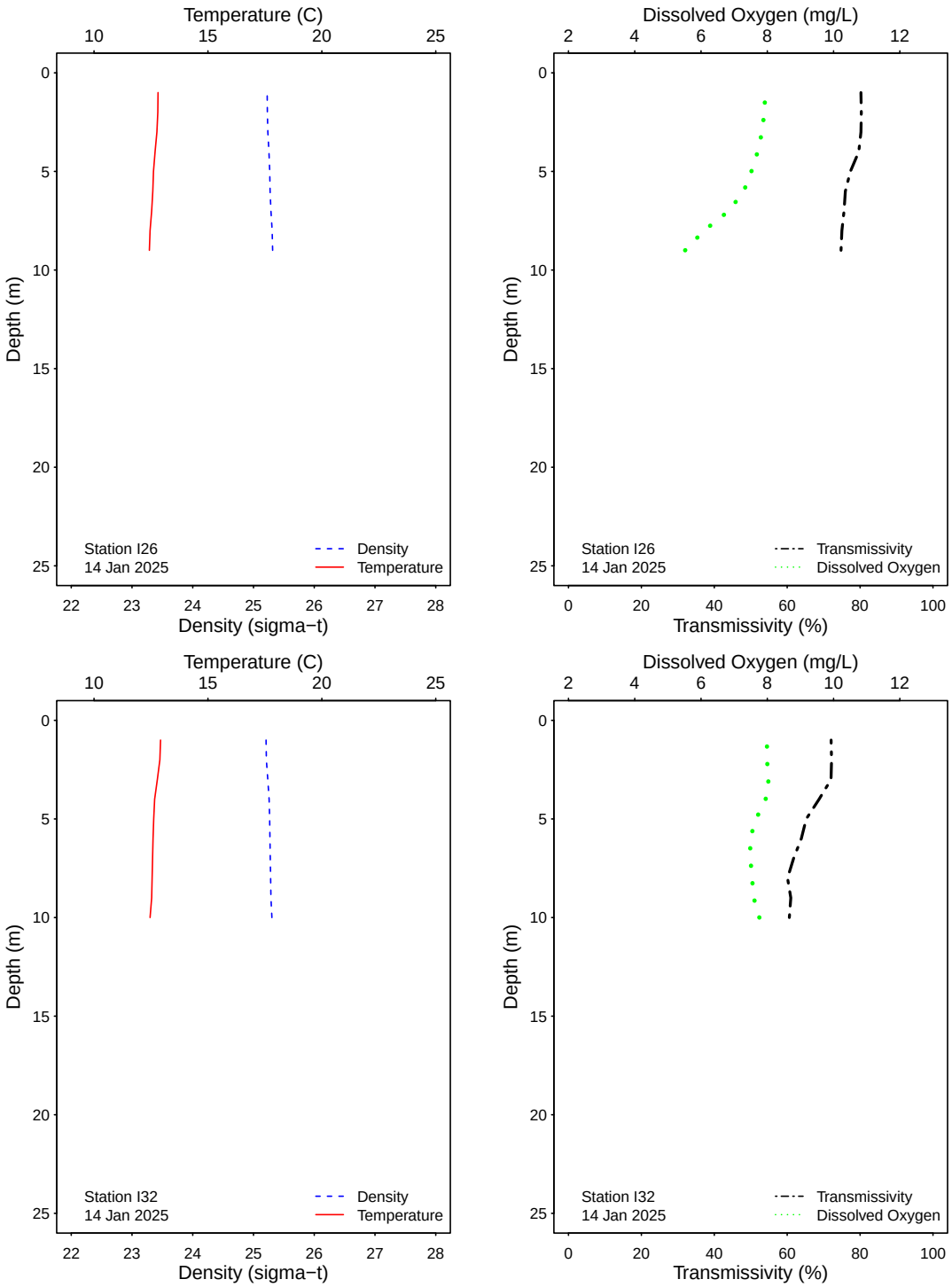

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

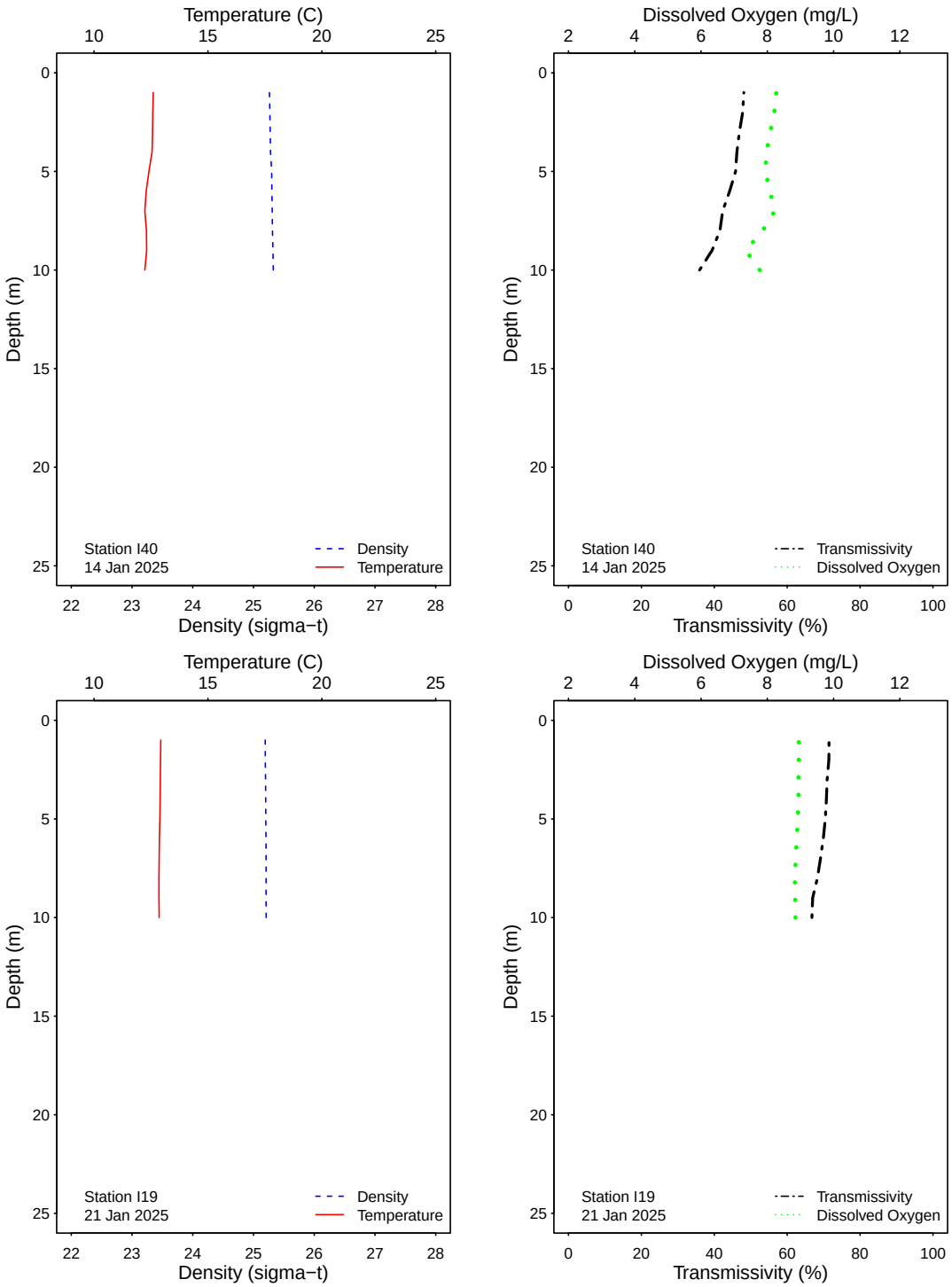

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

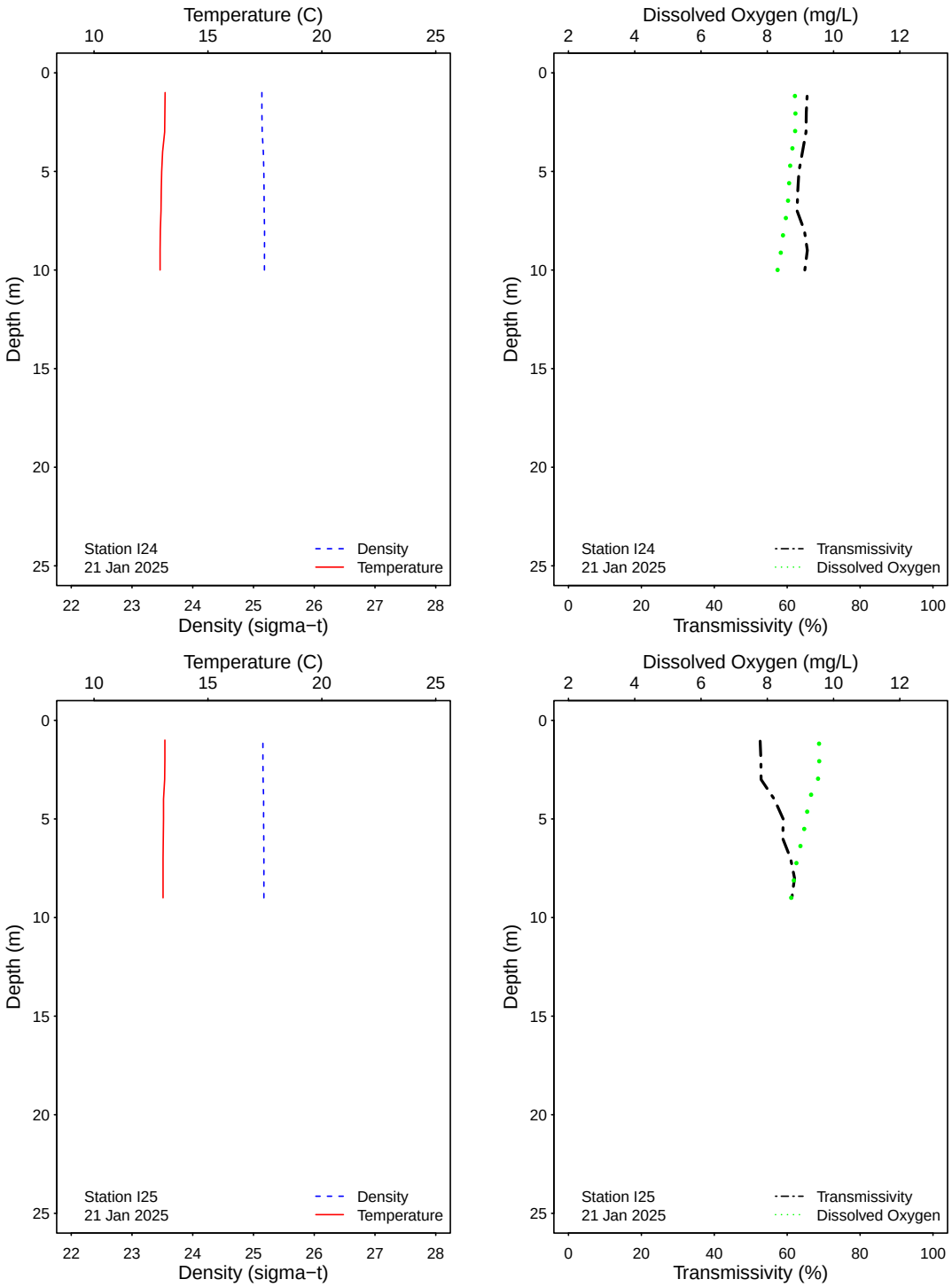

