



# **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 2018**

Environmental Monitoring and Technical Services  
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**Public Utilities Department**

Environmental Monitoring & Technical Services Division

November 30, 2018

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

Enclosed is the October 2018 Monthly Receiving Waters Monitoring Report for the South Bay Ocean Outfall, South Bay Water Reclamation Plant as required per Order No. R9-2013-0006 as amended by Order Nos. R9-2014-0071 and R9-2017-0023, NPDES Permit No. CA0109045.

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

TS/amw

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



## INTRODUCTION

Monthly reports of water quality and ocean conditions from Playa Blanco, Mexico to Coronado, USA are submitted to the San Diego Regional Water Quality Control Board and U.S. EPA Region 9 in accordance with Order No. R9-2013-0006 as amended by Order Nos. R9-2014-0071 and R9-2017-0023, NPDES Permit No. CA0109045, for the South Bay Water Reclamation Plant (SBWRP), South Bay Ocean Outfall (SBOO). This report includes receiving waters monitoring data collected from all shore, kelp and offshore stations specified in the above order. Data for influent and effluent monitoring activities for the SBWRP are presented in separate reports.

## MATERIALS AND METHODS

### *Shore Stations*

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

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

### *Kelp Bed Stations*

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

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

Seawater samples at the kelp bed stations are primarily collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of the various physical/chemical parameters were taken using a CTD. The CTD collected these physical/chemical data at a rate  $\geq$  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)<sup>[1]</sup>. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

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

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

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

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

### Single Sample Maximums:

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

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

Quality controls of bacteriological data include laboratory and field duplicate analyses. Laboratory duplicates are performed on approximately 10% of the water quality samples, while field duplicates are performed six times a month (see Appendix A). Laboratory duplicates represent two aliquots of the original sample that are split in the laboratory and analyzed by the same analyst using identical procedures within the same analytical run. The results of these analyses provide a measure of intra-analyst precision. In contrast, field duplicates represent two separate samples collected at the same time from the same site, which are handled under identical circumstances and treated exactly the same throughout field and lab procedures. The results of these analyses provide a measure of precision associated with sample collection, preservation, storage, and lab procedures. The sign test (see Gilbert, 1987) is used to statistically compare both the results from the laboratory duplicates, as well as the results from the field duplicates. These data will be further analyzed in the City's 2018 Quality Assurance Report, which will be completed in March 2019.

## SUMMARY OF RESULTS

### ➤ Shoreline Water Quality Sampling

- Because of site access restrictions in Mexico, the South Bay shoreline sampling is carried out on the same day each week (i.e., Tuesday) in order 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 IBWC 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, two of the eight shore stations located north of the border were out of compliance with various California Ocean Plan (Ocean Plan) water contact standards (see below); these standards do not apply to stations located in Mexican waters.
  - The single sample maximum (SSM) standard for *Enterococcus* bacteria was exceeded at station S4 on October 30.
  - The SSM standard for fecal coliform bacteria was exceeded at station S4 on October 30.
  - The SSM standard that states total coliform densities shall not exceed 1000 CFU/100 mL when the fecal:total ratio exceeds 0.1 was exceeded at stations S4 and S5 on October 30 and October 16, respectively.

- Per permit requirements, resamples were collected in response to these SSM exceedances (see Table 2.8 for details).
- Although the Ocean Plan standards do not apply to these stations, bacteria densities exceeded one or more benchmark levels (i.e., total coliforms >10,000 CFU/100mL; fecal coliforms >400 CFU/100 mL; *Enterococcus* >104 CFU/100 mL; total >1000 CFU/100 mL & F:T ratio >0.1) in seawater samples collected at station S2 on October 23 and 30.
- 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 *South Bay Ocean Outfall Annual Receiving Waters Monitoring and Assessment Report* for details (<http://www.sandiego.gov/mwwd/environment/oceanmonitor/reports/index.shtml>).
- Notable visual observations for October included a sewage-like odor at station S6 on October 16.

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled five times during the month (i.e. October 1, 8, 15, 22, 29).
- During October, each of the seven stations was in compliance with various Ocean Plan water contact standards.
- Water column temperatures ranged from 13.82 to 19.64°C. The difference between surface and bottom waters ranged from 0.51 to 4.17°C, indicating the water column was stratified at some of these sites during the month.
- Chlorophyll *a* concentrations ranged from 0.26 to 6.81 µg/L at the kelp bed stations, suggesting the presence of a phytoplankton bloom during the month.
- Nothing of sewage origin was observed at any of the kelp bed stations.

➤ **Offshore Water Quality Sampling**

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



## TABLES AND FIGURES





**Figure 1.1** Station Map



# Shore Stations



**Table 2.1**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2018	15*	23*	21*	6*	11*	20*	12*	14*
02 Oct 2018	16	30	21	8	13	20	15	15
03 Oct 2018	16	30	21	8	13	20	15	15
04 Oct 2018	21*	25*	21*	11*	20*	36*	16*	19*
05 Oct 2018	21*	25*	21*	11*	20*	36*	16*	19*
06 Oct 2018	21*	25*	21*	11*	20*	36*	16*	19*
07 Oct 2018	21*	25*	21*	11*	20*	36*	16*	19*
08 Oct 2018	21*	25*	21*	11*	20*	36*	16*	19*
09 Oct 2018	24	24	21	13	20	32	17	19
10 Oct 2018	24	24	21	13	20	32	17	19
11 Oct 2018	18*	16*	18*	11*	20*	20*	16*	19*
12 Oct 2018	18*	16*	18*	11*	20*	20*	16*	19*
13 Oct 2018	18*	16*	18*	11*	20*	20*	16*	19*
14 Oct 2018	18*	16*	18*	11*	20*	20*	16*	19*
15 Oct 2018	18*	16*	18*	11*	20*	20*	16*	19*
16 Oct 2018	18	42	22	13	14	14	31	25
17 Oct 2018	18	42	22	13	14	14	31	25
18 Oct 2018	17*	35	23*	12*	13*	13*	35*	34*
19 Oct 2018	17*	35	23*	12*	13*	13*	35*	34*
20 Oct 2018	17*	35	23*	12*	13*	13*	35*	34*
21 Oct 2018	17*	35	23*	12*	13*	13*	35*	34*
22 Oct 2018	17*	35	23*	12*	13*	13*	35*	34*
23 Oct 2018	20	38	26	8	14	23	31	30
24 Oct 2018	20	38	26	8	14	23	31	30
25 Oct 2018	28*	69	31*	12*	13*	24*	53*	28*
26 Oct 2018	28*	69	31*	12*	13*	24*	53*	28*
27 Oct 2018	28*	69	31*	12*	13*	24*	53*	28*
28 Oct 2018	28*	69	31*	12*	13*	24*	53*	28*
29 Oct 2018	28*	69	31*	12*	13*	24*	53*	28*
30 Oct 2018	83	56	29	9	14	23	43	26
31 Oct 2018	65	56	29	9	14	23	43	26

\* Geometric mean calculated using n<5

**Table 2.2**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2018	5*	5*	2*	2*	2*	2*	2*	8*
02 Oct 2018	5	5	2	2	2	2	2	7
03 Oct 2018	5	5	2	2	2	2	2	7
04 Oct 2018	6*	3*	2*	2*	2*	2*	2*	8*
05 Oct 2018	6*	3*	2*	2*	2*	2*	2*	8*
06 Oct 2018	6*	3*	2*	2*	2*	2*	2*	8*
07 Oct 2018	6*	3*	2*	2*	2*	2*	2*	8*
08 Oct 2018	6*	3*	2*	2*	2*	2*	2*	8*
09 Oct 2018	6	3	2	2	2	2	2	6
10 Oct 2018	6	3	2	2	2	2	2	6
11 Oct 2018	5*	2*	2*	2*	2*	2*	2*	4*
12 Oct 2018	5*	2*	2*	2*	2*	2*	2*	4*
13 Oct 2018	5*	2*	2*	2*	2*	2*	2*	4*
14 Oct 2018	5*	2*	2*	2*	2*	2*	2*	4*
15 Oct 2018	5*	2*	2*	2*	2*	2*	2*	4*
16 Oct 2018	4	7	4	2	2	2	4	5
17 Oct 2018	4	7	4	2	2	2	4	5
18 Oct 2018	3*	7	4*	2*	2*	2*	5*	7*
19 Oct 2018	3*	7	4*	2*	2*	2*	5*	7*
20 Oct 2018	3*	7	4*	2*	2*	2*	5*	7*
21 Oct 2018	3*	7	4*	2*	2*	2*	5*	7*
22 Oct 2018	3*	7	4*	2*	2*	2*	5*	7*
23 Oct 2018	3	5	4	2	2	2	4	9
24 Oct 2018	3	5	4	2	2	2	4	9
25 Oct 2018	4*	7	4*	2*	2*	2*	5*	8*
26 Oct 2018	4*	7	4*	2*	2*	2*	5*	8*
27 Oct 2018	4*	7	4*	2*	2*	2*	5*	8*
28 Oct 2018	4*	7	4*	2*	2*	2*	5*	8*
29 Oct 2018	4*	7	4*	2*	2*	2*	5*	8*
30 Oct 2018	12	5	4	2	2	2	4	9
31 Oct 2018	9	5	4	2	2	2	4	9

\* Geometric mean calculated using n<5

**Table 2.3**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Oct 2018	5	4*	2*	2*	2*	5*	3*	2*
02 Oct 2018	5	4	2	2	2	4	4	3
03 Oct 2018	5	4	2	2	2	4	4	3
04 Oct 2018	6	4*	2*	2*	2*	5*	4*	3*
05 Oct 2018	6	4*	2*	2*	2*	5*	4*	3*
06 Oct 2018	6	4*	2*	2*	2*	5*	4*	3*
07 Oct 2018	6	4*	2*	2*	2*	5*	4*	3*
08 Oct 2018	6	4*	2*	2*	2*	5*	4*	3*
09 Oct 2018	7	4	2	2	2	4	4	2
10 Oct 2018	7	4	2	2	2	4	4	2
11 Oct 2018	4	2*	2*	2*	2*	2*	3*	3*
12 Oct 2018	4	2*	2*	2*	2*	2*	3*	3*
13 Oct 2018	5*	2*	2*	2*	2*	2*	3*	3*
14 Oct 2018	5*	2*	2*	2*	2*	2*	3*	3*
15 Oct 2018	5*	2*	2*	2*	2*	2*	3*	3*
16 Oct 2018	4	3	2	2	2	2	3	3
17 Oct 2018	4	3	2	2	2	2	3	3
18 Oct 2018	5*	3	2*	2*	2*	2*	4*	3*
19 Oct 2018	5*	3	2*	2*	2*	2*	4*	3*
20 Oct 2018	5*	3	2*	2*	2*	2*	4*	3*
21 Oct 2018	5*	3	2*	2*	2*	2*	4*	3*
22 Oct 2018	5*	3	2*	2*	2*	2*	4*	3*
23 Oct 2018	7	4	3	2	2	3	4	4
24 Oct 2018	7	4	3	2	2	3	4	4
25 Oct 2018	9*	5	3*	2*	2*	4*	5*	4*
26 Oct 2018	9*	5	3*	2*	2*	4*	5*	4*
27 Oct 2018	9*	5	3*	2*	2*	4*	5*	4*
28 Oct 2018	9*	5	3*	2*	2*	4*	5*	4*
29 Oct 2018	9*	5	3*	2*	2*	4*	5*	4*
30 Oct 2018	23	5	3	2	2	4	4	4
31 Oct 2018	15	5	3	2	2	4	4	4

\* Geometric mean calculated using n<5

**Table 2.4**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
02 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
09 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
16 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
18 Oct 2018	ns	IC	ns	ns	ns	ns	ns	ns
23 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
30 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
31 Oct 2018	IC	ns	ns	ns	ns	ns	ns	ns

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.5**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
02 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
09 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
16 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
18 Oct 2018	ns	IC	ns	ns	ns	ns	ns	ns
23 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
30 Oct 2018	E	IC	IC	IC	IC	IC	IC	IC
31 Oct 2018	IC	ns	ns	ns	ns	ns	ns	ns

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.6**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
02 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
09 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
16 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
18 Oct 2018	ns	ns	ns	ns	ns	ns	ns	ns
23 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
30 Oct 2018	E	IC	IC	IC	IC	IC	IC	IC
31 Oct 2018	IC	ns	ns	ns	ns	ns	ns	ns

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.7**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
02 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
09 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
16 Oct 2018	IC	E	IC	IC	IC	IC	IC	IC
18 Oct 2018	ns	IC	ns	ns	ns	ns	ns	ns
23 Oct 2018	IC	IC	IC	IC	IC	IC	IC	IC
30 Oct 2018	E	IC	IC	IC	IC	IC	IC	IC
31 Oct 2018	IC	ns	ns	ns	ns	ns	ns	ns

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 2.8**

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

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
S0	02 Oct 2018	1045	40e	2e	18e	0.05
S0	09 Oct 2018	1120	80e	4e	6e	0.05
S0	10 Oct 2018	1120	ns	ns	ns	ns
S0	16 Oct 2018	1200	<2	<2	<2	1.00
S0	23 Oct 2018	1030	160e	12e	20e	0.07
S0	30 Oct 2018	1055	220e	30e	22e	0.14
S2	02 Oct 2018	1010	20e	4e	8e	0.20
S2	09 Oct 2018	1250	<2	<2	<2	1.00
S2	10 Oct 2018	1250	ns	ns	ns	ns
S2	16 Oct 2018	1055	2e	<2	<2	1.00
S2	23 Oct 2018	1150	1000e	24e	140e	0.02
S2	30 Oct 2018	1150	6600	100e	600	0.02
S3	02 Oct 2018	935	100e	2e	72	0.02
S3	09 Oct 2018	1215	<20	<2	<2	0.10
S3	10 Oct 2018	1215	ns	ns	ns	ns
S3	16 Oct 2018	1020	2e	<2	<2	1.00
S3	23 Oct 2018	1115	80e	8e	22e	0.10
S3	30 Oct 2018	1225	9800	120e	960	0.01
S4	02 Oct 2018	1125	<20	4e	10e	0.20
S4	09 Oct 2018	851	40e	8e	14e	0.20
S4	16 Oct 2018	837	18e	2e	<2	0.11
S4	23 Oct 2018	1105	40e	4e	24e	0.10
S4	30 Oct 2018	907	6800	840	940	0.12
S4	31 Oct 2018	1140	20e	<2	2e	0.10
S5	02 Oct 2018	931	80e	4e	2e	0.05
S5	09 Oct 2018	959	<20	<2	<2	0.10
S5	16 Oct 2018	859	2000e	400	14e	0.20
S5	18 Oct 2018	848	8e	2e	NRNA	0.25
S5	23 Oct 2018	852	60e	2e	8e	0.03
S5	30 Oct 2018	1020	20e	<2	6e	0.10
S6	02 Oct 2018	948	<20	<2	2e	0.10
S6	09 Oct 2018	1014	<20	<2	<2	0.10
S6	16 Oct 2018	924	60e	36e	<2	0.60
S6	23 Oct 2018	931	40e	<2	8e	0.05
S6	30 Oct 2018	1044	<20	<2	<2	0.10
S8	02 Oct 2018	846	<20	<2	<2	0.10
S8	09 Oct 2018	1147	<20	<2	2e	0.10
S8	16 Oct 2018	734	22e	2e	<2	0.09
S8	23 Oct 2018	733	<2	<2	<2	1.00
S8	30 Oct 2018	1213	4e	<2	6e	0.50
S9	02 Oct 2018	818	<20	<2	<2	0.10
S9	09 Oct 2018	1223	<20	<2	<2	0.10

<b>Station</b>	<b>Date</b>	<b>Time</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>	<b>F:T</b>
S9	16 Oct 2018	711	4e	2e	2e	0.50
S9	23 Oct 2018	714	<20	4e	<2	0.20
S9	30 Oct 2018	1240	<20	<2	<2	0.10
S10	02 Oct 2018	1117	<20	<2	2e	0.10
S10	09 Oct 2018	846	20e	2e	<2	0.10
S10	16 Oct 2018	855	4e	2e	2e	0.50
S10	23 Oct 2018	1035	<200	2e	26e	0.01
S10	30 Oct 2018	900	20e	<2	8e	0.10
S11	02 Oct 2018	938	40e	<2	14e	0.05
S11	09 Oct 2018	1006	<20	<2	<2	0.10
S11	16 Oct 2018	911	480	76	4e	0.16
S11	23 Oct 2018	909	<20	2e	6e	0.10
S11	30 Oct 2018	1025	<20	<2	<2	0.10
S12	02 Oct 2018	958	<20	4e	6e	0.20
S12	09 Oct 2018	1023	<20	2e	<2	0.10
S12	16 Oct 2018	951	80e	14e	4e	0.17
S12	23 Oct 2018	756	20e	30e	8e	1.50
S12	30 Oct 2018	1052	<20	<20	<2	1.00

ns = not sampled

ND = no data

**Comments**

Station	Date	Depth	Parameter	Comments
S5	18 Oct 2018			Resample
S4	31 Oct 2018			Resample