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

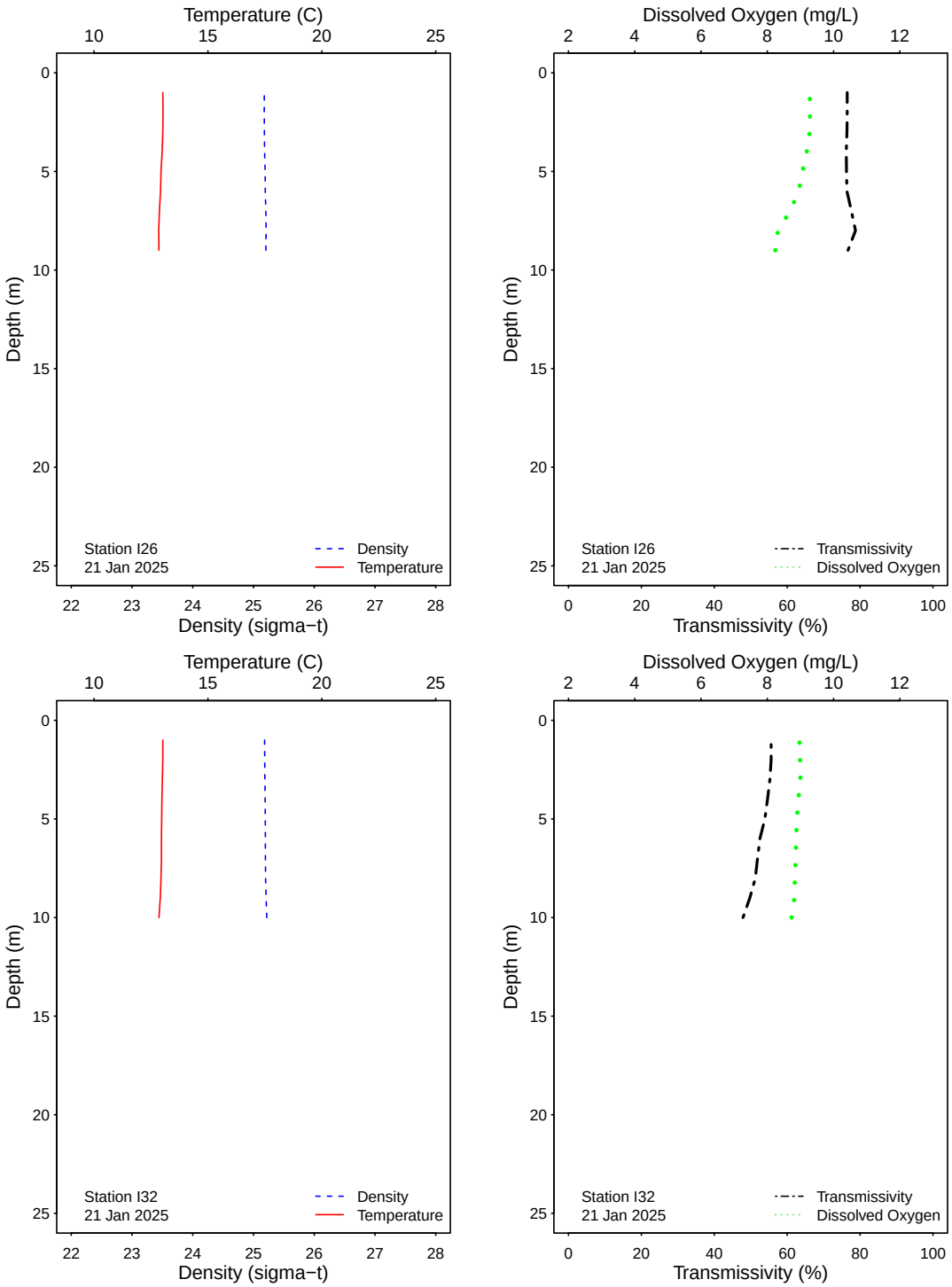

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

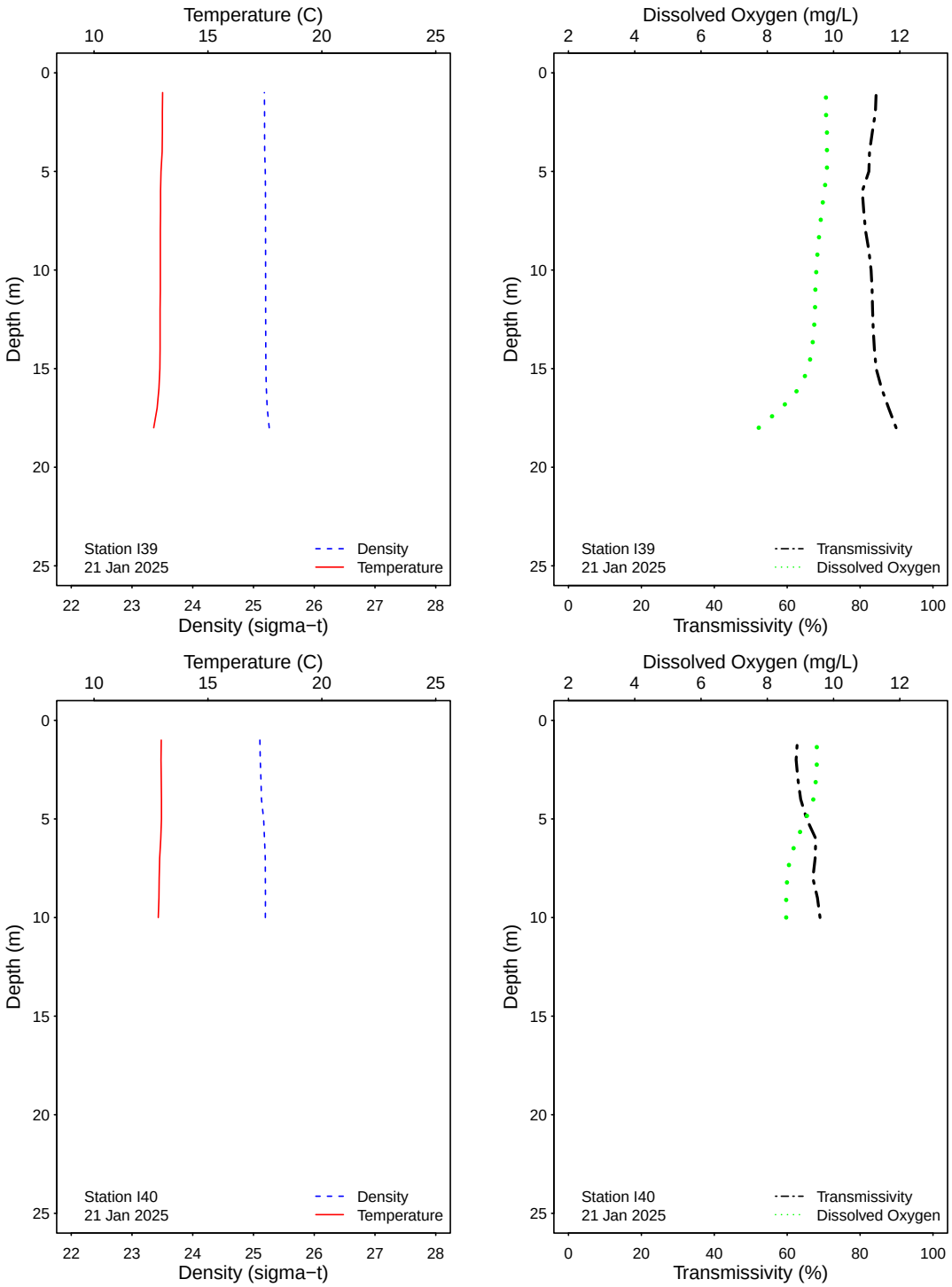

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

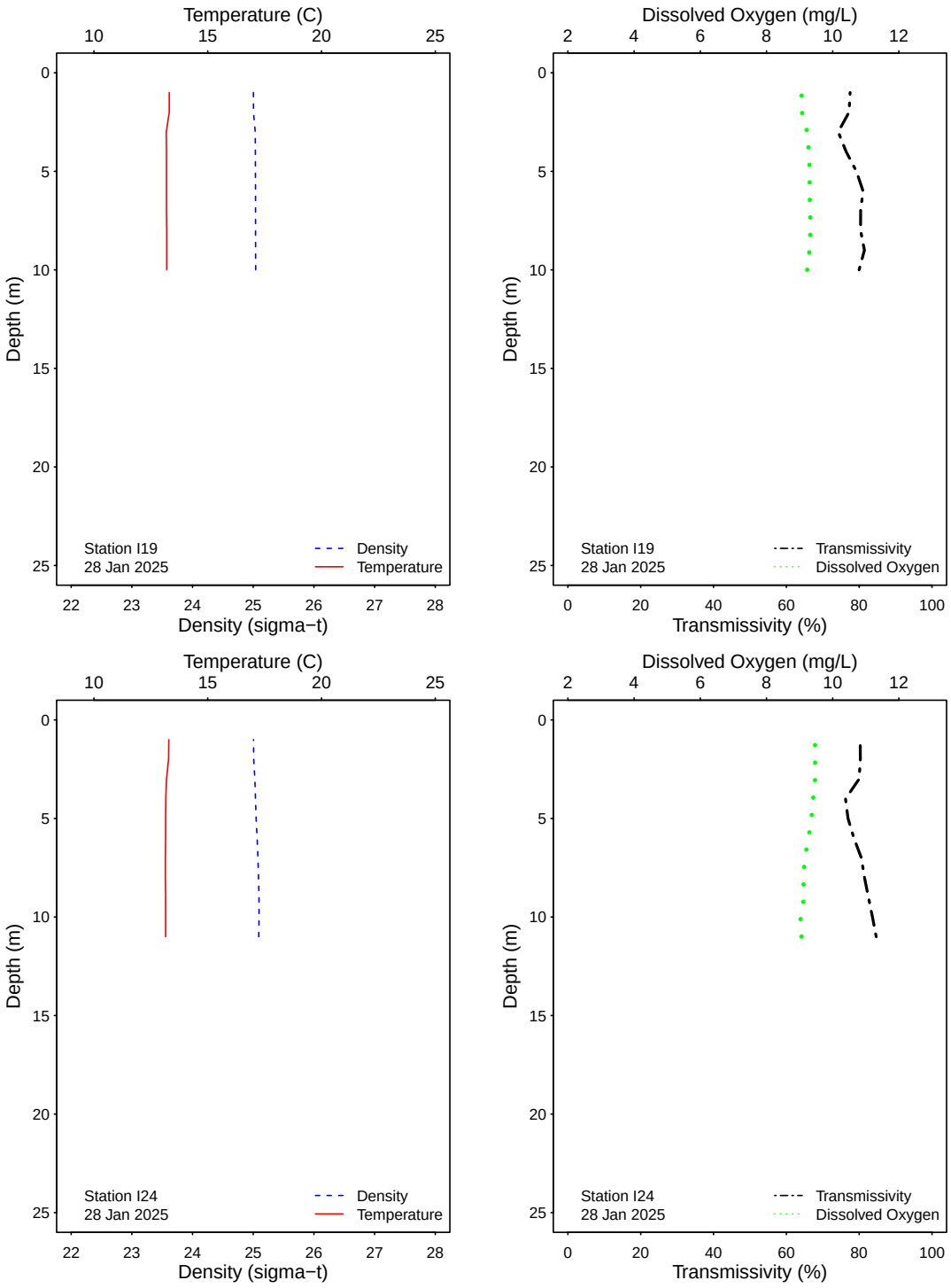

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

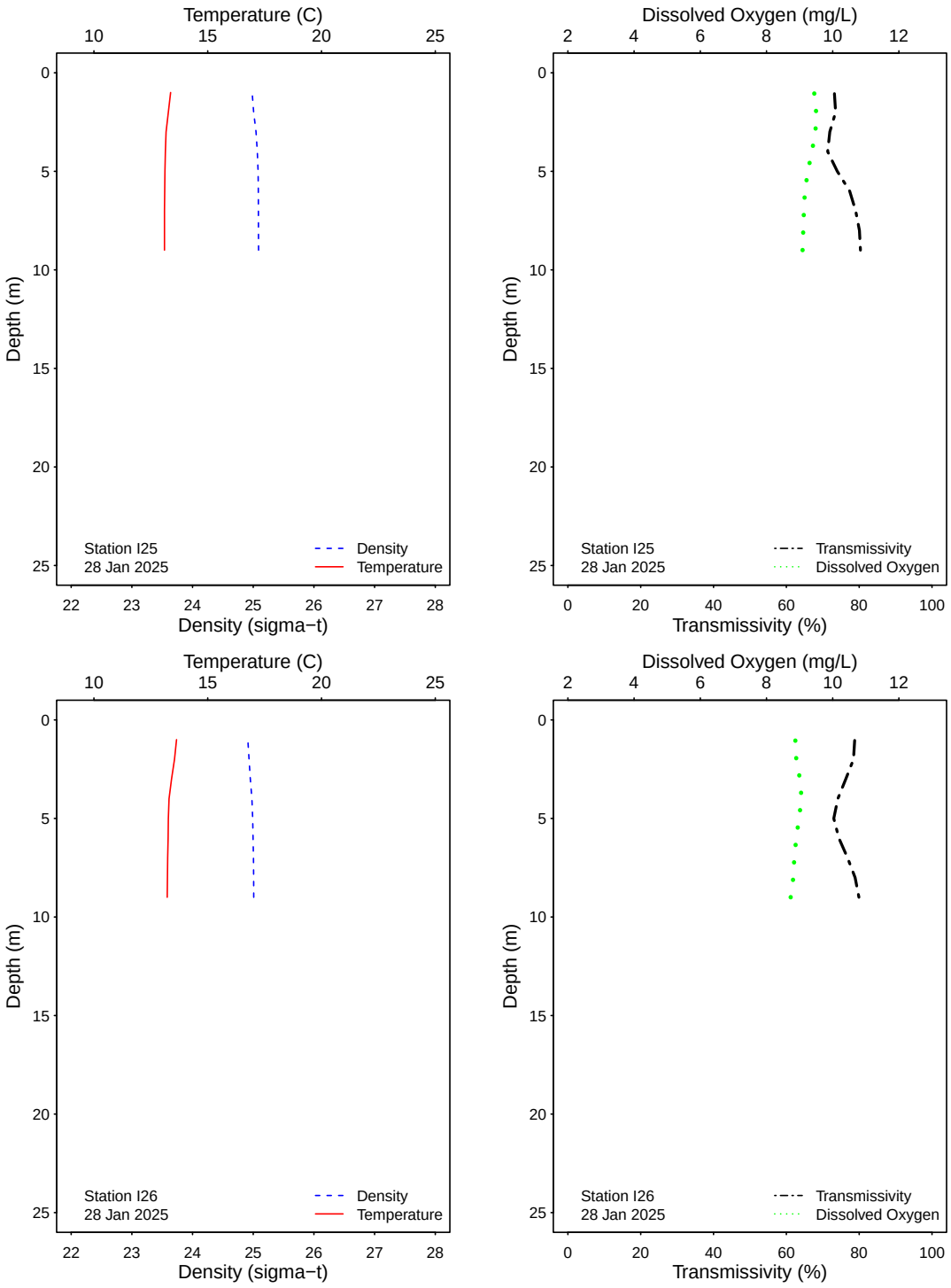

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

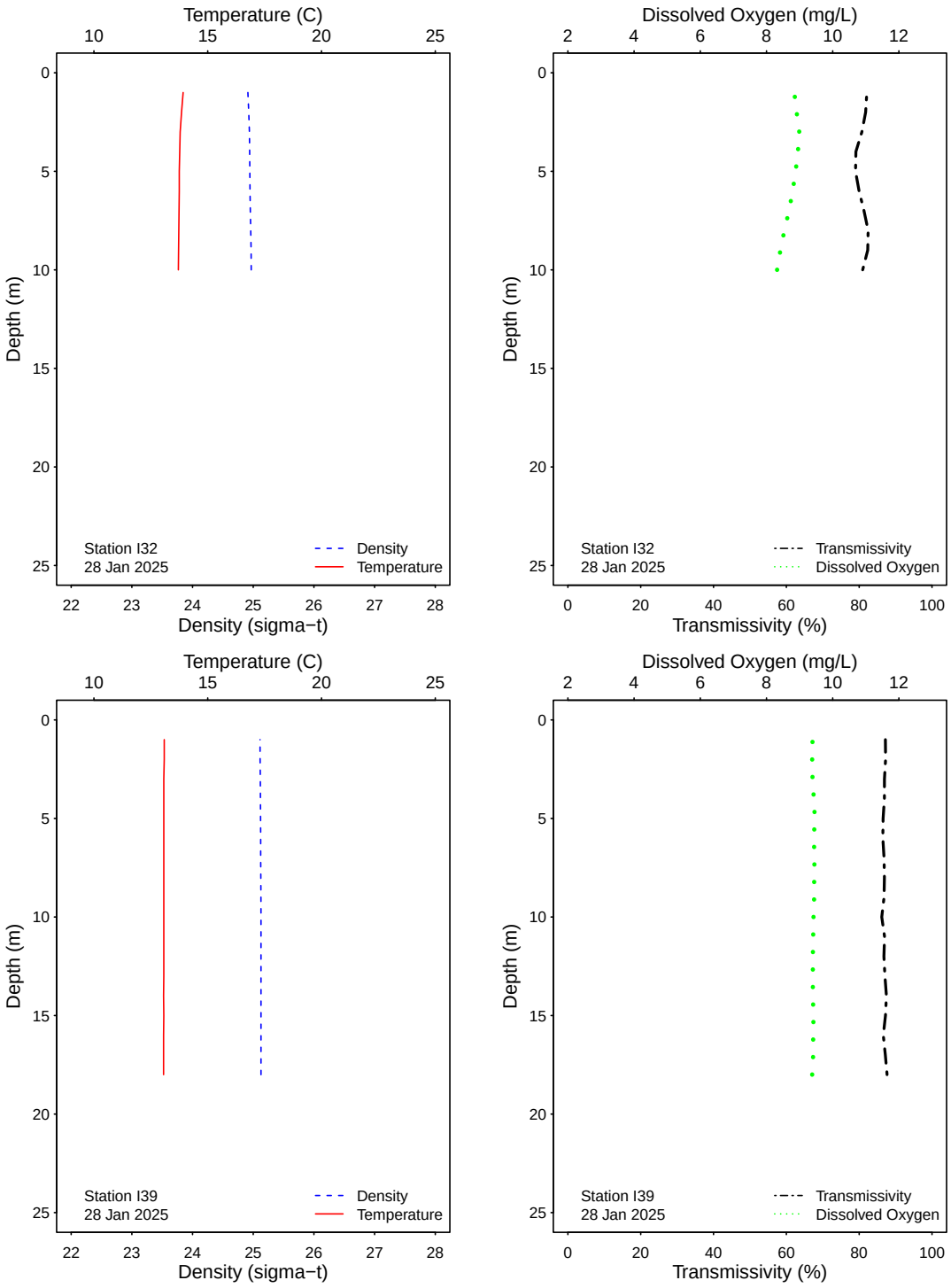