**Table 2.9**

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

Station	Date	Parameter	Value
S0	02 Oct 2018	Arrive Time	1045
S0	02 Oct 2018	Weather	Cloudy
S0	02 Oct 2018	Wind Speed (kts)	0.7
S0	02 Oct 2018	Wind Dir	SW
S0	02 Oct 2018	Animal Life	15 Birds
S0	02 Oct 2018	Floatables	None
S0	02 Oct 2018	Water Color	Green
S0	02 Oct 2018	Current Direction	N
S0	02 Oct 2018	Water Temp (C)	15
S0	02 Oct 2018	Wave Height Low (ft)	2
S0	02 Oct 2018	High Tide (ft)	4.9
S0	02 Oct 2018	High Tide Time	1527
S0	02 Oct 2018	Low Tide (ft)	2.9
S0	02 Oct 2018	Low Tide Time	915
S0	02 Oct 2018	Comments	Water clear; No flow from storm drain
S0	09 Oct 2018	Arrive Time	1120
S0	09 Oct 2018	Weather	Sunny
S0	09 Oct 2018	Wind Speed (kts)	4.3
S0	09 Oct 2018	Wind Dir	NW
S0	09 Oct 2018	Animal Life	20 Seagulls
S0	09 Oct 2018	Floatables	None
S0	09 Oct 2018	Water Color	Green
S0	09 Oct 2018	Current Direction	N
S0	09 Oct 2018	Water Temp (C)	18
S0	09 Oct 2018	Wave Height Low (ft)	2
S0	09 Oct 2018	High Tide (ft)	6
S0	09 Oct 2018	High Tide Time	942
S0	09 Oct 2018	Low Tide (ft)	-0.1
S0	09 Oct 2018	Low Tide Time	1608
S0	09 Oct 2018	Comments	Kelp; Algae; Water turbid; 7.0 L/s water flowing from storm drain
S0	10 Oct 2018	Arrive Time	1120
S0	10 Oct 2018	Weather	Sunny
S0	10 Oct 2018	Wind Speed (kts)	4.3
S0	10 Oct 2018	Wind Dir	NW
S0	10 Oct 2018	Animal Life	20 Seagulls
S0	10 Oct 2018	Floatables	None
S0	10 Oct 2018	Water Color	Green
S0	10 Oct 2018	Current Direction	N
S0	10 Oct 2018	Water Temp (C)	18
S0	10 Oct 2018	Wave Height Low (ft)	2
S0	10 Oct 2018	High Tide (ft)	6
S0	10 Oct 2018	High Tide Time	1015
S0	10 Oct 2018	Low Tide (ft)	-0.1
S0	10 Oct 2018	Low Tide Time	1652
S0	10 Oct 2018	Comments	Kelp; Algae; Water turbid
S0	16 Oct 2018	Arrive Time	1200
S0	16 Oct 2018	Weather	Sunny
S0	16 Oct 2018	Wind Speed (kts)	0.6

Station	Date	Parameter	Value
S0	16 Oct 2018	Wind Dir	SW
S0	16 Oct 2018	Animal Life	5 Birds; 5 Dogs
S0	16 Oct 2018	Floatables	None
S0	16 Oct 2018	Water Color	Green
S0	16 Oct 2018	Current Direction	N
S0	16 Oct 2018	Water Temp (C)	15
S0	16 Oct 2018	Wave Height Low (ft)	2
S0	16 Oct 2018	High Tide (ft)	4.1
S0	16 Oct 2018	High Tide Time	1520
S0	16 Oct 2018	Low Tide (ft)	3.3
S0	16 Oct 2018	Low Tide Time	946
S0	16 Oct 2018	Comments	5 Persons; Water clear; Red algae; 0.5 L/s water flowing from storm drain
S0	23 Oct 2018	Arrive Time	1030
S0	23 Oct 2018	Weather	Sunny
S0	23 Oct 2018	Wind Speed (kts)	3.1
S0	23 Oct 2018	Wind Dir	NE
S0	23 Oct 2018	Animal Life	None
S0	23 Oct 2018	Floatables	None
S0	23 Oct 2018	Water Color	Green
S0	23 Oct 2018	Current Direction	N
S0	23 Oct 2018	Water Temp (C)	16
S0	23 Oct 2018	Wave Height Low (ft)	3
S0	23 Oct 2018	High Tide (ft)	5.6
S0	23 Oct 2018	High Tide Time	847
S0	23 Oct 2018	Low Tide (ft)	0.3
S0	23 Oct 2018	Low Tide Time	1513
S0	23 Oct 2018	Comments	Kelp; Algae; Water clear; 0.5 L/s water flowing from storm drain
S0	30 Oct 2018	Arrive Time	1055
S0	30 Oct 2018	Weather	Cloudy
S0	30 Oct 2018	Wind Speed (kts)	0.9
S0	30 Oct 2018	Wind Dir	SW
S0	30 Oct 2018	Animal Life	5 Shorebirds
S0	30 Oct 2018	Floatables	None
S0	30 Oct 2018	Water Color	Green
S0	30 Oct 2018	Current Direction	N
S0	30 Oct 2018	Water Temp (C)	14
S0	30 Oct 2018	Wave Height Low (ft)	2
S0	30 Oct 2018	High Tide (ft)	5
S0	30 Oct 2018	High Tide Time	1333
S0	30 Oct 2018	Low Tide (ft)	2.9
S0	30 Oct 2018	Low Tide Time	722
S0	30 Oct 2018	Comments	Kelp; Algae; 5 Persons; Water clear; 0.5 L/s water flowing from storm drain
S2	02 Oct 2018	Arrive Time	1010
S2	02 Oct 2018	Weather	Cloudy
S2	02 Oct 2018	Wind Speed (kts)	1.4
S2	02 Oct 2018	Wind Dir	SW
S2	02 Oct 2018	Animal Life	5 Birds
S2	02 Oct 2018	Floatables	None
S2	02 Oct 2018	Water Color	Green
S2	02 Oct 2018	Current Direction	N

Station	Date	Parameter	Value
S2	02 Oct 2018	Water Temp (C)	15
S2	02 Oct 2018	Wave Height Low (ft)	2
S2	02 Oct 2018	High Tide (ft)	3.4
S2	02 Oct 2018	High Tide Time	501
S2	02 Oct 2018	Low Tide (ft)	2.9
S2	02 Oct 2018	Low Tide Time	915
S2	02 Oct 2018	Comments	Water clear; No flow from storm drain
S2	09 Oct 2018	Arrive Time	1250
S2	09 Oct 2018	Weather	Sunny
S2	09 Oct 2018	Wind Speed (kts)	4
S2	09 Oct 2018	Wind Dir	NW
S2	09 Oct 2018	Animal Life	3 Dogs; 5 Seagulls
S2	09 Oct 2018	Floatables	None
S2	09 Oct 2018	Water Color	Green
S2	09 Oct 2018	Current Direction	N
S2	09 Oct 2018	Water Temp (C)	19
S2	09 Oct 2018	Wave Height Low (ft)	2
S2	09 Oct 2018	High Tide (ft)	6
S2	09 Oct 2018	High Tide Time	942
S2	09 Oct 2018	Low Tide (ft)	-0.1
S2	09 Oct 2018	Low Tide Time	1608
S2	09 Oct 2018	Comments	Kelp; Algae; Water turbid; No flow from storm drain
S2	10 Oct 2018	Arrive Time	1250
S2	10 Oct 2018	Weather	Sunny
S2	10 Oct 2018	Wind Speed (kts)	4
S2	10 Oct 2018	Wind Dir	NW
S2	10 Oct 2018	Animal Life	3 Dogs; 5 Seagulls
S2	10 Oct 2018	Floatables	None
S2	10 Oct 2018	Water Color	Green
S2	10 Oct 2018	Current Direction	N
S2	10 Oct 2018	Water Temp (C)	19
S2	10 Oct 2018	Wave Height Low (ft)	2
S2	10 Oct 2018	High Tide (ft)	6
S2	10 Oct 2018	High Tide Time	1015
S2	10 Oct 2018	Low Tide (ft)	-0.1
S2	10 Oct 2018	Low Tide Time	1652
S2	10 Oct 2018	Comments	Kelp; Algae; Water turbid
S2	16 Oct 2018	Arrive Time	1055
S2	16 Oct 2018	Weather	Sunny
S2	16 Oct 2018	Wind Speed (kts)	0.9
S2	16 Oct 2018	Wind Dir	SW
S2	16 Oct 2018	Animal Life	15 Birds; 5 Dolphins
S2	16 Oct 2018	Floatables	None
S2	16 Oct 2018	Water Color	Green
S2	16 Oct 2018	Current Direction	N
S2	16 Oct 2018	Water Temp (C)	15
S2	16 Oct 2018	Wave Height Low (ft)	2
S2	16 Oct 2018	High Tide (ft)	4.1
S2	16 Oct 2018	High Tide Time	1520
S2	16 Oct 2018	Low Tide (ft)	3.3
S2	16 Oct 2018	Low Tide Time	946
S2	16 Oct 2018	Comments	Kelp; Algae; 5 Persons; Water clear; No flow from storm drain

Station	Date	Parameter	Value
S2	23 Oct 2018	Arrive Time	1150
S2	23 Oct 2018	Weather	Sunny
S2	23 Oct 2018	Wind Speed (kts)	3.4
S2	23 Oct 2018	Wind Dir	NE
S2	23 Oct 2018	Animal Life	10 Shorebirds; 1 Dog
S2	23 Oct 2018	Floatables	None
S2	23 Oct 2018	Water Color	Green
S2	23 Oct 2018	Current Direction	N
S2	23 Oct 2018	Water Temp (C)	16
S2	23 Oct 2018	Wave Height Low (ft)	3
S2	23 Oct 2018	High Tide (ft)	5.6
S2	23 Oct 2018	High Tide Time	847
S2	23 Oct 2018	Low Tide (ft)	0.3
S2	23 Oct 2018	Low Tide Time	1513
S2	23 Oct 2018	Comments	Kelp; Algae; 5 Persons; Water clear; No flow from storm drain
S2	30 Oct 2018	Arrive Time	1150
S2	30 Oct 2018	Weather	Cloudy
S2	30 Oct 2018	Wind Speed (kts)	0.7
S2	30 Oct 2018	Wind Dir	SW
S2	30 Oct 2018	Animal Life	5 Shorebirds
S2	30 Oct 2018	Floatables	None
S2	30 Oct 2018	Water Color	Green
S2	30 Oct 2018	Current Direction	N
S2	30 Oct 2018	Water Temp (C)	15
S2	30 Oct 2018	Wave Height Low (ft)	2
S2	30 Oct 2018	High Tide (ft)	5
S2	30 Oct 2018	High Tide Time	1333
S2	30 Oct 2018	Low Tide (ft)	2.9
S2	30 Oct 2018	Low Tide Time	722
S2	30 Oct 2018	Comments	5 Persons; Water clear; No flow from stormdrain
S3	02 Oct 2018	Arrive Time	935
S3	02 Oct 2018	Weather	Cloudy
S3	02 Oct 2018	Wind Speed (kts)	0.8
S3	02 Oct 2018	Wind Dir	SW
S3	02 Oct 2018	Animal Life	5 Birds; 5 Dolphins
S3	02 Oct 2018	Floatables	None
S3	02 Oct 2018	Water Color	Green
S3	02 Oct 2018	Current Direction	N
S3	02 Oct 2018	Water Temp (C)	15
S3	02 Oct 2018	Wave Height Low (ft)	2
S3	02 Oct 2018	High Tide (ft)	3.4
S3	02 Oct 2018	High Tide Time	501
S3	02 Oct 2018	Low Tide (ft)	2.9
S3	02 Oct 2018	Low Tide Time	915
S3	02 Oct 2018	Comments	Water clear; No flow from storm drain
S3	09 Oct 2018	Arrive Time	1215
S3	09 Oct 2018	Weather	Sunny
S3	09 Oct 2018	Wind Speed (kts)	5
S3	09 Oct 2018	Wind Dir	NW
S3	09 Oct 2018	Animal Life	2 Dogs; 20 Seagulls
S3	09 Oct 2018	Floatables	None

Station	Date	Parameter	Value
S3	09 Oct 2018	Water Color	Green
S3	09 Oct 2018	Current Direction	N
S3	09 Oct 2018	Water Temp (C)	19
S3	09 Oct 2018	Wave Height Low (ft)	2
S3	09 Oct 2018	High Tide (ft)	6
S3	09 Oct 2018	High Tide Time	942
S3	09 Oct 2018	Low Tide (ft)	-0.1
S3	09 Oct 2018	Low Tide Time	1608
S3	09 Oct 2018	Comments	Kelp; Algae; 6 Persons; Water turbid; 5.0 L/s water flowing from storm drain
S3	10 Oct 2018	Arrive Time	1215
S3	10 Oct 2018	Weather	Sunny
S3	10 Oct 2018	Wind Speed (kts)	5
S3	10 Oct 2018	Wind Dir	NW
S3	10 Oct 2018	Animal Life	2 Dogs; 20 Seagulls
S3	10 Oct 2018	Floatables	None
S3	10 Oct 2018	Water Color	Green
S3	10 Oct 2018	Current Direction	N
S3	10 Oct 2018	Water Temp (C)	19
S3	10 Oct 2018	Wave Height Low (ft)	2
S3	10 Oct 2018	High Tide (ft)	6
S3	10 Oct 2018	High Tide Time	1015
S3	10 Oct 2018	Low Tide (ft)	-0.1
S3	10 Oct 2018	Low Tide Time	1652
S3	10 Oct 2018	Comments	Kelp; Algae; 6 Persons; Water turbid
S3	16 Oct 2018	Arrive Time	1020
S3	16 Oct 2018	Weather	Sunny
S3	16 Oct 2018	Wind Speed (kts)	0.9
S3	16 Oct 2018	Wind Dir	SW
S3	16 Oct 2018	Animal Life	5 Birds; 5 Dogs; 5 Dolphins
S3	16 Oct 2018	Floatables	None
S3	16 Oct 2018	Water Color	Green
S3	16 Oct 2018	Current Direction	N
S3	16 Oct 2018	Water Temp (C)	15
S3	16 Oct 2018	Wave Height Low (ft)	2
S3	16 Oct 2018	High Tide (ft)	3.6
S3	16 Oct 2018	High Tide Time	559
S3	16 Oct 2018	Low Tide (ft)	3.3
S3	16 Oct 2018	Low Tide Time	946
S3	16 Oct 2018	Comments	Kelp; Algae; 15 Persons; Water clear; Red algae; No flow from storm drain
S3	23 Oct 2018	Arrive Time	1115
S3	23 Oct 2018	Weather	Sunny
S3	23 Oct 2018	Wind Speed (kts)	4.6
S3	23 Oct 2018	Wind Dir	NE
S3	23 Oct 2018	Animal Life	10 Shorebirds; 1 Dog
S3	23 Oct 2018	Floatables	None
S3	23 Oct 2018	Water Color	Green
S3	23 Oct 2018	Current Direction	N
S3	23 Oct 2018	Water Temp (C)	16
S3	23 Oct 2018	Wave Height Low (ft)	3
S3	23 Oct 2018	High Tide (ft)	5.6

Station	Date	Parameter	Value
S3	23 Oct 2018	High Tide Time	847
S3	23 Oct 2018	Low Tide (ft)	0.3
S3	23 Oct 2018	Low Tide Time	1513
S3	23 Oct 2018	Comments	Kelp; Algae; 5 Persons; Water clear; 0.5 L/s water flowing from storm drain
S3	30 Oct 2018	Arrive Time	1225
S3	30 Oct 2018	Weather	Cloudy
S3	30 Oct 2018	Wind Speed (kts)	0.6
S3	30 Oct 2018	Wind Dir	SW
S3	30 Oct 2018	Animal Life	5 Birds; 5 Dogs
S3	30 Oct 2018	Floatables	None
S3	30 Oct 2018	Water Color	Green
S3	30 Oct 2018	Current Direction	N
S3	30 Oct 2018	Water Temp (C)	15
S3	30 Oct 2018	Wave Height Low (ft)	2
S3	30 Oct 2018	High Tide (ft)	5
S3	30 Oct 2018	High Tide Time	1333
S3	30 Oct 2018	Low Tide (ft)	2.9
S3	30 Oct 2018	Low Tide Time	722
S3	30 Oct 2018	Comments	Kelp; Algae; 15 Persons; Water clear; No flow from stormdrain
S4	02 Oct 2018	Arrive Time	1125
S4	02 Oct 2018	Weather	Sunny
S4	02 Oct 2018	Wind Speed (kts)	8.4
S4	02 Oct 2018	Wind Dir	SW
S4	02 Oct 2018	Animal Life	None
S4	02 Oct 2018	Floatables	None
S4	02 Oct 2018	Water Color	Green
S4	02 Oct 2018	Current Direction	N
S4	02 Oct 2018	Water Temp (C)	19
S4	02 Oct 2018	Wave Height Low (ft)	2
S4	02 Oct 2018	High Tide (ft)	4.9
S4	02 Oct 2018	High Tide Time	1527
S4	02 Oct 2018	Low Tide (ft)	2.9
S4	02 Oct 2018	Low Tide Time	915
S4	02 Oct 2018	Comments	Kelp; 1 Person; Water clear
S4	09 Oct 2018	Arrive Time	851
S4	09 Oct 2018	Weather	Overcast
S4	09 Oct 2018	Wind Speed (kts)	3.2
S4	09 Oct 2018	Wind Dir	N
S4	09 Oct 2018	Animal Life	None
S4	09 Oct 2018	Floatables	None
S4	09 Oct 2018	Water Color	Green
S4	09 Oct 2018	Current Direction	N
S4	09 Oct 2018	Water Temp (C)	17
S4	09 Oct 2018	Wave Height Low (ft)	2
S4	09 Oct 2018	High Tide (ft)	6
S4	09 Oct 2018	High Tide Time	942
S4	09 Oct 2018	Low Tide (ft)	0.2
S4	09 Oct 2018	Low Tide Time	336
S4	09 Oct 2018	Comments	Kelp; Seagrass; Water clear
S4	16 Oct 2018	Arrive Time	837