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

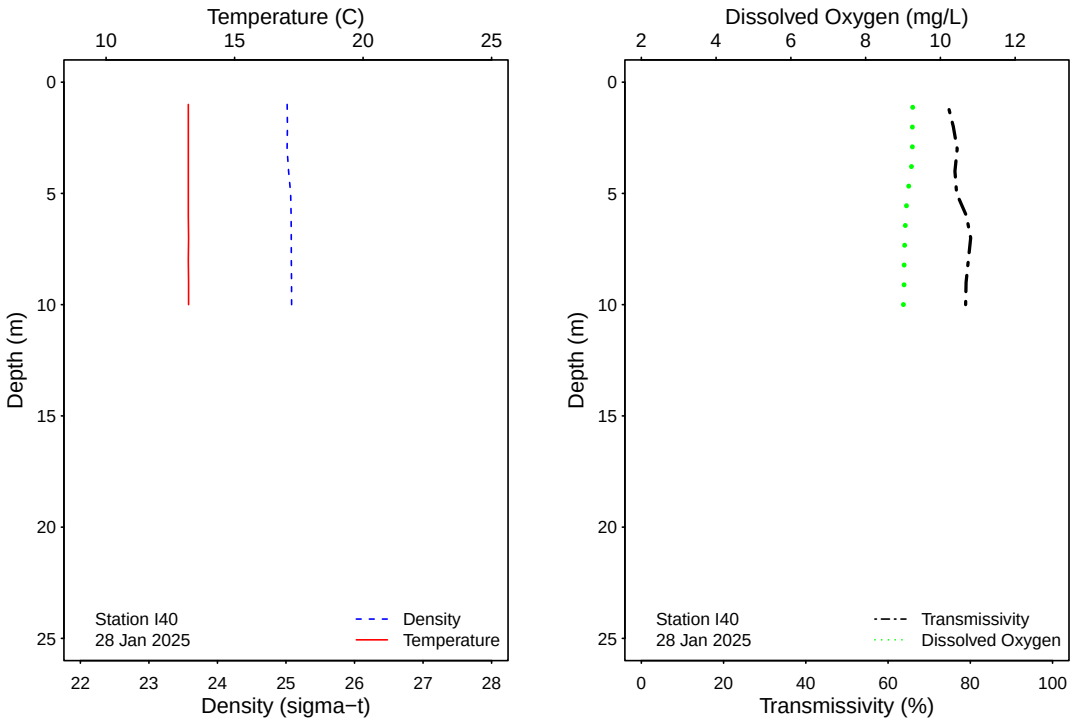

Figure 3.1: Graphics of CTD profile data from the SBOO kelp stations for each sample date.