Station	Date	Parameter	Value
S4	16 Oct 2018	Weather	Sunny
S4	16 Oct 2018	Wind Speed (kts)	1.3
S4	16 Oct 2018	Wind Dir	W
S4	16 Oct 2018	Animal Life	65 Shorebirds; 14 Birds; 3 Pelicans
S4	16 Oct 2018	Floatables	None
S4	16 Oct 2018	Water Color	Green
S4	16 Oct 2018	Current Direction	W
S4	16 Oct 2018	Water Temp (C)	21
S4	16 Oct 2018	Wave Height Low (ft)	1
S4	16 Oct 2018	High Tide (ft)	3.6
S4	16 Oct 2018	High Tide Time	559
S4	16 Oct 2018	Low Tide (ft)	3.3
S4	16 Oct 2018	Low Tide Time	946
S4	16 Oct 2018	Comments	Kelp; Seagrass; Debris; Water clear; Lots of trash on beach. cigarette butts everywhere
S4	23 Oct 2018	Arrive Time	1105
S4	23 Oct 2018	Weather	Sunny
S4	23 Oct 2018	Wind Speed (kts)	5
S4	23 Oct 2018	Wind Dir	N
S4	23 Oct 2018	Animal Life	40 Birds
S4	23 Oct 2018	Floatables	None
S4	23 Oct 2018	Water Color	Green
S4	23 Oct 2018	Current Direction	N
S4	23 Oct 2018	Water Temp (C)	20
S4	23 Oct 2018	Wave Height Low (ft)	2
S4	23 Oct 2018	High Tide (ft)	5.6
S4	23 Oct 2018	High Tide Time	847
S4	23 Oct 2018	Low Tide (ft)	0.3
S4	23 Oct 2018	Low Tide Time	1513
S4	23 Oct 2018	Comments	Seagrass; Water clear
S4	30 Oct 2018	Arrive Time	907
S4	30 Oct 2018	Weather	Cloudy
S4	30 Oct 2018	Wind Speed (kts)	4.8
S4	30 Oct 2018	Wind Dir	W
S4	30 Oct 2018	Animal Life	None
S4	30 Oct 2018	Floatables	None
S4	30 Oct 2018	Water Color	Green
S4	30 Oct 2018	Current Direction	N
S4	30 Oct 2018	Water Temp (C)	17
S4	30 Oct 2018	Wave Height Low (ft)	4
S4	30 Oct 2018	High Tide (ft)	5
S4	30 Oct 2018	High Tide Time	1333
S4	30 Oct 2018	Low Tide (ft)	2.9
S4	30 Oct 2018	Low Tide Time	722
S4	30 Oct 2018	Comments	Kelp; Seagrass; 1 Person; Water clear
S4	31 Oct 2018	Arrive Time	1140
S4	31 Oct 2018	Weather	Sunny
S4	31 Oct 2018	Wind Speed (kts)	7.1
S4	31 Oct 2018	Wind Dir	N
S4	31 Oct 2018	Animal Life	None
S4	31 Oct 2018	Floatables	None
S4	31 Oct 2018	Water Color	Green

Station	Date	Parameter	Value
S4	31 Oct 2018	Current Direction	N
S4	31 Oct 2018	Water Temp (C)	20
S4	31 Oct 2018	Wave Height Low (ft)	4
S4	31 Oct 2018	High Tide (ft)	4.7
S4	31 Oct 2018	High Tide Time	1507
S4	31 Oct 2018	Low Tide (ft)	3
S4	31 Oct 2018	Low Tide Time	924
S4	31 Oct 2018	Comments	Resample; Kelp; Seagrass; Water clear
S5	02 Oct 2018	Arrive Time	931
S5	02 Oct 2018	Weather	Overcast
S5	02 Oct 2018	Wind Speed (kts)	6
S5	02 Oct 2018	Wind Dir	S
S5	02 Oct 2018	Animal Life	None
S5	02 Oct 2018	Floatables	None
S5	02 Oct 2018	Water Color	Green
S5	02 Oct 2018	Current Direction	N
S5	02 Oct 2018	Water Temp (C)	18
S5	02 Oct 2018	Wave Height Low (ft)	2
S5	02 Oct 2018	High Tide (ft)	3.4
S5	02 Oct 2018	High Tide Time	501
S5	02 Oct 2018	Low Tide (ft)	2.9
S5	02 Oct 2018	Low Tide Time	915
S5	02 Oct 2018	Comments	Kelp; Seagrass; 1 Person; Water clear
S5	09 Oct 2018	Arrive Time	959
S5	09 Oct 2018	Weather	Partly Cloudy
S5	09 Oct 2018	Wind Speed (kts)	4.5
S5	09 Oct 2018	Wind Dir	N
S5	09 Oct 2018	Animal Life	None
S5	09 Oct 2018	Floatables	None
S5	09 Oct 2018	Water Color	Green
S5	09 Oct 2018	Current Direction	N
S5	09 Oct 2018	Water Temp (C)	17
S5	09 Oct 2018	Wave Height Low (ft)	2
S5	09 Oct 2018	High Tide (ft)	6
S5	09 Oct 2018	High Tide Time	942
S5	09 Oct 2018	Low Tide (ft)	-0.1
S5	09 Oct 2018	Low Tide Time	1608
S5	09 Oct 2018	Comments	Kelp; Seagrass; Water clear
S5	16 Oct 2018	Arrive Time	859
S5	16 Oct 2018	Weather	Sunny
S5	16 Oct 2018	Wind Speed (kts)	4
S5	16 Oct 2018	Wind Dir	SE
S5	16 Oct 2018	Animal Life	None
S5	16 Oct 2018	Floatables	None
S5	16 Oct 2018	Water Color	Green
S5	16 Oct 2018	Current Direction	SE
S5	16 Oct 2018	Water Temp (C)	18
S5	16 Oct 2018	Wave Height Low (ft)	3
S5	16 Oct 2018	High Tide (ft)	3.6
S5	16 Oct 2018	High Tide Time	559
S5	16 Oct 2018	Low Tide (ft)	3.3
S5	16 Oct 2018	Low Tide Time	946

Station	Date	Parameter	Value
S5	16 Oct 2018	Comments	Kelp; Seagrass; 1 Person; Water clear
S5	18 Oct 2018	Arrive Time	848
S5	18 Oct 2018	Weather	Sunny
S5	18 Oct 2018	Wind Speed (kts)	5.4
S5	18 Oct 2018	Wind Dir	W
S5	18 Oct 2018	Animal Life	30 Shorebirds
S5	18 Oct 2018	Floatables	None
S5	18 Oct 2018	Water Color	Green
S5	18 Oct 2018	Current Direction	N
S5	18 Oct 2018	Water Temp (C)	19
S5	18 Oct 2018	Wave Height Low (ft)	2
S5	18 Oct 2018	High Tide (ft)	4.1
S5	18 Oct 2018	High Tide Time	658
S5	18 Oct 2018	Low Tide (ft)	0.8
S5	18 Oct 2018	Low Tide Time	1206
S5	18 Oct 2018	Comments	Resample; Kelp; Seagrass; Water clear
S5	23 Oct 2018	Arrive Time	852
S5	23 Oct 2018	Weather	Cloudy
S5	23 Oct 2018	Wind Speed (kts)	2.3
S5	23 Oct 2018	Wind Dir	N
S5	23 Oct 2018	Animal Life	None
S5	23 Oct 2018	Floatables	None
S5	23 Oct 2018	Water Color	Green
S5	23 Oct 2018	Current Direction	N
S5	23 Oct 2018	Water Temp (C)	19
S5	23 Oct 2018	Wave Height Low (ft)	3
S5	23 Oct 2018	High Tide (ft)	5.6
S5	23 Oct 2018	High Tide Time	847
S5	23 Oct 2018	Low Tide (ft)	0.6
S5	23 Oct 2018	Low Tide Time	241
S5	23 Oct 2018	Comments	Kelp; Seagrass; 3 Persons; Water clear
S5	30 Oct 2018	Arrive Time	1020
S5	30 Oct 2018	Weather	Cloudy
S5	30 Oct 2018	Wind Speed (kts)	4.3
S5	30 Oct 2018	Wind Dir	W
S5	30 Oct 2018	Animal Life	None
S5	30 Oct 2018	Floatables	None
S5	30 Oct 2018	Water Color	Green
S5	30 Oct 2018	Current Direction	N
S5	30 Oct 2018	Water Temp (C)	16
S5	30 Oct 2018	Wave Height Low (ft)	4
S5	30 Oct 2018	High Tide (ft)	5
S5	30 Oct 2018	High Tide Time	1333
S5	30 Oct 2018	Low Tide (ft)	2.9
S5	30 Oct 2018	Low Tide Time	722
S5	30 Oct 2018	Comments	Kelp; Seagrass; Water clear
S6	02 Oct 2018	Arrive Time	948
S6	02 Oct 2018	Weather	Overcast
S6	02 Oct 2018	Wind Speed (kts)	5.4
S6	02 Oct 2018	Wind Dir	S
S6	02 Oct 2018	Animal Life	None

Station	Date	Parameter	Value
S6	02 Oct 2018	Floatables	None
S6	02 Oct 2018	Water Color	Green
S6	02 Oct 2018	Current Direction	N
S6	02 Oct 2018	Water Temp (C)	18
S6	02 Oct 2018	Wave Height Low (ft)	2
S6	02 Oct 2018	High Tide (ft)	3.4
S6	02 Oct 2018	High Tide Time	501
S6	02 Oct 2018	Low Tide (ft)	2.9
S6	02 Oct 2018	Low Tide Time	915
S6	02 Oct 2018	Comments	7 Persons; 1 Surfer; Water clear
S6	09 Oct 2018	Arrive Time	1014
S6	09 Oct 2018	Weather	Partly Cloudy
S6	09 Oct 2018	Wind Speed (kts)	4
S6	09 Oct 2018	Wind Dir	N
S6	09 Oct 2018	Animal Life	None
S6	09 Oct 2018	Floatables	None
S6	09 Oct 2018	Water Color	Green
S6	09 Oct 2018	Current Direction	N
S6	09 Oct 2018	Water Temp (C)	19
S6	09 Oct 2018	Wave Height Low (ft)	2
S6	09 Oct 2018	High Tide (ft)	6
S6	09 Oct 2018	High Tide Time	942
S6	09 Oct 2018	Low Tide (ft)	-0.1
S6	09 Oct 2018	Low Tide Time	1608
S6	09 Oct 2018	Comments	Kelp; Seagrass; 1 Person; 4 Surfers; Water clear
S6	16 Oct 2018	Arrive Time	924
S6	16 Oct 2018	Weather	Sunny
S6	16 Oct 2018	Wind Speed (kts)	4
S6	16 Oct 2018	Wind Dir	SE
S6	16 Oct 2018	Animal Life	None
S6	16 Oct 2018	Floatables	None
S6	16 Oct 2018	Water Color	Green
S6	16 Oct 2018	Current Direction	SE
S6	16 Oct 2018	Water Temp (C)	20
S6	16 Oct 2018	Wave Height Low (ft)	3
S6	16 Oct 2018	High Tide (ft)	3.6
S6	16 Oct 2018	High Tide Time	559
S6	16 Oct 2018	Low Tide (ft)	3.3
S6	16 Oct 2018	Low Tide Time	946
S6	16 Oct 2018	Comments	Kelp; Sewage-like odor; 9 Surfers; Water turbid
S6	23 Oct 2018	Arrive Time	931
S6	23 Oct 2018	Weather	Cloudy
S6	23 Oct 2018	Wind Speed (kts)	3.7
S6	23 Oct 2018	Wind Dir	N
S6	23 Oct 2018	Animal Life	None
S6	23 Oct 2018	Floatables	None
S6	23 Oct 2018	Water Color	Green
S6	23 Oct 2018	Current Direction	N
S6	23 Oct 2018	Water Temp (C)	19
S6	23 Oct 2018	Wave Height Low (ft)	2
S6	23 Oct 2018	High Tide (ft)	5.6
S6	23 Oct 2018	High Tide Time	847

Station	Date	Parameter	Value
S6	23 Oct 2018	Low Tide (ft)	0.3
S6	23 Oct 2018	Low Tide Time	1513
S6	23 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; 2 Surfers; Water clear
S6	30 Oct 2018	Arrive Time	1044
S6	30 Oct 2018	Weather	Cloudy
S6	30 Oct 2018	Wind Speed (kts)	5.8
S6	30 Oct 2018	Wind Dir	W
S6	30 Oct 2018	Animal Life	None
S6	30 Oct 2018	Floatables	None
S6	30 Oct 2018	Water Color	Green
S6	30 Oct 2018	Current Direction	N
S6	30 Oct 2018	Water Temp (C)	16
S6	30 Oct 2018	Wave Height Low (ft)	4
S6	30 Oct 2018	High Tide (ft)	5
S6	30 Oct 2018	High Tide Time	1333
S6	30 Oct 2018	Low Tide (ft)	2.9
S6	30 Oct 2018	Low Tide Time	722
S6	30 Oct 2018	Comments	Kelp; Seagrass; Water clear
S8	02 Oct 2018	Arrive Time	846
S8	02 Oct 2018	Weather	Overcast
S8	02 Oct 2018	Wind Speed (kts)	2.7
S8	02 Oct 2018	Wind Dir	SE
S8	02 Oct 2018	Animal Life	None
S8	02 Oct 2018	Floatables	None
S8	02 Oct 2018	Water Color	Green
S8	02 Oct 2018	Current Direction	N
S8	02 Oct 2018	Water Temp (C)	18
S8	02 Oct 2018	Wave Height Low (ft)	2
S8	02 Oct 2018	High Tide (ft)	3.4
S8	02 Oct 2018	High Tide Time	501
S8	02 Oct 2018	Low Tide (ft)	2.9
S8	02 Oct 2018	Low Tide Time	915
S8	02 Oct 2018	Comments	Kelp; Seagrass; Water clear
S8	09 Oct 2018	Arrive Time	1147
S8	09 Oct 2018	Weather	Sunny
S8	09 Oct 2018	Wind Speed (kts)	6.4
S8	09 Oct 2018	Wind Dir	N
S8	09 Oct 2018	Animal Life	None
S8	09 Oct 2018	Floatables	None
S8	09 Oct 2018	Water Color	Green
S8	09 Oct 2018	Current Direction	N
S8	09 Oct 2018	Water Temp (C)	20
S8	09 Oct 2018	Wave Height Low (ft)	3
S8	09 Oct 2018	High Tide (ft)	6
S8	09 Oct 2018	High Tide Time	942
S8	09 Oct 2018	Low Tide (ft)	-0.1
S8	09 Oct 2018	Low Tide Time	1608
S8	09 Oct 2018	Comments	Seagrass; 20 Persons; 3 Surfers; 11 Swimmers; Water clear
S8	16 Oct 2018	Arrive Time	734
S8	16 Oct 2018	Weather	Sunny
S8	16 Oct 2018	Wind Speed (kts)	3.3

Station	Date	Parameter	Value
S8	16 Oct 2018	Wind Dir	W
S8	16 Oct 2018	Animal Life	7 Shorebirds; 30 Birds; 1 Pelican
S8	16 Oct 2018	Floatables	None
S8	16 Oct 2018	Water Color	Green
S8	16 Oct 2018	Current Direction	W
S8	16 Oct 2018	Water Temp (C)	15
S8	16 Oct 2018	Wave Height Low (ft)	1
S8	16 Oct 2018	High Tide (ft)	3.6
S8	16 Oct 2018	High Tide Time	559
S8	16 Oct 2018	Low Tide (ft)	3.3
S8	16 Oct 2018	Low Tide Time	946
S8	16 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
S8	23 Oct 2018	Arrive Time	733
S8	23 Oct 2018	Weather	Partly Cloudy
S8	23 Oct 2018	Wind Speed (kts)	4
S8	23 Oct 2018	Wind Dir	N
S8	23 Oct 2018	Animal Life	None
S8	23 Oct 2018	Floatables	None
S8	23 Oct 2018	Water Color	Green
S8	23 Oct 2018	Current Direction	N
S8	23 Oct 2018	Water Temp (C)	17
S8	23 Oct 2018	Wave Height Low (ft)	2
S8	23 Oct 2018	High Tide (ft)	5.6
S8	23 Oct 2018	High Tide Time	847
S8	23 Oct 2018	Low Tide (ft)	0.6
S8	23 Oct 2018	Low Tide Time	241
S8	23 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
S8	30 Oct 2018	Arrive Time	1213
S8	30 Oct 2018	Weather	Partly Cloudy
S8	30 Oct 2018	Wind Speed (kts)	5.6
S8	30 Oct 2018	Wind Dir	W
S8	30 Oct 2018	Animal Life	None
S8	30 Oct 2018	Floatables	None
S8	30 Oct 2018	Water Color	Green
S8	30 Oct 2018	Current Direction	N
S8	30 Oct 2018	Water Temp (C)	16
S8	30 Oct 2018	Wave Height Low (ft)	4
S8	30 Oct 2018	High Tide (ft)	5
S8	30 Oct 2018	High Tide Time	1333
S8	30 Oct 2018	Low Tide (ft)	2.9
S8	30 Oct 2018	Low Tide Time	722
S8	30 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
S9	02 Oct 2018	Arrive Time	818
S9	02 Oct 2018	Weather	Overcast
S9	02 Oct 2018	Wind Speed (kts)	2.7
S9	02 Oct 2018	Wind Dir	SE
S9	02 Oct 2018	Animal Life	None
S9	02 Oct 2018	Floatables	None
S9	02 Oct 2018	Water Color	Green
S9	02 Oct 2018	Current Direction	N
S9	02 Oct 2018	Water Temp (C)	19
S9	02 Oct 2018	Wave Height Low (ft)	1

Station	Date	Parameter	Value
S9	02 Oct 2018	High Tide (ft)	3.4
S9	02 Oct 2018	High Tide Time	501
S9	02 Oct 2018	Low Tide (ft)	2.9
S9	02 Oct 2018	Low Tide Time	915
S9	02 Oct 2018	Comments	Seagrass; 1 Jogger; 2 Persons; 2 Surfers; Water clear
S9	09 Oct 2018	Arrive Time	1223
S9	09 Oct 2018	Weather	Sunny
S9	09 Oct 2018	Wind Speed (kts)	6.4
S9	09 Oct 2018	Wind Dir	N
S9	09 Oct 2018	Animal Life	None
S9	09 Oct 2018	Floatables	None
S9	09 Oct 2018	Water Color	Green
S9	09 Oct 2018	Current Direction	N
S9	09 Oct 2018	Water Temp (C)	19
S9	09 Oct 2018	Wave Height Low (ft)	3
S9	09 Oct 2018	High Tide (ft)	6
S9	09 Oct 2018	High Tide Time	942
S9	09 Oct 2018	Low Tide (ft)	-0.1
S9	09 Oct 2018	Low Tide Time	1608
S9	09 Oct 2018	Comments	Seagrass; 12 Persons; 2 Swimmers; Water clear
S9	16 Oct 2018	Arrive Time	711
S9	16 Oct 2018	Weather	Sunny
S9	16 Oct 2018	Wind Speed (kts)	1.1
S9	16 Oct 2018	Wind Dir	N
S9	16 Oct 2018	Animal Life	1 Pelican
S9	16 Oct 2018	Floatables	None
S9	16 Oct 2018	Water Color	Green
S9	16 Oct 2018	Current Direction	N
S9	16 Oct 2018	Water Temp (C)	15
S9	16 Oct 2018	Wave Height Low (ft)	1
S9	16 Oct 2018	High Tide (ft)	3.6
S9	16 Oct 2018	High Tide Time	559
S9	16 Oct 2018	Low Tide (ft)	3.3
S9	16 Oct 2018	Low Tide Time	946
S9	16 Oct 2018	Comments	Kelp; Seagrass; 1 Jogger; 4 Persons; Water clear
S9	23 Oct 2018	Arrive Time	714
S9	23 Oct 2018	Weather	Cloudy
S9	23 Oct 2018	Wind Speed (kts)	0.6
S9	23 Oct 2018	Wind Dir	N
S9	23 Oct 2018	Animal Life	None
S9	23 Oct 2018	Floatables	None
S9	23 Oct 2018	Water Color	Green
S9	23 Oct 2018	Current Direction	N
S9	23 Oct 2018	Water Temp (C)	17
S9	23 Oct 2018	Wave Height Low (ft)	1
S9	23 Oct 2018	High Tide (ft)	5.6
S9	23 Oct 2018	High Tide Time	847
S9	23 Oct 2018	Low Tide (ft)	0.6
S9	23 Oct 2018	Low Tide Time	241
S9	23 Oct 2018	Comments	Seagrass; 1 Jogger; Water clear
S9	30 Oct 2018	Arrive Time	1240

Station	Date	Parameter	Value
S9	30 Oct 2018	Weather	Partly Cloudy
S9	30 Oct 2018	Wind Speed (kts)	3.8
S9	30 Oct 2018	Wind Dir	W
S9	30 Oct 2018	Animal Life	None
S9	30 Oct 2018	Floatables	None
S9	30 Oct 2018	Water Color	Green
S9	30 Oct 2018	Current Direction	N
S9	30 Oct 2018	Water Temp (C)	17
S9	30 Oct 2018	Wave Height Low (ft)	3
S9	30 Oct 2018	High Tide (ft)	5
S9	30 Oct 2018	High Tide Time	1333
S9	30 Oct 2018	Low Tide (ft)	2.9
S9	30 Oct 2018	Low Tide Time	722
S9	30 Oct 2018	Comments	Kelp; Seagrass; 1 Jogger; 1 Person; Water clear
S10	02 Oct 2018	Arrive Time	1117
S10	02 Oct 2018	Weather	Sunny
S10	02 Oct 2018	Wind Speed (kts)	10.6
S10	02 Oct 2018	Wind Dir	S
S10	02 Oct 2018	Animal Life	None
S10	02 Oct 2018	Floatables	None
S10	02 Oct 2018	Water Color	Green
S10	02 Oct 2018	Current Direction	N
S10	02 Oct 2018	Water Temp (C)	17
S10	02 Oct 2018	Wave Height Low (ft)	1
S10	02 Oct 2018	High Tide (ft)	4.9
S10	02 Oct 2018	High Tide Time	1527
S10	02 Oct 2018	Low Tide (ft)	2.9
S10	02 Oct 2018	Low Tide Time	915
S10	02 Oct 2018	Comments	Kelp; Seagrass; Water clear
S10	09 Oct 2018	Arrive Time	846
S10	09 Oct 2018	Weather	Overcast
S10	09 Oct 2018	Wind Speed (kts)	0.1
S10	09 Oct 2018	Wind Dir	N
S10	09 Oct 2018	Animal Life	None
S10	09 Oct 2018	Floatables	None
S10	09 Oct 2018	Water Color	Green
S10	09 Oct 2018	Current Direction	N
S10	09 Oct 2018	Water Temp (C)	18
S10	09 Oct 2018	Wave Height Low (ft)	3
S10	09 Oct 2018	High Tide (ft)	6
S10	09 Oct 2018	High Tide Time	942
S10	09 Oct 2018	Low Tide (ft)	0.2
S10	09 Oct 2018	Low Tide Time	336
S10	09 Oct 2018	Comments	Seagrass; Water clear
S10	16 Oct 2018	Arrive Time	855
S10	16 Oct 2018	Weather	Sunny
S10	16 Oct 2018	Wind Speed (kts)	5.6
S10	16 Oct 2018	Wind Dir	W
S10	16 Oct 2018	Animal Life	2 Birds
S10	16 Oct 2018	Floatables	None
S10	16 Oct 2018	Water Color	Green
S10	16 Oct 2018	Current Direction	W

Station	Date	Parameter	Value
S10	16 Oct 2018	Water Temp (C)	19
S10	16 Oct 2018	Wave Height Low (ft)	1
S10	16 Oct 2018	High Tide (ft)	3.6
S10	16 Oct 2018	High Tide Time	559
S10	16 Oct 2018	Low Tide (ft)	3.3
S10	16 Oct 2018	Low Tide Time	946
S10	16 Oct 2018	Comments	Kelp; Seagrass; Debris; Water clear
S10	23 Oct 2018	Arrive Time	1035
S10	23 Oct 2018	Weather	Sunny
S10	23 Oct 2018	Wind Speed (kts)	5.3
S10	23 Oct 2018	Wind Dir	N
S10	23 Oct 2018	Animal Life	None
S10	23 Oct 2018	Floatables	None
S10	23 Oct 2018	Water Color	Green
S10	23 Oct 2018	Current Direction	N
S10	23 Oct 2018	Water Temp (C)	18
S10	23 Oct 2018	Wave Height Low (ft)	3
S10	23 Oct 2018	High Tide (ft)	5.6
S10	23 Oct 2018	High Tide Time	847
S10	23 Oct 2018	Low Tide (ft)	0.3
S10	23 Oct 2018	Low Tide Time	1513
S10	23 Oct 2018	Comments	Kelp; Seagrass; Water clear
S10	30 Oct 2018	Arrive Time	900
S10	30 Oct 2018	Weather	Cloudy
S10	30 Oct 2018	Wind Speed (kts)	5
S10	30 Oct 2018	Wind Dir	W
S10	30 Oct 2018	Animal Life	None
S10	30 Oct 2018	Floatables	None
S10	30 Oct 2018	Water Color	Green
S10	30 Oct 2018	Current Direction	N
S10	30 Oct 2018	Water Temp (C)	16
S10	30 Oct 2018	Wave Height Low (ft)	4
S10	30 Oct 2018	High Tide (ft)	5
S10	30 Oct 2018	High Tide Time	1333
S10	30 Oct 2018	Low Tide (ft)	2.9
S10	30 Oct 2018	Low Tide Time	722
S10	30 Oct 2018	Comments	Kelp; Seagrass; Water clear
S11	02 Oct 2018	Arrive Time	938
S11	02 Oct 2018	Weather	Overcast
S11	02 Oct 2018	Wind Speed (kts)	5.2
S11	02 Oct 2018	Wind Dir	S
S11	02 Oct 2018	Animal Life	None
S11	02 Oct 2018	Floatables	None
S11	02 Oct 2018	Water Color	Green
S11	02 Oct 2018	Current Direction	N
S11	02 Oct 2018	Water Temp (C)	17
S11	02 Oct 2018	Wave Height Low (ft)	2
S11	02 Oct 2018	High Tide (ft)	3.4
S11	02 Oct 2018	High Tide Time	501
S11	02 Oct 2018	Low Tide (ft)	2.9
S11	02 Oct 2018	Low Tide Time	915
S11	02 Oct 2018	Comments	Kelp; Seagrass; 2 Surfers; Water clear

Station	Date	Parameter	Value
S11	09 Oct 2018	Arrive Time	1006
S11	09 Oct 2018	Weather	Partly Cloudy
S11	09 Oct 2018	Wind Speed (kts)	4
S11	09 Oct 2018	Wind Dir	N
S11	09 Oct 2018	Animal Life	None
S11	09 Oct 2018	Floatables	None
S11	09 Oct 2018	Water Color	Green
S11	09 Oct 2018	Current Direction	N
S11	09 Oct 2018	Water Temp (C)	19
S11	09 Oct 2018	Wave Height Low (ft)	2
S11	09 Oct 2018	High Tide (ft)	6
S11	09 Oct 2018	High Tide Time	942
S11	09 Oct 2018	Low Tide (ft)	-0.1
S11	09 Oct 2018	Low Tide Time	1608
S11	09 Oct 2018	Comments	Kelp; Seagrass; Water clear
S11	16 Oct 2018	Arrive Time	911
S11	16 Oct 2018	Weather	Sunny
S11	16 Oct 2018	Wind Speed (kts)	4
S11	16 Oct 2018	Wind Dir	SE
S11	16 Oct 2018	Animal Life	None
S11	16 Oct 2018	Floatables	None
S11	16 Oct 2018	Water Color	Green
S11	16 Oct 2018	Current Direction	SE
S11	16 Oct 2018	Water Temp (C)	18
S11	16 Oct 2018	Wave Height Low (ft)	3
S11	16 Oct 2018	High Tide (ft)	3.6
S11	16 Oct 2018	High Tide Time	559
S11	16 Oct 2018	Low Tide (ft)	3.3
S11	16 Oct 2018	Low Tide Time	946
S11	16 Oct 2018	Comments	Kelp; Seagrass; Water turbid
S11	23 Oct 2018	Arrive Time	909
S11	23 Oct 2018	Weather	Cloudy
S11	23 Oct 2018	Wind Speed (kts)	3.3
S11	23 Oct 2018	Wind Dir	N
S11	23 Oct 2018	Animal Life	None
S11	23 Oct 2018	Floatables	None
S11	23 Oct 2018	Water Color	Green
S11	23 Oct 2018	Current Direction	N
S11	23 Oct 2018	Water Temp (C)	19
S11	23 Oct 2018	Wave Height Low (ft)	2
S11	23 Oct 2018	High Tide (ft)	5.6
S11	23 Oct 2018	High Tide Time	847
S11	23 Oct 2018	Low Tide (ft)	0.3
S11	23 Oct 2018	Low Tide Time	1513
S11	23 Oct 2018	Comments	Seagrass; 2 Persons; Water clear
S11	30 Oct 2018	Arrive Time	1025
S11	30 Oct 2018	Weather	Cloudy
S11	30 Oct 2018	Wind Speed (kts)	5.4
S11	30 Oct 2018	Wind Dir	W
S11	30 Oct 2018	Animal Life	None
S11	30 Oct 2018	Floatables	None

Station	Date	Parameter	Value
S11	30 Oct 2018	Water Color	Green
S11	30 Oct 2018	Current Direction	N
S11	30 Oct 2018	Water Temp (C)	16
S11	30 Oct 2018	Wave Height Low (ft)	4
S11	30 Oct 2018	High Tide (ft)	5
S11	30 Oct 2018	High Tide Time	1333
S11	30 Oct 2018	Low Tide (ft)	2.9
S11	30 Oct 2018	Low Tide Time	722
S11	30 Oct 2018	Comments	Kelp; Seagrass; Water clear
S12	02 Oct 2018	Arrive Time	958
S12	02 Oct 2018	Weather	Overcast
S12	02 Oct 2018	Wind Speed (kts)	4
S12	02 Oct 2018	Wind Dir	S
S12	02 Oct 2018	Animal Life	None
S12	02 Oct 2018	Floatables	None
S12	02 Oct 2018	Water Color	Green
S12	02 Oct 2018	Current Direction	N
S12	02 Oct 2018	Water Temp (C)	18
S12	02 Oct 2018	Wave Height Low (ft)	2
S12	02 Oct 2018	High Tide (ft)	3.4
S12	02 Oct 2018	High Tide Time	501
S12	02 Oct 2018	Low Tide (ft)	2.9
S12	02 Oct 2018	Low Tide Time	915
S12	02 Oct 2018	Comments	Seagrass; 2 Persons; Water clear
S12	09 Oct 2018	Arrive Time	1023
S12	09 Oct 2018	Weather	Sunny
S12	09 Oct 2018	Wind Speed (kts)	3.4
S12	09 Oct 2018	Wind Dir	N
S12	09 Oct 2018	Animal Life	None
S12	09 Oct 2018	Floatables	None
S12	09 Oct 2018	Water Color	Green
S12	09 Oct 2018	Current Direction	N
S12	09 Oct 2018	Water Temp (C)	19
S12	09 Oct 2018	Wave Height Low (ft)	4
S12	09 Oct 2018	High Tide (ft)	6
S12	09 Oct 2018	High Tide Time	942
S12	09 Oct 2018	Low Tide (ft)	-0.1
S12	09 Oct 2018	Low Tide Time	1608
S12	09 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
S12	16 Oct 2018	Arrive Time	951
S12	16 Oct 2018	Weather	Sunny
S12	16 Oct 2018	Wind Speed (kts)	4
S12	16 Oct 2018	Wind Dir	SE
S12	16 Oct 2018	Animal Life	None
S12	16 Oct 2018	Floatables	None
S12	16 Oct 2018	Water Color	Green
S12	16 Oct 2018	Current Direction	SE
S12	16 Oct 2018	Water Temp (C)	21
S12	16 Oct 2018	Wave Height Low (ft)	3
S12	16 Oct 2018	High Tide (ft)	3.6
S12	16 Oct 2018	High Tide Time	559
S12	16 Oct 2018	Low Tide (ft)	3.3

Station	Date	Parameter	Value
S12	16 Oct 2018	Low Tide Time	946
S12	16 Oct 2018	Comments	Kelp; Seagrass; 7 Persons; Water clear; 7 People cleaning beach
S12	23 Oct 2018	Arrive Time	756
S12	23 Oct 2018	Weather	Cloudy
S12	23 Oct 2018	Wind Speed (kts)	1.5
S12	23 Oct 2018	Wind Dir	N
S12	23 Oct 2018	Animal Life	2 Dogs
S12	23 Oct 2018	Floatables	None
S12	23 Oct 2018	Water Color	Green
S12	23 Oct 2018	Current Direction	N
S12	23 Oct 2018	Water Temp (C)	16
S12	23 Oct 2018	Wave Height Low (ft)	3
S12	23 Oct 2018	High Tide (ft)	5.6
S12	23 Oct 2018	High Tide Time	847
S12	23 Oct 2018	Low Tide (ft)	0.6
S12	23 Oct 2018	Low Tide Time	241
S12	23 Oct 2018	Comments	Kelp; Seagrass; 2 Persons; Water clear
S12	30 Oct 2018	Arrive Time	1052
S12	30 Oct 2018	Weather	Partly Cloudy
S12	30 Oct 2018	Wind Speed (kts)	3.4
S12	30 Oct 2018	Wind Dir	W
S12	30 Oct 2018	Animal Life	None
S12	30 Oct 2018	Floatables	None
S12	30 Oct 2018	Water Color	Green
S12	30 Oct 2018	Current Direction	N
S12	30 Oct 2018	Water Temp (C)	16
S12	30 Oct 2018	Wave Height Low (ft)	3
S12	30 Oct 2018	High Tide (ft)	5
S12	30 Oct 2018	High Tide Time	1333
S12	30 Oct 2018	Low Tide (ft)	2.9
S12	30 Oct 2018	Low Tide Time	722
S12	30 Oct 2018	Comments	Kelp; Seagrass; Water clear

# Kelp Stations



**Table 3.1**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	7	9	5	5	7	4	7
02 Oct 2018	7	9	5	5	7	4	7
03 Oct 2018	7	9	5	5	7	4	7
04 Oct 2018	5*	4*	2*	2*	5*	4*	5*
05 Oct 2018	5*	4*	2*	2*	5*	4*	5*
06 Oct 2018	5*	4*	2*	2*	5*	4*	5*
07 Oct 2018	5*	4*	2*	2*	5*	4*	5*
08 Oct 2018	7	6	3	3	7	3	6
09 Oct 2018	7	6	3	3	7	3	6
10 Oct 2018	6*	5*	4*	4*	5*	4*	6*
11 Oct 2018	6*	5*	4*	4*	5*	4*	6*
12 Oct 2018	6*	5*	4*	4*	5*	4*	6*
13 Oct 2018	6*	5*	4*	4*	5*	4*	6*
14 Oct 2018	6*	5*	4*	4*	5*	4*	6*
15 Oct 2018	8	6	5	5	10	3	9
16 Oct 2018	8	6	5	5	10	3	9
17 Oct 2018	7*	5*	7*	6*	11*	2*	8*
18 Oct 2018	7*	5*	7*	6*	11*	2*	8*
19 Oct 2018	7*	5*	7*	6*	11*	2*	8*
20 Oct 2018	7*	5*	7*	6*	11*	2*	8*
21 Oct 2018	7*	5*	7*	6*	11*	2*	8*
22 Oct 2018	6	4	5	5	8	2	6
23 Oct 2018	6	4	5	5	8	2	6
24 Oct 2018	7*	5*	6*	6*	11*	2*	8*
25 Oct 2018	7*	5*	6*	6*	11*	2*	8*
26 Oct 2018	7*	5*	6*	6*	11*	2*	8*
27 Oct 2018	7*	5*	6*	6*	11*	2*	8*
28 Oct 2018	7*	5*	6*	6*	11*	2*	8*
29 Oct 2018	6	4	5	5	8	2	6
30 Oct 2018	6	4	5	5	8	2	6
31 Oct 2018	6*	5*	7*	6*	11*	2*	8*