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APPENDIX A

Quality Assurance

Table A.1

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
I19	06 Jan 2025	6	WT	LAB DUPLICATE	220	88	38
I19	14 Jan 2025	6	ADG	LAB DUPLICATE	240	62	70
I19	21 Jan 2025	6	ADG	LAB DUPLICATE	44	8	16
I19	28 Jan 2025	6	KT	LAB DUPLICATE	2400	110	40
I40	06 Jan 2025	6	WT	LAB DUPLICATE	9400	2000	800
I40	14 Jan 2025	6	ADG	LAB DUPLICATE	7800	2800	420
I40	21 Jan 2025	6	ADG	LAB DUPLICATE	240	40	140
I40	28 Jan 2025	6	KT	LAB DUPLICATE	2600	180	200
S12	07 Jan 2025		WT	LAB DUPLICATE	3200	800	340
S12	07 Jan 2025		WT	FIELD DUPLICATE	2200	700	320
S12	14 Jan 2025		JF	FIELD DUPLICATE	10	4	2
S12	14 Jan 2025		JF	LAB DUPLICATE	4	10	2
S12	21 Jan 2025		KT	FIELD DUPLICATE	2	2	2
S12	21 Jan 2025		KT	LAB DUPLICATE	2	2	2
S12	28 Jan 2025		KA	FIELD DUPLICATE	2400	120	180
S12	28 Jan 2025		KA	LAB DUPLICATE	1400	20	260

ns = not sampled
ND = no data

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