\* Geometric mean calculated using n<5

**Table 3.2**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	2	2	2	2	2	2	2
02 Oct 2018	2	2	2	2	2	2	2
03 Oct 2018	2	2	2	2	2	2	2
04 Oct 2018	2*	2*	2*	2*	2*	2*	2*
05 Oct 2018	2*	2*	2*	2*	2*	2*	2*
06 Oct 2018	2*	2*	2*	2*	2*	2*	2*
07 Oct 2018	2*	2*	2*	2*	2*	2*	2*
08 Oct 2018	2	2	2	2	2	2	2
09 Oct 2018	2	2	2	2	2	2	2
10 Oct 2018	2*	2*	2*	2*	2*	2*	2*
11 Oct 2018	2*	2*	2*	2*	2*	2*	2*
12 Oct 2018	2*	2*	2*	2*	2*	2*	2*
13 Oct 2018	2*	2*	2*	2*	2*	2*	2*
14 Oct 2018	2*	2*	2*	2*	2*	2*	2*
15 Oct 2018	2	2	2	2	4	2	2
16 Oct 2018	2	2	2	2	4	2	2
17 Oct 2018	2*	2*	2*	3*	4*	2*	3*
18 Oct 2018	2*	2*	2*	3*	4*	2*	3*
19 Oct 2018	2*	2*	2*	3*	4*	2*	3*
20 Oct 2018	2*	2*	2*	3*	4*	2*	3*
21 Oct 2018	2*	2*	2*	3*	4*	2*	3*
22 Oct 2018	2	2	2	2	4	2	2
23 Oct 2018	2	2	2	2	4	2	2
24 Oct 2018	2*	2*	2*	3*	4*	2*	3*
25 Oct 2018	2*	2*	2*	3*	4*	2*	3*
26 Oct 2018	2*	2*	2*	3*	4*	2*	3*
27 Oct 2018	2*	2*	2*	3*	4*	2*	3*
28 Oct 2018	2*	2*	2*	3*	4*	2*	3*
29 Oct 2018	2	2	2	2	4	2	2
30 Oct 2018	2	2	2	2	4	2	2
31 Oct 2018	2*	2*	2*	3*	4*	2*	3*

\* Geometric mean calculated using n<5

**Table 3.3**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	2	2	2	2	2	2	2
02 Oct 2018	2	2	2	2	2	2	2
03 Oct 2018	2	2	2	2	2	2	2
04 Oct 2018	2*	2*	2*	2*	2*	2*	2*
05 Oct 2018	2*	2*	2*	2*	2*	2*	2*
06 Oct 2018	2*	2*	2*	2*	2*	2*	2*
07 Oct 2018	2*	2*	2*	2*	2*	2*	2*
08 Oct 2018	2	2	2	2	2	2	2
09 Oct 2018	2	2	2	2	2	2	2
10 Oct 2018	2*	2*	2*	2*	2*	2*	2*
11 Oct 2018	2*	2*	2*	2*	2*	2*	2*
12 Oct 2018	2*	2*	2*	2*	2*	2*	2*
13 Oct 2018	2*	2*	2*	2*	2*	2*	2*
14 Oct 2018	2*	2*	2*	2*	2*	2*	2*
15 Oct 2018	2	2	2	2	2	2	2
16 Oct 2018	2	2	2	2	2	2	2
17 Oct 2018	2*	2*	2*	2*	2*	2*	2*
18 Oct 2018	2*	2*	2*	2*	2*	2*	2*
19 Oct 2018	2*	2*	2*	2*	2*	2*	2*
20 Oct 2018	2*	2*	2*	2*	2*	2*	2*
21 Oct 2018	2*	2*	2*	2*	2*	2*	2*
22 Oct 2018	2	2	2	2	2	2	2
23 Oct 2018	2	2	2	2	2	2	2
24 Oct 2018	2*	2*	2*	2*	2*	2*	2*
25 Oct 2018	2*	2*	2*	2*	2*	2*	2*
26 Oct 2018	2*	2*	2*	2*	2*	2*	2*
27 Oct 2018	2*	2*	2*	2*	2*	2*	2*
28 Oct 2018	2*	2*	2*	2*	2*	2*	2*
29 Oct 2018	2	2	3	2	2	2	2
30 Oct 2018	2	2	3	2	2	2	2
31 Oct 2018	2*	2*	3*	2*	2*	2*	2*

\* Geometric mean calculated using n<5

**Table 3.4**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	IC						
08 Oct 2018	IC						
15 Oct 2018	IC						
22 Oct 2018	IC						
29 Oct 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.5**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	IC						
08 Oct 2018	IC						
15 Oct 2018	IC						
22 Oct 2018	IC						
29 Oct 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.6**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	IC						
08 Oct 2018	IC						
15 Oct 2018	IC						
22 Oct 2018	IC						
29 Oct 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.7**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Oct 2018	IC						
08 Oct 2018	IC						
15 Oct 2018	IC						
22 Oct 2018	IC						
29 Oct 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

**Table 3.8**

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

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
I19	01 Oct 2018	1051	2	10e	<2	2e	0.20	16.3	75.86	8.1	33.53	8.1
I19	01 Oct 2018	1051	6	4e	<2	<2	0.50	14.7	76.59	8.3	33.51	8.1
I19	01 Oct 2018	1051	11	<2	<2	<2	1.00	14.3	66.45	7.8	33.50	8.1
I19	08 Oct 2018	1124	2	<20	<2	<2	0.10	19.0	73.47	7.8	33.56	8.2
I19	08 Oct 2018	1124	6	<20	<2	<2	0.10	18.4	68.56	8.0	33.51	8.2
I19	08 Oct 2018	1124	11	<20	<2	<2	0.10	17.7	74.27	8.1	33.52	8.2
I19	15 Oct 2018	1117	2	<20	<2	<2	0.10	18.3	67.24	8.4	33.49	8.2
I19	15 Oct 2018	1117	6	<2	<2	<2	1.00	17.4	67.18	8.0	33.53	8.2
I19	15 Oct 2018	1117	11	<20	<2	<2	0.10	17.2	64.62	7.6	33.53	8.1
I19	22 Oct 2018	1143	2	<2	<2	<2	1.00	17.5	74.38	8.2	33.56	8.1
I19	22 Oct 2018	1143	6	2e	2e	2e	1.00	17.0	68.90	8.1	33.53	8.1
I19	22 Oct 2018	1143	11	<2	<2	2e	1.00	16.8	69.78	8.1	33.52	8.1
I19	29 Oct 2018	1059	2	<2	<2	<2	1.00	17.3	75.41	7.9	33.53	8.1
I19	29 Oct 2018	1059	6	2e	<2	<2	1.00	15.6	74.28	7.1	33.52	8.1
I19	29 Oct 2018	1059	11	<2	2e	<2	1.00	15.3	59.98	6.9	33.51	8.0
I24	01 Oct 2018	1114	2	<2	<2	<2	1.00	16.6	79.20	8.2	33.55	8.1
I24	01 Oct 2018	1114	6	<2	<2	<2	1.00	15.0	60.94	7.9	33.51	8.1
I24	01 Oct 2018	1114	11	<2	<2	<2	1.00	14.3	44.66	7.2	33.49	8.0
I24	08 Oct 2018	1201	2	<20	<2	<2	0.10	19.5	79.55	8.0	33.55	8.2
I24	08 Oct 2018	1201	6	<20	<2	<2	0.10	19.1	81.85	8.1	33.54	8.2
I24	08 Oct 2018	1201	11	<20	<2	<2	0.10	17.2	61.25	8.1	33.52	8.2
I24	15 Oct 2018	1142	2	20e	2e	<2	0.10	18.7	72.06	8.1	33.54	8.2
I24	15 Oct 2018	1142	6	2e	2e	<2	1.00	17.4	61.95	7.4	33.52	8.1
I24	15 Oct 2018	1142	11	<2	<2	<2	1.00	16.7	54.05	6.5	33.52	8.1
I24	22 Oct 2018	1210	2	<2	<2	<2	1.00	18.7	79.78	7.9	33.61	8.1
I24	22 Oct 2018	1210	6	<2	<2	<2	1.00	17.3	85.51	8.4	33.55	8.2
I24	22 Oct 2018	1210	11	<2	<2	<2	1.00	16.6	69.42	8.3	33.51	8.1
I24	29 Oct 2018	1124	2	<2	<2	<2	1.00	17.5	79.91	7.9	33.54	8.1
I24	29 Oct 2018	1124	6	<2	<2	<2	1.00	15.7	63.91	6.9	33.50	8.0
I24	29 Oct 2018	1124	11	<2	<2	<2	1.00	15.3	70.46	7.0	33.51	8.1
I25	01 Oct 2018	1121	2	<2	<2	<2	1.00	16.5	81.98	8.2	33.55	8.1
I25	01 Oct 2018	1121	6	<2	<2	<2	1.00	15.3	76.89	8.2	33.52	8.1
I25	01 Oct 2018	1121	9	<2	<2	<2	1.00	14.5	66.90	7.5	33.50	8.1
I25	08 Oct 2018	1214	2	<20	<2	<2	0.10	19.5	80.14	8.1	33.55	8.2
I25	08 Oct 2018	1214	6	<20	<2	<2	0.10	19.0	76.57	7.7	33.54	8.2
I25	08 Oct 2018	1214	9	<20	<2	<2	0.10	18.2	59.01	7.5	33.53	8.2

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
I25	15 Oct 2018	1151	2	<20	2e	<2	0.10	18.8	75.80	8.0	33.54	8.2
I25	15 Oct 2018	1151	6	<20	4e	<2	0.20	17.9	74.42	8.2	33.53	8.2
I25	15 Oct 2018	1151	9	12e	4e	<2	0.33	16.9	75.40	7.6	33.53	8.2
I25	22 Oct 2018	1219	2	<2	<2	<2	1.00	18.8	79.51	7.9	33.59	8.1
I25	22 Oct 2018	1219	6	<2	<2	<2	1.00	17.8	85.35	8.3	33.55	8.2
I25	22 Oct 2018	1219	9	<2	<2	<2	1.00	16.8	77.69	8.4	33.52	8.1
I25	29 Oct 2018	1132	2	4e	<2	<20	0.50	17.8	81.08	7.9	33.54	8.1
I25	29 Oct 2018	1132	6	<2	<2	<2	1.00	15.9	72.73	7.1	33.51	8.1
I25	29 Oct 2018	1132	9	2e	<2	<2	1.00	15.5	76.70	7.0	33.51	8.1
I26	01 Oct 2018	1131	2	<2	<2	<2	1.00	17.8	80.54	8.1	33.55	8.1
I26	01 Oct 2018	1131	6	<2	<2	<2	1.00	15.1	82.60	8.2	33.51	8.1
I26	01 Oct 2018	1131	9	<2	<2	<2	1.00	14.6	70.02	7.9	33.48	8.1
I26	08 Oct 2018	1227	2	<20	<2	<2	0.10	19.5	75.84	8.0	33.55	8.2
I26	08 Oct 2018	1227	6	<20	<2	<2	0.10	19.1	76.26	8.1	33.55	8.2
I26	08 Oct 2018	1227	9	<20	<2	<2	0.10	17.9	61.73	7.8	33.53	8.2
I26	15 Oct 2018	1203	2	<20	12e	<2	0.60	19.0	74.15	8.1	33.53	8.2
I26	15 Oct 2018	1203	6	20e	<2	<2	0.10	17.6	74.93	7.9	33.53	8.2
I26	15 Oct 2018	1203	9	<2	<2	<2	1.00	16.6	76.12	7.6	33.52	8.2
I26	22 Oct 2018	1232	2	<2	<2	<2	1.00	18.9	81.66	7.9	33.59	8.2
I26	22 Oct 2018	1232	6	<2	<2	<2	1.00	17.3	78.91	8.2	33.54	8.2
I26	22 Oct 2018	1232	9	<2	<2	<2	1.00	16.6	72.89	8.0	33.52	8.1
I26	29 Oct 2018	1143	2	<2	<2	<2	1.00	17.9	81.38	8.0	33.56	8.1
I26	29 Oct 2018	1143	6	<2	<2	<2	1.00	16.7	81.12	7.8	33.53	8.1
I26	29 Oct 2018	1143	9	2e	<2	<2	1.00	15.6	80.30	7.3	33.52	8.1
I32	01 Oct 2018	1145	2	2e	<2	<2	1.00	17.2	75.61	8.1	33.54	8.1
I32	01 Oct 2018	1145	6	<2	<2	<2	1.00	15.0	79.42	8.1	33.52	8.1
I32	01 Oct 2018	1145	9	<2	<2	2e	1.00	14.7	67.77	7.8	33.49	8.1
I32	08 Oct 2018	1241	2	<20	<2	<2	0.10	19.4	78.64	8.3	33.55	8.2
I32	08 Oct 2018	1241	6	<20	<2	<2	0.10	19.2	69.79	8.2	33.55	8.2
I32	08 Oct 2018	1241	9	<20	<2	<2	0.10	19.0	66.91	8.0	33.54	8.2
I32	15 Oct 2018	1219	2	20e	10e	<2	0.50	18.8	73.16	8.2	33.55	8.2
I32	15 Oct 2018	1219	6	440	82	<2	0.19	17.4	59.51	7.3	33.54	8.2
I32	15 Oct 2018	1219	9	20e	10e	<2	0.50	16.4	62.25	7.0	33.52	8.1
I32	22 Oct 2018	1248	2	<2	<2	<2	1.00	18.9	83.43	8.2	33.58	8.2
I32	22 Oct 2018	1248	6	<2	<2	<2	1.00	18.6	82.80	8.1	33.58	8.2
I32	22 Oct 2018	1248	9	<2	<2	<2	1.00	17.0	70.87	8.2	33.54	8.1
I32	29 Oct 2018	1156	2	<2	<2	<2	1.00	17.6	76.68	8.1	33.54	8.1
I32	29 Oct 2018	1156	6	<2	<2	<2	1.00	16.7	74.05	7.4	33.51	8.1
I32	29 Oct 2018	1156	9	2e	<2	<2	1.00	15.7	69.60	7.0	33.50	8.1
I39	01 Oct 2018	1031	2	<2	<2	<2	1.00	17.7	82.36	8.2	33.58	8.1
I39	01 Oct 2018	1031	12	<2	<2	<2	1.00	14.3	82.53	8.2	33.50	8.1

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
I39	01 Oct 2018	1031	18	<2	<2	<2	1.00	13.8	74.61	7.5	33.50	8.1
I39	08 Oct 2018	1058	2	<2	<2	<2	1.00	19.1	82.54	8.1	33.55	8.2
I39	08 Oct 2018	1058	12	<2	<2	<2	1.00	18.5	83.49	8.2	33.53	8.2
I39	08 Oct 2018	1058	18	2e	<2	<2	1.00	16.8	76.65	8.0	33.52	8.1
I39	15 Oct 2018	1054	2	<2	<2	<2	1.00	18.8	79.40	8.3	33.55	8.2
I39	15 Oct 2018	1054	12	<2	<2	<2	1.00	18.1	79.37	8.2	33.53	8.2
I39	15 Oct 2018	1054	18	<2	<2	<2	1.00	16.4	80.82	7.7	33.51	8.2
I39	22 Oct 2018	1120	2	<2	<2	<2	1.00	18.8	86.06	8.0	33.59	8.2
I39	22 Oct 2018	1120	12	<2	<2	<2	1.00	16.5	82.33	8.2	33.53	8.1
I39	22 Oct 2018	1120	18	<2	<2	<2	1.00	16.1	80.00	8.1	33.52	8.1
I39	29 Oct 2018	1036	2	<2	<2	<2	1.00	17.7	84.17	8.0	33.56	8.1
I39	29 Oct 2018	1036	12	<2	<2	<2	1.00	14.9	84.70	7.7	33.51	8.1
I39	29 Oct 2018	1036	18	<2	<2	<2	1.00	14.6	81.06	7.2	33.52	8.1
I40	01 Oct 2018	1105	2	<2	<2	<2	1.00	16.9	76.54	8.2	33.54	8.1
I40	01 Oct 2018	1105	6	2e	<2	<2	1.00	16.1	72.75	8.2	33.52	8.1
I40	01 Oct 2018	1105	9	<2	<2	<2	1.00	14.5	40.09	7.1	33.51	8.0
I40	08 Oct 2018	1145	2	<20	<2	<2	0.10	19.5	68.99	7.8	33.55	8.2
I40	08 Oct 2018	1145	6	<20	<2	<2	0.10	18.9	76.95	7.8	33.54	8.2
I40	08 Oct 2018	1145	9	<20	<2	<2	0.10	17.4	68.08	8.1	33.52	8.2
I40	15 Oct 2018	1131	2	140e	12e	<2	0.09	18.4	68.73	8.2	33.53	8.2
I40	15 Oct 2018	1131	6	<20	<2	2e	0.10	17.2	58.31	7.5	33.52	8.1
I40	15 Oct 2018	1131	9	<20	<2	<2	0.10	16.7	50.88	6.6	33.52	8.1
I40	22 Oct 2018	1201	2	<2	<2	<2	1.00	18.1	83.20	8.2	33.56	8.2
I40	22 Oct 2018	1201	6	<2	<2	<2	1.00	16.9	81.38	8.4	33.52	8.1
I40	22 Oct 2018	1201	9	<2	<2	<2	1.00	16.8	74.48	8.2	33.52	8.1
I40	29 Oct 2018	1114	2	<2	<2	<2	1.00	17.1	73.36	7.7	33.52	8.1
I40	29 Oct 2018	1114	6	2e	<2	<2	1.00	15.8	66.12	7.0	33.51	8.0
I40	29 Oct 2018	1114	9	2e	<2	<2	1.00	15.6	51.22	6.7	33.51	8.0

ns = not sampled

ND = no data

**Table 3.9**

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

Station	Date	Parameter	Value
I19	01 Oct 2018	Depth (m)	10
I19	01 Oct 2018	Arrive Time	1051
I19	01 Oct 2018	Depart Time	1054
I19	01 Oct 2018	Air Temp (C)	20
I19	01 Oct 2018	Weather	Partly Cloudy
I19	01 Oct 2018	Visibility (mi)	5
I19	01 Oct 2018	Wind Speed (kts)	2
I19	01 Oct 2018	Wind Dir	SW
I19	01 Oct 2018	Water Color	Green
I19	01 Oct 2018	Wave Ht Low (ft)	7
I19	01 Oct 2018	Wave Period (sec)	13
I19	01 Oct 2018	Sea State	Calm
I19	01 Oct 2018	High Tide (ft)	4.92
I19	01 Oct 2018	High Tide Time	1354
I19	01 Oct 2018	Low Tide (ft)	2.7
I19	01 Oct 2018	Low Tide Time	714
I19	01 Oct 2018	Comments	Boats
I19	08 Oct 2018	Depth (m)	12
I19	08 Oct 2018	Arrive Time	1124
I19	08 Oct 2018	Depart Time	1135
I19	08 Oct 2018	Air Temp (C)	19
I19	08 Oct 2018	Weather	Partly Cloudy
I19	08 Oct 2018	Visibility (mi)	5
I19	08 Oct 2018	Wind Speed (kts)	10
I19	08 Oct 2018	Wind Dir	W
I19	08 Oct 2018	Water Color	Brownish-Green
I19	08 Oct 2018	Wave Ht Low (ft)	3
I19	08 Oct 2018	Wave Period (sec)	9
I19	08 Oct 2018	Sea State	Calm
I19	08 Oct 2018	High Tide (ft)	5.83
I19	08 Oct 2018	High Tide Time	909
I19	08 Oct 2018	Low Tide (ft)	0.06
I19	08 Oct 2018	Low Tide Time	1526
I19	08 Oct 2018	Comments	Computer malfunction; CTD data logged internally
I19	15 Oct 2018	Depth (m)	12
I19	15 Oct 2018	Arrive Time	1117
I19	15 Oct 2018	Depart Time	1119
I19	15 Oct 2018	Air Temp (C)	18
I19	15 Oct 2018	Weather	Partly Cloudy
I19	15 Oct 2018	Visibility (mi)	8
I19	15 Oct 2018	Wind Speed (kts)	8
I19	15 Oct 2018	Wind Dir	NW
I19	15 Oct 2018	Water Color	Green
I19	15 Oct 2018	Wave Ht Low (ft)	3
I19	15 Oct 2018	Wave Period (sec)	13
I19	15 Oct 2018	Sea State	Calm
I19	15 Oct 2018	High Tide (ft)	4.3
I19	15 Oct 2018	High Tide Time	1345
I19	15 Oct 2018	Low Tide (ft)	3.12

Station	Date	Parameter	Value
I19	15 Oct 2018	Low Tide Time	732
I19	15 Oct 2018	Comments	none
I19	22 Oct 2018	Depth (m)	11
I19	22 Oct 2018	Arrive Time	1143
I19	22 Oct 2018	Depart Time	1151
I19	22 Oct 2018	Air Temp (C)	18
I19	22 Oct 2018	Weather	Clear
I19	22 Oct 2018	Visibility (mi)	9
I19	22 Oct 2018	Wind Speed (kts)	6
I19	22 Oct 2018	Wind Dir	NW
I19	22 Oct 2018	Water Color	Bluish-Green
I19	22 Oct 2018	Wave Ht Low (ft)	4
I19	22 Oct 2018	Wave Period (sec)	16
I19	22 Oct 2018	Sea State	Wind ripples
I19	22 Oct 2018	High Tide (ft)	5.31
I19	22 Oct 2018	High Tide Time	822
I19	22 Oct 2018	Low Tide (ft)	0.68
I19	22 Oct 2018	Low Tide Time	1440
I19	22 Oct 2018	Comments	none
I19	29 Oct 2018	Depth (m)	12
I19	29 Oct 2018	Arrive Time	1059
I19	29 Oct 2018	Depart Time	1102
I19	29 Oct 2018	Air Temp (C)	18
I19	29 Oct 2018	Weather	Continuous layer of clouds
I19	29 Oct 2018	Visibility (mi)	6
I19	29 Oct 2018	Wind Speed (kts)	5
I19	29 Oct 2018	Wind Dir	SW
I19	29 Oct 2018	Water Color	Green
I19	29 Oct 2018	Wave Ht Low (ft)	1
I19	29 Oct 2018	Wave Period (sec)	16
I19	29 Oct 2018	Sea State	Calm
I19	29 Oct 2018	High Tide (ft)	3.49
I19	29 Oct 2018	High Tide Time	132
I19	29 Oct 2018	Low Tide (ft)	2.56
I19	29 Oct 2018	Low Tide Time	600
I19	29 Oct 2018	Comments	none
I24	01 Oct 2018	Depth (m)	9
I24	01 Oct 2018	Arrive Time	1114
I24	01 Oct 2018	Depart Time	1116
I24	01 Oct 2018	Air Temp (C)	20
I24	01 Oct 2018	Weather	Overcast
I24	01 Oct 2018	Visibility (mi)	7
I24	01 Oct 2018	Wind Speed (kts)	5
I24	01 Oct 2018	Wind Dir	SW
I24	01 Oct 2018	Water Color	Green
I24	01 Oct 2018	Wave Ht Low (ft)	7
I24	01 Oct 2018	Wave Period (sec)	13
I24	01 Oct 2018	Sea State	Calm
I24	01 Oct 2018	High Tide (ft)	4.92
I24	01 Oct 2018	High Tide Time	1354
I24	01 Oct 2018	Low Tide (ft)	2.7
I24	01 Oct 2018	Low Tide Time	714

Station	Date	Parameter	Value
I24	01 Oct 2018	Comments	none
I24	08 Oct 2018	Depth (m)	11
I24	08 Oct 2018	Arrive Time	1201
I24	08 Oct 2018	Depart Time	1212
I24	08 Oct 2018	Air Temp (C)	19
I24	08 Oct 2018	Weather	Partly Cloudy
I24	08 Oct 2018	Visibility (mi)	10
I24	08 Oct 2018	Wind Speed (kts)	10
I24	08 Oct 2018	Wind Dir	W
I24	08 Oct 2018	Water Color	Brownish-Green
I24	08 Oct 2018	Wave Ht Low (ft)	3
I24	08 Oct 2018	Wave Period (sec)	9
I24	08 Oct 2018	Sea State	Calm
I24	08 Oct 2018	High Tide (ft)	5.83
I24	08 Oct 2018	High Tide Time	909
I24	08 Oct 2018	Low Tide (ft)	0.06
I24	08 Oct 2018	Low Tide Time	1526
I24	08 Oct 2018	Comments	Computer malfunction; CTD data logged internally
I24	15 Oct 2018	Depth (m)	11
I24	15 Oct 2018	Arrive Time	1142
I24	15 Oct 2018	Depart Time	1144
I24	15 Oct 2018	Air Temp (C)	19
I24	15 Oct 2018	Weather	Partly Cloudy
I24	15 Oct 2018	Visibility (mi)	8
I24	15 Oct 2018	Wind Speed (kts)	6
I24	15 Oct 2018	Wind Dir	NW
I24	15 Oct 2018	Water Color	Greenish-Blue
I24	15 Oct 2018	Wave Ht Low (ft)	3
I24	15 Oct 2018	Wave Period (sec)	13
I24	15 Oct 2018	Sea State	Calm
I24	15 Oct 2018	High Tide (ft)	4.3
I24	15 Oct 2018	High Tide Time	1345
I24	15 Oct 2018	Low Tide (ft)	3.12
I24	15 Oct 2018	Low Tide Time	732
I24	15 Oct 2018	Comments	none
I24	22 Oct 2018	Depth (m)	11
I24	22 Oct 2018	Arrive Time	1210
I24	22 Oct 2018	Depart Time	1214
I24	22 Oct 2018	Air Temp (C)	18
I24	22 Oct 2018	Weather	Clear
I24	22 Oct 2018	Visibility (mi)	9
I24	22 Oct 2018	Wind Speed (kts)	7
I24	22 Oct 2018	Wind Dir	NW
I24	22 Oct 2018	Water Color	Bluish-Green
I24	22 Oct 2018	Wave Ht Low (ft)	4
I24	22 Oct 2018	Wave Period (sec)	16
I24	22 Oct 2018	Sea State	Wind ripples
I24	22 Oct 2018	High Tide (ft)	5.31
I24	22 Oct 2018	High Tide Time	822
I24	22 Oct 2018	Low Tide (ft)	0.68
I24	22 Oct 2018	Low Tide Time	1440
I24	22 Oct 2018	Comments	none

Station	Date	Parameter	Value
I24	29 Oct 2018	Depth (m)	12
I24	29 Oct 2018	Arrive Time	1124
I24	29 Oct 2018	Depart Time	1128
I24	29 Oct 2018	Air Temp (C)	17
I24	29 Oct 2018	Weather	Continuous layer of clouds
I24	29 Oct 2018	Visibility (mi)	7
I24	29 Oct 2018	Wind Speed (kts)	0
I24	29 Oct 2018	Wind Dir	
I24	29 Oct 2018	Water Color	Green
I24	29 Oct 2018	Wave Ht Low (ft)	1
I24	29 Oct 2018	Wave Period (sec)	16
I24	29 Oct 2018	Sea State	Calm
I24	29 Oct 2018	High Tide (ft)	3.49
I24	29 Oct 2018	High Tide Time	132
I24	29 Oct 2018	Low Tide (ft)	2.56
I24	29 Oct 2018	Low Tide Time	600
I24	29 Oct 2018	Comments	none
I25	01 Oct 2018	Depth (m)	10
I25	01 Oct 2018	Arrive Time	1121
I25	01 Oct 2018	Depart Time	1125
I25	01 Oct 2018	Air Temp (C)	20
I25	01 Oct 2018	Weather	Overcast
I25	01 Oct 2018	Visibility (mi)	7
I25	01 Oct 2018	Wind Speed (kts)	8
I25	01 Oct 2018	Wind Dir	W
I25	01 Oct 2018	Water Color	Green
I25	01 Oct 2018	Wave Ht Low (ft)	9
I25	01 Oct 2018	Wave Period (sec)	13
I25	01 Oct 2018	Sea State	Calm
I25	01 Oct 2018	High Tide (ft)	4.92
I25	01 Oct 2018	High Tide Time	1354
I25	01 Oct 2018	Low Tide (ft)	2.7
I25	01 Oct 2018	Low Tide Time	714
I25	01 Oct 2018	Comments	none
I25	08 Oct 2018	Depth (m)	10
I25	08 Oct 2018	Arrive Time	1214
I25	08 Oct 2018	Depart Time	1220
I25	08 Oct 2018	Air Temp (C)	19
I25	08 Oct 2018	Weather	Partly Cloudy
I25	08 Oct 2018	Visibility (mi)	10
I25	08 Oct 2018	Wind Speed (kts)	9
I25	08 Oct 2018	Wind Dir	SW
I25	08 Oct 2018	Water Color	Brownish-Green
I25	08 Oct 2018	Wave Ht Low (ft)	3
I25	08 Oct 2018	Wave Period (sec)	9
I25	08 Oct 2018	Sea State	Calm
I25	08 Oct 2018	High Tide (ft)	5.83
I25	08 Oct 2018	High Tide Time	909
I25	08 Oct 2018	Low Tide (ft)	0.06
I25	08 Oct 2018	Low Tide Time	1526
I25	08 Oct 2018	Comments	none

Station	Date	Parameter	Value
I25	15 Oct 2018	Depth (m)	10
I25	15 Oct 2018	Arrive Time	1151
I25	15 Oct 2018	Depart Time	1153
I25	15 Oct 2018	Air Temp (C)	19
I25	15 Oct 2018	Weather	Partly Cloudy
I25	15 Oct 2018	Visibility (mi)	8
I25	15 Oct 2018	Wind Speed (kts)	6
I25	15 Oct 2018	Wind Dir	NW
I25	15 Oct 2018	Water Color	Greenish-Blue
I25	15 Oct 2018	Wave Ht Low (ft)	3
I25	15 Oct 2018	Wave Period (sec)	13
I25	15 Oct 2018	Sea State	Calm
I25	15 Oct 2018	High Tide (ft)	4.3
I25	15 Oct 2018	High Tide Time	1345
I25	15 Oct 2018	Low Tide (ft)	3.12
I25	15 Oct 2018	Low Tide Time	732
I25	15 Oct 2018	Comments	none
I25	22 Oct 2018	Depth (m)	9
I25	22 Oct 2018	Arrive Time	1219
I25	22 Oct 2018	Depart Time	1224
I25	22 Oct 2018	Air Temp (C)	18
I25	22 Oct 2018	Weather	Clear
I25	22 Oct 2018	Visibility (mi)	9
I25	22 Oct 2018	Wind Speed (kts)	7
I25	22 Oct 2018	Wind Dir	W
I25	22 Oct 2018	Water Color	Bluish-Green
I25	22 Oct 2018	Wave Ht Low (ft)	4
I25	22 Oct 2018	Wave Period (sec)	16
I25	22 Oct 2018	Sea State	Wind ripples
I25	22 Oct 2018	High Tide (ft)	5.31
I25	22 Oct 2018	High Tide Time	822
I25	22 Oct 2018	Low Tide (ft)	0.68
I25	22 Oct 2018	Low Tide Time	1440
I25	22 Oct 2018	Comments	none
I25	29 Oct 2018	Depth (m)	10
I25	29 Oct 2018	Arrive Time	1132
I25	29 Oct 2018	Depart Time	1135
I25	29 Oct 2018	Air Temp (C)	18
I25	29 Oct 2018	Weather	Partly Cloudy
I25	29 Oct 2018	Visibility (mi)	9
I25	29 Oct 2018	Wind Speed (kts)	4
I25	29 Oct 2018	Wind Dir	SW
I25	29 Oct 2018	Water Color	Green
I25	29 Oct 2018	Wave Ht Low (ft)	1
I25	29 Oct 2018	Wave Period (sec)	16
I25	29 Oct 2018	Sea State	Calm
I25	29 Oct 2018	High Tide (ft)	3.49
I25	29 Oct 2018	High Tide Time	132
I25	29 Oct 2018	Low Tide (ft)	2.56
I25	29 Oct 2018	Low Tide Time	600
I25	29 Oct 2018	Comments	none
I26	01 Oct 2018	Depth (m)	11

Station	Date	Parameter	Value
I26	01 Oct 2018	Arrive Time	1131
I26	01 Oct 2018	Depart Time	1134
I26	01 Oct 2018	Air Temp (C)	20
I26	01 Oct 2018	Weather	Overcast
I26	01 Oct 2018	Visibility (mi)	7
I26	01 Oct 2018	Wind Speed (kts)	3
I26	01 Oct 2018	Wind Dir	SW
I26	01 Oct 2018	Water Color	Green
I26	01 Oct 2018	Wave Ht Low (ft)	9
I26	01 Oct 2018	Wave Period (sec)	13
I26	01 Oct 2018	Sea State	Calm
I26	01 Oct 2018	High Tide (ft)	4.92
I26	01 Oct 2018	High Tide Time	1354
I26	01 Oct 2018	Low Tide (ft)	2.7
I26	01 Oct 2018	Low Tide Time	714
I26	01 Oct 2018	Comments	none
I26	08 Oct 2018	Depth (m)	10
I26	08 Oct 2018	Arrive Time	1227
I26	08 Oct 2018	Depart Time	1241
I26	08 Oct 2018	Air Temp (C)	19
I26	08 Oct 2018	Weather	Haze
I26	08 Oct 2018	Visibility (mi)	10
I26	08 Oct 2018	Wind Speed (kts)	12
I26	08 Oct 2018	Wind Dir	W
I26	08 Oct 2018	Water Color	Brownish-Green
I26	08 Oct 2018	Wave Ht Low (ft)	4
I26	08 Oct 2018	Wave Period (sec)	9
I26	08 Oct 2018	Sea State	Calm
I26	08 Oct 2018	High Tide (ft)	5.83
I26	08 Oct 2018	High Tide Time	909
I26	08 Oct 2018	Low Tide (ft)	0.06
I26	08 Oct 2018	Low Tide Time	1526
I26	08 Oct 2018	Comments	none
I26	15 Oct 2018	Depth (m)	11
I26	15 Oct 2018	Arrive Time	1203
I26	15 Oct 2018	Depart Time	1206
I26	15 Oct 2018	Air Temp (C)	19
I26	15 Oct 2018	Weather	Partly Cloudy
I26	15 Oct 2018	Visibility (mi)	8
I26	15 Oct 2018	Wind Speed (kts)	6
I26	15 Oct 2018	Wind Dir	NW
I26	15 Oct 2018	Water Color	Greenish-Blue
I26	15 Oct 2018	Wave Ht Low (ft)	3
I26	15 Oct 2018	Wave Period (sec)	13
I26	15 Oct 2018	Sea State	Calm
I26	15 Oct 2018	High Tide (ft)	4.3
I26	15 Oct 2018	High Tide Time	1345
I26	15 Oct 2018	Low Tide (ft)	3.12
I26	15 Oct 2018	Low Tide Time	732
I26	15 Oct 2018	Comments	none
I26	22 Oct 2018	Depth (m)	10
I26	22 Oct 2018	Arrive Time	1232

Station	Date	Parameter	Value
I26	22 Oct 2018	Depart Time	1237
I26	22 Oct 2018	Air Temp (C)	18
I26	22 Oct 2018	Weather	Clear
I26	22 Oct 2018	Visibility (mi)	9
I26	22 Oct 2018	Wind Speed (kts)	6
I26	22 Oct 2018	Wind Dir	NW
I26	22 Oct 2018	Water Color	Bluish-Green
I26	22 Oct 2018	Wave Ht Low (ft)	4
I26	22 Oct 2018	Wave Period (sec)	16
I26	22 Oct 2018	Sea State	Wind ripples
I26	22 Oct 2018	High Tide (ft)	5.31
I26	22 Oct 2018	High Tide Time	822
I26	22 Oct 2018	Low Tide (ft)	0.68
I26	22 Oct 2018	Low Tide Time	1440
I26	22 Oct 2018	Comments	none
I26	29 Oct 2018	Depth (m)	11
I26	29 Oct 2018	Arrive Time	1143
I26	29 Oct 2018	Depart Time	1146
I26	29 Oct 2018	Air Temp (C)	17
I26	29 Oct 2018	Weather	Partly Cloudy
I26	29 Oct 2018	Visibility (mi)	9
I26	29 Oct 2018	Wind Speed (kts)	5
I26	29 Oct 2018	Wind Dir	W
I26	29 Oct 2018	Water Color	Green
I26	29 Oct 2018	Wave Ht Low (ft)	1
I26	29 Oct 2018	Wave Period (sec)	16
I26	29 Oct 2018	Sea State	Calm
I26	29 Oct 2018	High Tide (ft)	3.49
I26	29 Oct 2018	High Tide Time	132
I26	29 Oct 2018	Low Tide (ft)	2.56
I26	29 Oct 2018	Low Tide Time	600
I26	29 Oct 2018	Comments	none
I32	01 Oct 2018	Depth (m)	10
I32	01 Oct 2018	Arrive Time	1145
I32	01 Oct 2018	Depart Time	1149
I32	01 Oct 2018	Air Temp (C)	21
I32	01 Oct 2018	Weather	Overcast
I32	01 Oct 2018	Visibility (mi)	7
I32	01 Oct 2018	Wind Speed (kts)	6
I32	01 Oct 2018	Wind Dir	SW
I32	01 Oct 2018	Water Color	Green
I32	01 Oct 2018	Wave Ht Low (ft)	9
I32	01 Oct 2018	Wave Period (sec)	13
I32	01 Oct 2018	Sea State	Calm
I32	01 Oct 2018	High Tide (ft)	4.92
I32	01 Oct 2018	High Tide Time	1354
I32	01 Oct 2018	Low Tide (ft)	2.7
I32	01 Oct 2018	Low Tide Time	714
I32	01 Oct 2018	Comments	none
I32	08 Oct 2018	Depth (m)	10
I32	08 Oct 2018	Arrive Time	1241
I32	08 Oct 2018	Depart Time	1245

Station	Date	Parameter	Value
I32	08 Oct 2018	Air Temp (C)	19
I32	08 Oct 2018	Weather	Haze
I32	08 Oct 2018	Visibility (mi)	10
I32	08 Oct 2018	Wind Speed (kts)	10
I32	08 Oct 2018	Wind Dir	SW
I32	08 Oct 2018	Water Color	Brownish-Green
I32	08 Oct 2018	Wave Ht Low (ft)	4
I32	08 Oct 2018	Wave Period (sec)	9
I32	08 Oct 2018	Sea State	Calm
I32	08 Oct 2018	High Tide (ft)	5.83
I32	08 Oct 2018	High Tide Time	909
I32	08 Oct 2018	Low Tide (ft)	0.06
I32	08 Oct 2018	Low Tide Time	1526
I32	08 Oct 2018	Comments	
I32	15 Oct 2018	Depth (m)	11
I32	15 Oct 2018	Arrive Time	1219
I32	15 Oct 2018	Depart Time	1221
I32	15 Oct 2018	Air Temp (C)	20
I32	15 Oct 2018	Weather	Partly Cloudy
I32	15 Oct 2018	Visibility (mi)	8
I32	15 Oct 2018	Wind Speed (kts)	7
I32	15 Oct 2018	Wind Dir	W
I32	15 Oct 2018	Water Color	Greenish-Blue
I32	15 Oct 2018	Wave Ht Low (ft)	3
I32	15 Oct 2018	Wave Period (sec)	13
I32	15 Oct 2018	Sea State	Calm
I32	15 Oct 2018	High Tide (ft)	4.3
I32	15 Oct 2018	High Tide Time	1345
I32	15 Oct 2018	Low Tide (ft)	3.12
I32	15 Oct 2018	Low Tide Time	732
I32	15 Oct 2018	Comments	none
I32	22 Oct 2018	Depth (m)	11
I32	22 Oct 2018	Arrive Time	1248
I32	22 Oct 2018	Depart Time	1250
I32	22 Oct 2018	Air Temp (C)	18
I32	22 Oct 2018	Weather	Clear
I32	22 Oct 2018	Visibility (mi)	9
I32	22 Oct 2018	Wind Speed (kts)	7
I32	22 Oct 2018	Wind Dir	NW
I32	22 Oct 2018	Water Color	Bluish-Green
I32	22 Oct 2018	Wave Ht Low (ft)	4
I32	22 Oct 2018	Wave Period (sec)	16
I32	22 Oct 2018	Sea State	Wind ripples
I32	22 Oct 2018	High Tide (ft)	5.31
I32	22 Oct 2018	High Tide Time	822
I32	22 Oct 2018	Low Tide (ft)	0.68
I32	22 Oct 2018	Low Tide Time	1440
I32	22 Oct 2018	Comments	none
I32	29 Oct 2018	Depth (m)	11
I32	29 Oct 2018	Arrive Time	1156
I32	29 Oct 2018	Depart Time	1201
I32	29 Oct 2018	Air Temp (C)	17

Station	Date	Parameter	Value
I32	29 Oct 2018	Weather	Partly Cloudy
I32	29 Oct 2018	Visibility (mi)	9
I32	29 Oct 2018	Wind Speed (kts)	5
I32	29 Oct 2018	Wind Dir	W
I32	29 Oct 2018	Water Color	Green
I32	29 Oct 2018	Wave Ht Low (ft)	1
I32	29 Oct 2018	Wave Period (sec)	16
I32	29 Oct 2018	Sea State	Calm
I32	29 Oct 2018	High Tide (ft)	3.49
I32	29 Oct 2018	High Tide Time	132
I32	29 Oct 2018	Low Tide (ft)	2.56
I32	29 Oct 2018	Low Tide Time	600
I32	29 Oct 2018	Comments	none
I39	01 Oct 2018	Depth (m)	19
I39	01 Oct 2018	Arrive Time	1031
I39	01 Oct 2018	Depart Time	1035
I39	01 Oct 2018	Air Temp (C)	20
I39	01 Oct 2018	Weather	Partly Cloudy
I39	01 Oct 2018	Visibility (mi)	5
I39	01 Oct 2018	Wind Speed (kts)	3
I39	01 Oct 2018	Wind Dir	W
I39	01 Oct 2018	Water Color	Green
I39	01 Oct 2018	Wave Ht Low (ft)	7
I39	01 Oct 2018	Wave Period (sec)	13
I39	01 Oct 2018	Sea State	Calm
I39	01 Oct 2018	High Tide (ft)	4.92
I39	01 Oct 2018	High Tide Time	1354
I39	01 Oct 2018	Low Tide (ft)	2.7
I39	01 Oct 2018	Low Tide Time	714
I39	01 Oct 2018	Comments	none
I39	08 Oct 2018	Depth (m)	19
I39	08 Oct 2018	Arrive Time	1058
I39	08 Oct 2018	Depart Time	1100
I39	08 Oct 2018	Air Temp (C)	19
I39	08 Oct 2018	Weather	Haze
I39	08 Oct 2018	Visibility (mi)	10
I39	08 Oct 2018	Wind Speed (kts)	0
I39	08 Oct 2018	Wind Dir	
I39	08 Oct 2018	Water Color	Brownish-Green
I39	08 Oct 2018	Wave Ht Low (ft)	3
I39	08 Oct 2018	Wave Period (sec)	9
I39	08 Oct 2018	Sea State	Calm
I39	08 Oct 2018	High Tide (ft)	5.83
I39	08 Oct 2018	High Tide Time	909
I39	08 Oct 2018	Low Tide (ft)	0.06
I39	08 Oct 2018	Low Tide Time	1526
I39	08 Oct 2018	Comments	Lobster floats
I39	15 Oct 2018	Depth (m)	20
I39	15 Oct 2018	Arrive Time	1054
I39	15 Oct 2018	Depart Time	1057
I39	15 Oct 2018	Air Temp (C)	18
I39	15 Oct 2018	Weather	Partly Cloudy

Station	Date	Parameter	Value
I39	15 Oct 2018	Visibility (mi)	8
I39	15 Oct 2018	Wind Speed (kts)	5
I39	15 Oct 2018	Wind Dir	N
I39	15 Oct 2018	Water Color	Greenish-Blue
I39	15 Oct 2018	Wave Ht Low (ft)	3
I39	15 Oct 2018	Wave Period (sec)	13
I39	15 Oct 2018	Sea State	Calm
I39	15 Oct 2018	High Tide (ft)	4.3
I39	15 Oct 2018	High Tide Time	1345
I39	15 Oct 2018	Low Tide (ft)	3.12
I39	15 Oct 2018	Low Tide Time	732
I39	15 Oct 2018	Comments	Lobster floats
I39	22 Oct 2018	Depth (m)	20
I39	22 Oct 2018	Arrive Time	1120
I39	22 Oct 2018	Depart Time	1126
I39	22 Oct 2018	Air Temp (C)	18
I39	22 Oct 2018	Weather	Clear
I39	22 Oct 2018	Visibility (mi)	9
I39	22 Oct 2018	Wind Speed (kts)	5
I39	22 Oct 2018	Wind Dir	NW
I39	22 Oct 2018	Water Color	Bluish-Green
I39	22 Oct 2018	Wave Ht Low (ft)	4
I39	22 Oct 2018	Wave Period (sec)	16
I39	22 Oct 2018	Sea State	Wind ripples
I39	22 Oct 2018	High Tide (ft)	5.31
I39	22 Oct 2018	High Tide Time	822
I39	22 Oct 2018	Low Tide (ft)	0.68
I39	22 Oct 2018	Low Tide Time	1440
I39	22 Oct 2018	Comments	Boats
I39	29 Oct 2018	Depth (m)	21
I39	29 Oct 2018	Arrive Time	1036
I39	29 Oct 2018	Depart Time	1039
I39	29 Oct 2018	Air Temp (C)	17
I39	29 Oct 2018	Weather	Continuous layer of clouds
I39	29 Oct 2018	Visibility (mi)	6
I39	29 Oct 2018	Wind Speed (kts)	1
I39	29 Oct 2018	Wind Dir	W
I39	29 Oct 2018	Water Color	Bluish-Green
I39	29 Oct 2018	Wave Ht Low (ft)	1
I39	29 Oct 2018	Wave Period (sec)	16
I39	29 Oct 2018	Sea State	Calm
I39	29 Oct 2018	High Tide (ft)	3.49
I39	29 Oct 2018	High Tide Time	132
I39	29 Oct 2018	Low Tide (ft)	2.56
I39	29 Oct 2018	Low Tide Time	600
I39	29 Oct 2018	Comments	none
I40	01 Oct 2018	Depth (m)	10
I40	01 Oct 2018	Arrive Time	1105
I40	01 Oct 2018	Depart Time	1107
I40	01 Oct 2018	Air Temp (C)	20
I40	01 Oct 2018	Weather	Overcast
I40	01 Oct 2018	Visibility (mi)	7

Station	Date	Parameter	Value
I40	01 Oct 2018	Wind Speed (kts)	4
I40	01 Oct 2018	Wind Dir	SW
I40	01 Oct 2018	Water Color	Green
I40	01 Oct 2018	Wave Ht Low (ft)	7
I40	01 Oct 2018	Wave Period (sec)	13
I40	01 Oct 2018	Sea State	Calm
I40	01 Oct 2018	High Tide (ft)	4.92
I40	01 Oct 2018	High Tide Time	1354
I40	01 Oct 2018	Low Tide (ft)	2.7
I40	01 Oct 2018	Low Tide Time	714
I40	01 Oct 2018	Comments	none
I40	08 Oct 2018	Depth (m)	11
I40	08 Oct 2018	Arrive Time	1145
I40	08 Oct 2018	Depart Time	1153
I40	08 Oct 2018	Air Temp (C)	19
I40	08 Oct 2018	Weather	Partly Cloudy
I40	08 Oct 2018	Visibility (mi)	10
I40	08 Oct 2018	Wind Speed (kts)	11
I40	08 Oct 2018	Wind Dir	W
I40	08 Oct 2018	Water Color	Brownish-Green
I40	08 Oct 2018	Wave Ht Low (ft)	3
I40	08 Oct 2018	Wave Period (sec)	9
I40	08 Oct 2018	Sea State	Calm
I40	08 Oct 2018	High Tide (ft)	5.83
I40	08 Oct 2018	High Tide Time	909
I40	08 Oct 2018	Low Tide (ft)	0.06
I40	08 Oct 2018	Low Tide Time	1526
I40	08 Oct 2018	Comments	Computer malfunction; CTD data logged internally
I40	15 Oct 2018	Depth (m)	11
I40	15 Oct 2018	Arrive Time	1131
I40	15 Oct 2018	Depart Time	1134
I40	15 Oct 2018	Air Temp (C)	18
I40	15 Oct 2018	Weather	Partly Cloudy
I40	15 Oct 2018	Visibility (mi)	8
I40	15 Oct 2018	Wind Speed (kts)	6
I40	15 Oct 2018	Wind Dir	W
I40	15 Oct 2018	Water Color	Green
I40	15 Oct 2018	Wave Ht Low (ft)	3
I40	15 Oct 2018	Wave Period (sec)	13
I40	15 Oct 2018	Sea State	Calm
I40	15 Oct 2018	High Tide (ft)	4.3
I40	15 Oct 2018	High Tide Time	1345
I40	15 Oct 2018	Low Tide (ft)	3.12
I40	15 Oct 2018	Low Tide Time	732
I40	15 Oct 2018	Comments	none
I40	22 Oct 2018	Depth (m)	11
I40	22 Oct 2018	Arrive Time	1201
I40	22 Oct 2018	Depart Time	1206
I40	22 Oct 2018	Air Temp (C)	18
I40	22 Oct 2018	Weather	Clear
I40	22 Oct 2018	Visibility (mi)	9
I40	22 Oct 2018	Wind Speed (kts)	7

Station	Date	Parameter	Value
I40	22 Oct 2018	Wind Dir	W
I40	22 Oct 2018	Water Color	Bluish-Green
I40	22 Oct 2018	Wave Ht Low (ft)	4
I40	22 Oct 2018	Wave Period (sec)	16
I40	22 Oct 2018	Sea State	Wind ripples
I40	22 Oct 2018	High Tide (ft)	5.31
I40	22 Oct 2018	High Tide Time	822
I40	22 Oct 2018	Low Tide (ft)	0.68
I40	22 Oct 2018	Low Tide Time	1440
I40	22 Oct 2018	Comments	none
I40	29 Oct 2018	Depth (m)	11
I40	29 Oct 2018	Arrive Time	1114
I40	29 Oct 2018	Depart Time	1116
I40	29 Oct 2018	Air Temp (C)	17
I40	29 Oct 2018	Weather	Continuous layer of clouds
I40	29 Oct 2018	Visibility (mi)	6
I40	29 Oct 2018	Wind Speed (kts)	4
I40	29 Oct 2018	Wind Dir	SW
I40	29 Oct 2018	Water Color	Green
I40	29 Oct 2018	Wave Ht Low (ft)	1
I40	29 Oct 2018	Wave Period (sec)	16
I40	29 Oct 2018	Sea State	Calm
I40	29 Oct 2018	High Tide (ft)	3.49
I40	29 Oct 2018	High Tide Time	132
I40	29 Oct 2018	Low Tide (ft)	2.56
I40	29 Oct 2018	Low Tide Time	600
I40	29 Oct 2018	Comments	none

**Table 3.10**

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I19	01 Oct 2018	1	16.46	76.11	8.2	33.53	8.1	24.5	0.66
I19	01 Oct 2018	2	16.33	75.86	8.1	33.53	8.1	24.5	0.81
I19	01 Oct 2018	3	15.81	75.31	8.2	33.53	8.1	24.7	1.13
I19	01 Oct 2018	4	15.56	75.31	8.3	33.52	8.1	24.7	1.43
I19	01 Oct 2018	5	15.27	75.68	8.3	33.51	8.1	24.8	1.73
I19	01 Oct 2018	6	14.68	76.59	8.3	33.51	8.1	24.9	2.19
I19	01 Oct 2018	7	14.45	77.86	8.2	33.49	8.1	24.9	2.89
I19	01 Oct 2018	8	14.36	76.27	8.0	33.50	8.1	24.9	3.54
I19	01 Oct 2018	9	14.33	71.45	7.9	33.50	8.1	25.0	3.88
I19	01 Oct 2018	10	14.33	66.45	7.8	33.50	8.1	25.0	3.96
I19	08 Oct 2018	1	19.26	73.29	7.9	33.56	8.2	23.9	0.43
I19	08 Oct 2018	2	19.03	73.47	7.8	33.56	8.2	23.9	0.46
I19	08 Oct 2018	3	18.64	71.83	7.9	33.53	8.2	24.0	0.64
I19	08 Oct 2018	4	18.52	70.07	7.9	33.52	8.2	24.0	0.86
I19	08 Oct 2018	5	18.43	68.39	8.0	33.52	8.2	24.0	1.29
I19	08 Oct 2018	6	18.38	68.56	8.0	33.51	8.2	24.0	1.62
I19	08 Oct 2018	7	18.32	70.74	7.9	33.51	8.2	24.1	1.63
I19	08 Oct 2018	8	18.05	68.39	8.0	33.52	8.2	24.1	1.60
I19	08 Oct 2018	9	17.91	72.06	8.2	33.52	8.2	24.2	1.52
I19	08 Oct 2018	10	17.72	74.27	8.1	33.52	8.2	24.2	1.44
I19	15 Oct 2018	1	18.40	68.34	8.6	33.53	8.2	24.1	2.37
I19	15 Oct 2018	2	18.33	67.24	8.4	33.49	8.2	24.0	2.52
I19	15 Oct 2018	3	17.67	67.70	8.2	33.54	8.2	24.2	3.73
I19	15 Oct 2018	4	17.53	67.59	8.2	33.53	8.2	24.3	5.01
I19	15 Oct 2018	5	17.50	67.30	8.1	33.53	8.2	24.3	5.94
I19	15 Oct 2018	6	17.41	67.18	8.0	33.53	8.2	24.3	6.81
I19	15 Oct 2018	7	17.40	67.27	7.9	33.52	8.2	24.3	6.75
I19	15 Oct 2018	8	17.34	66.07	7.8	33.53	8.2	24.3	5.86
I19	15 Oct 2018	9	17.32	65.57	7.8	33.52	8.1	24.3	5.33
I19	15 Oct 2018	10	17.22	64.62	7.6	33.53	8.1	24.3	4.76
I19	22 Oct 2018	1	17.98	75.54	8.1	33.56	8.1	24.2	0.64
I19	22 Oct 2018	2	17.48	74.38	8.2	33.56	8.1	24.3	0.82
I19	22 Oct 2018	3	17.22	72.78	8.2	33.54	8.1	24.3	1.16
I19	22 Oct 2018	4	17.08	69.42	8.1	33.53	8.1	24.4	1.55
I19	22 Oct 2018	5	16.99	69.33	8.1	33.53	8.1	24.4	1.95
I19	22 Oct 2018	6	16.99	68.90	8.1	33.53	8.1	24.4	2.07
I19	22 Oct 2018	7	16.89	69.21	8.1	33.53	8.1	24.4	2.17
I19	22 Oct 2018	8	16.88	69.55	8.1	33.52	8.1	24.4	2.24
I19	22 Oct 2018	9	16.81	69.72	8.0	33.52	8.1	24.4	2.27
I19	22 Oct 2018	10	16.79	69.78	8.1	33.52	8.1	24.4	2.21
I19	29 Oct 2018	1	17.27	75.93	7.9	33.53	8.1	24.3	0.74
I19	29 Oct 2018	2	17.26	75.41	7.9	33.53	8.1	24.3	0.76
I19	29 Oct 2018	3	17.26	74.22	7.8	33.53	8.1	24.3	0.81
I19	29 Oct 2018	4	16.99	74.62	7.6	33.53	8.1	24.4	1.00
I19	29 Oct 2018	5	16.14	73.27	7.3	33.52	8.1	24.6	0.94
I19	29 Oct 2018	6	15.56	74.28	7.1	33.52	8.1	24.7	0.90
I19	29 Oct 2018	7	15.46	70.59	7.0	33.51	8.0	24.7	1.01

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I19	29 Oct 2018	8	15.32	65.92	7.0	33.51	8.0	24.8	1.15
I19	29 Oct 2018	9	15.29	62.14	6.9	33.51	8.0	24.8	1.21
I19	29 Oct 2018	10	15.28	59.98	6.9	33.51	8.0	24.8	1.43
I24	01 Oct 2018	1	17.39	80.42	8.2	33.54	8.1	24.3	0.52
I24	01 Oct 2018	2	16.63	79.20	8.2	33.55	8.1	24.5	0.63
I24	01 Oct 2018	3	16.48	77.25	8.3	33.53	8.1	24.5	0.96
I24	01 Oct 2018	4	16.45	74.28	8.1	33.53	8.1	24.5	1.41
I24	01 Oct 2018	5	15.80	71.92	7.9	33.53	8.1	24.7	2.10
I24	01 Oct 2018	6	14.98	60.94	7.9	33.51	8.1	24.8	3.18
I24	01 Oct 2018	7	14.71	72.10	8.0	33.50	8.1	24.9	3.99
I24	01 Oct 2018	8	14.42	71.29	7.8	33.50	8.1	24.9	4.87
I24	01 Oct 2018	9	14.33	66.47	7.5	33.50	8.1	25.0	5.02
I24	01 Oct 2018	10	14.34	44.66	7.2	33.49	8.0	25.0	4.14
I24	08 Oct 2018	1	19.64	79.57	8.1	33.55	8.2	23.8	0.44
I24	08 Oct 2018	2	19.53	79.55	8.0	33.55	8.2	23.8	0.48
I24	08 Oct 2018	3	19.26	79.59	8.1	33.55	8.2	23.8	0.58
I24	08 Oct 2018	4	19.18	79.83	8.2	33.54	8.2	23.9	0.64
I24	08 Oct 2018	5	19.11	80.96	8.1	33.54	8.2	23.9	0.63
I24	08 Oct 2018	6	19.06	81.85	8.1	33.54	8.2	23.9	0.60
I24	08 Oct 2018	7	18.96	82.68	8.1	33.54	8.2	23.9	0.67
I24	08 Oct 2018	8	18.22	82.40	8.0	33.55	8.2	24.1	0.87
I24	08 Oct 2018	9	17.51	76.44	8.0	33.53	8.2	24.3	1.22
I24	08 Oct 2018	10	17.24	66.53	8.2	33.52	8.2	24.3	1.76
I24	08 Oct 2018	11	17.18	61.25	8.1	33.52	8.2	24.3	1.97
I24	15 Oct 2018	1	18.74	72.03	8.1	33.54	8.2	24.0	1.07
I24	15 Oct 2018	2	18.71	72.06	8.1	33.54	8.2	24.0	1.08
I24	15 Oct 2018	3	18.21	70.84	7.8	33.55	8.2	24.1	1.53
I24	15 Oct 2018	4	17.62	69.00	7.6	33.53	8.2	24.2	2.27
I24	15 Oct 2018	5	17.39	64.24	7.5	33.53	8.2	24.3	2.93
I24	15 Oct 2018	6	17.40	61.95	7.4	33.52	8.1	24.3	3.40
I24	15 Oct 2018	7	17.34	63.08	7.3	33.52	8.1	24.3	3.78
I24	15 Oct 2018	8	17.27	65.08	7.1	33.53	8.1	24.3	3.85
I24	15 Oct 2018	9	16.89	68.82	7.0	33.52	8.1	24.4	2.91
I24	15 Oct 2018	10	16.77	61.40	6.7	33.52	8.1	24.4	1.90
I24	15 Oct 2018	11	16.73	54.05	6.5	33.52	8.1	24.4	1.34
I24	22 Oct 2018	1	19.03	79.36	7.8	33.58	8.1	23.9	0.45
I24	22 Oct 2018	2	18.71	79.78	7.9	33.61	8.1	24.0	0.45
I24	22 Oct 2018	3	18.15	82.87	8.2	33.59	8.2	24.2	0.36
I24	22 Oct 2018	4	17.69	84.28	8.3	33.57	8.2	24.3	0.32
I24	22 Oct 2018	5	17.48	85.00	8.3	33.56	8.2	24.3	0.34
I24	22 Oct 2018	6	17.26	85.51	8.4	33.55	8.2	24.3	0.39
I24	22 Oct 2018	7	17.06	84.85	8.4	33.54	8.2	24.4	0.48
I24	22 Oct 2018	8	16.82	81.82	8.4	33.53	8.2	24.4	0.66
I24	22 Oct 2018	9	16.76	76.22	8.3	33.53	8.2	24.4	1.03
I24	22 Oct 2018	10	16.46	67.61	8.2	33.53	8.1	24.5	1.95
I24	22 Oct 2018	11	16.64	69.42	8.3	33.51	8.1	24.5	2.44
I24	29 Oct 2018	1	17.77	80.10	7.9	33.54	8.1	24.2	0.56
I24	29 Oct 2018	2	17.53	79.91	7.9	33.54	8.1	24.3	0.70
I24	29 Oct 2018	3	17.03	75.37	7.6	33.52	8.1	24.4	0.96
I24	29 Oct 2018	4	16.21	68.91	7.1	33.52	8.1	24.6	0.93

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I24	29 Oct 2018	5	15.87	64.91	6.8	33.51	8.0	24.6	0.83
I24	29 Oct 2018	6	15.67	63.91	6.9	33.50	8.0	24.7	0.97
I24	29 Oct 2018	7	15.51	64.88	7.0	33.50	8.1	24.7	1.02
I24	29 Oct 2018	8	15.42	67.85	7.2	33.51	8.1	24.7	1.06
I24	29 Oct 2018	9	15.36	71.97	7.2	33.51	8.1	24.7	1.12
I24	29 Oct 2018	10	15.33	73.10	7.1	33.51	8.1	24.7	1.10
I24	29 Oct 2018	11	15.31	70.46	7.0	33.51	8.1	24.8	0.98
I25	01 Oct 2018	1	17.18	81.73	8.1	33.57	8.1	24.4	0.76
I25	01 Oct 2018	2	16.48	81.98	8.2	33.55	8.1	24.5	0.64
I25	01 Oct 2018	3	15.67	80.51	8.2	33.55	8.1	24.7	0.80
I25	01 Oct 2018	4	15.40	79.62	8.3	33.53	8.1	24.8	0.97
I25	01 Oct 2018	5	15.32	79.37	8.2	33.52	8.1	24.8	1.30
I25	01 Oct 2018	6	15.29	76.89	8.2	33.52	8.1	24.8	1.71
I25	01 Oct 2018	7	15.12	76.13	7.9	33.52	8.1	24.8	2.09
I25	01 Oct 2018	8	14.51	73.73	7.7	33.52	8.1	24.9	2.27
I25	01 Oct 2018	9	14.48	66.90	7.5	33.50	8.1	24.9	2.04
I25	08 Oct 2018	1	19.60	80.08	8.1	33.55	8.2	23.8	0.52
I25	08 Oct 2018	2	19.54	80.14	8.1	33.55	8.2	23.8	0.55
I25	08 Oct 2018	3	19.31	80.11	8.2	33.55	8.2	23.8	0.57
I25	08 Oct 2018	4	19.17	80.41	8.1	33.55	8.2	23.9	0.62
I25	08 Oct 2018	5	19.11	79.16	8.0	33.54	8.2	23.9	0.68
I25	08 Oct 2018	6	19.03	76.57	7.7	33.54	8.2	23.9	0.72
I25	08 Oct 2018	7	18.75	75.56	7.4	33.54	8.2	24.0	0.80
I25	08 Oct 2018	8	18.33	66.15	7.5	33.54	8.2	24.1	0.89
I25	08 Oct 2018	9	18.24	59.01	7.5	33.53	8.2	24.1	1.04
I25	15 Oct 2018	1	18.86	75.11	8.1	33.54	8.2	23.9	0.71
I25	15 Oct 2018	2	18.75	75.80	8.0	33.54	8.2	24.0	0.78
I25	15 Oct 2018	3	18.14	73.99	8.1	33.54	8.2	24.1	1.66
I25	15 Oct 2018	4	18.02	71.84	8.2	33.53	8.2	24.1	2.60
I25	15 Oct 2018	5	17.98	72.73	8.2	33.53	8.2	24.2	2.93
I25	15 Oct 2018	6	17.89	74.42	8.2	33.53	8.2	24.2	3.07
I25	15 Oct 2018	7	17.77	73.48	8.1	33.53	8.2	24.2	4.20
I25	15 Oct 2018	8	17.61	73.11	7.9	33.53	8.2	24.2	4.30
I25	15 Oct 2018	9	16.92	75.40	7.6	33.53	8.2	24.4	2.95
I25	22 Oct 2018	1	18.97	79.38	7.9	33.59	8.1	23.9	0.39
I25	22 Oct 2018	2	18.84	79.51	7.9	33.59	8.1	24.0	0.42
I25	22 Oct 2018	3	18.29	82.41	8.2	33.57	8.2	24.1	0.39
I25	22 Oct 2018	4	17.95	85.06	8.3	33.56	8.2	24.2	0.40
I25	22 Oct 2018	5	17.89	85.38	8.4	33.56	8.2	24.2	0.49
I25	22 Oct 2018	6	17.83	85.35	8.3	33.55	8.2	24.2	0.55
I25	22 Oct 2018	7	17.35	85.68	8.3	33.55	8.2	24.3	0.57
I25	22 Oct 2018	8	16.87	82.54	8.4	33.53	8.2	24.4	0.73
I25	22 Oct 2018	9	16.81	77.69	8.4	33.52	8.1	24.4	0.89
I25	29 Oct 2018	1	17.84	81.06	8.0	33.55	8.1	24.2	0.61
I25	29 Oct 2018	2	17.77	81.08	7.9	33.54	8.1	24.2	0.67
I25	29 Oct 2018	3	17.09	80.50	7.6	33.54	8.1	24.4	0.85
I25	29 Oct 2018	4	16.43	74.86	7.3	33.52	8.1	24.5	0.95
I25	29 Oct 2018	5	16.03	69.64	7.1	33.52	8.1	24.6	0.96
I25	29 Oct 2018	6	15.89	72.73	7.1	33.51	8.1	24.6	1.06
I25	29 Oct 2018	7	15.84	73.01	7.1	33.51	8.1	24.6	1.13

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I25	29 Oct 2018	8	15.54	74.84	7.1	33.52	8.1	24.7	1.02
I25	29 Oct 2018	9	15.50	76.70	7.0	33.51	8.1	24.7	0.83
I26	01 Oct 2018	1	18.08	79.73	8.2	33.54	8.1	24.1	0.80
I26	01 Oct 2018	2	17.80	80.54	8.1	33.55	8.1	24.2	0.81
I26	01 Oct 2018	3	17.03	79.49	8.1	33.55	8.1	24.4	0.81
I26	01 Oct 2018	4	16.30	80.75	8.2	33.55	8.1	24.6	0.81
I26	01 Oct 2018	5	15.58	82.04	8.2	33.53	8.1	24.7	0.91
I26	01 Oct 2018	6	15.07	82.60	8.2	33.51	8.1	24.8	1.37
I26	01 Oct 2018	7	14.62	79.00	8.1	33.49	8.1	24.9	1.85
I26	01 Oct 2018	8	14.55	71.79	8.0	33.48	8.1	24.9	2.00
I26	01 Oct 2018	9	14.55	70.02	7.9	33.48	8.1	24.9	2.01
I26	08 Oct 2018	1	19.53	75.81	8.0	33.55	8.2	23.8	0.96
I26	08 Oct 2018	2	19.46	75.84	8.0	33.55	8.2	23.8	1.03
I26	08 Oct 2018	3	19.40	75.44	8.0	33.55	8.2	23.8	1.15
I26	08 Oct 2018	4	19.26	75.18	8.0	33.55	8.2	23.8	1.45
I26	08 Oct 2018	5	19.23	75.27	8.0	33.55	8.2	23.9	1.73
I26	08 Oct 2018	6	19.14	76.26	8.1	33.55	8.2	23.9	1.79
I26	08 Oct 2018	7	19.10	75.74	8.1	33.55	8.2	23.9	1.86
I26	08 Oct 2018	8	18.44	72.56	7.9	33.56	8.2	24.1	1.93
I26	08 Oct 2018	9	17.93	61.73	7.8	33.53	8.2	24.2	1.88
I26	15 Oct 2018	1	18.92	73.99	8.2	33.53	8.2	23.9	0.84
I26	15 Oct 2018	2	18.96	74.15	8.1	33.53	8.2	23.9	0.78
I26	15 Oct 2018	3	18.83	74.24	8.0	33.54	8.2	24.0	0.78
I26	15 Oct 2018	4	18.03	75.46	8.1	33.55	8.2	24.2	1.05
I26	15 Oct 2018	5	17.85	76.17	8.1	33.54	8.2	24.2	1.42
I26	15 Oct 2018	6	17.58	74.93	7.9	33.53	8.2	24.2	1.87
I26	15 Oct 2018	7	17.04	73.66	7.8	33.54	8.2	24.4	2.31
I26	15 Oct 2018	8	16.80	75.82	7.8	33.51	8.2	24.4	2.81
I26	15 Oct 2018	9	16.65	76.12	7.6	33.52	8.2	24.5	2.83
I26	22 Oct 2018	1	19.01	81.48	7.9	33.59	8.2	23.9	0.30
I26	22 Oct 2018	2	18.93	81.66	7.9	33.59	8.2	24.0	0.33
I26	22 Oct 2018	3	17.70	83.24	8.3	33.59	8.2	24.3	0.33
I26	22 Oct 2018	4	17.54	84.98	8.3	33.56	8.2	24.3	0.32
I26	22 Oct 2018	5	17.35	81.98	8.3	33.55	8.2	24.3	0.46
I26	22 Oct 2018	6	17.28	78.91	8.2	33.54	8.2	24.3	0.73
I26	22 Oct 2018	7	17.25	78.14	8.1	33.54	8.2	24.3	1.03
I26	22 Oct 2018	8	16.74	76.39	8.0	33.55	8.1	24.5	1.25
I26	22 Oct 2018	9	16.60	72.89	8.0	33.52	8.1	24.5	1.32
I26	29 Oct 2018	1	18.01	80.16	8.0	33.55	8.1	24.2	0.65
I26	29 Oct 2018	2	17.85	81.38	8.0	33.56	8.1	24.2	0.70
I26	29 Oct 2018	3	17.58	80.97	7.9	33.55	8.1	24.3	0.84
I26	29 Oct 2018	4	17.02	78.76	8.0	33.55	8.1	24.4	1.10
I26	29 Oct 2018	5	16.81	80.01	8.0	33.53	8.1	24.4	1.20
I26	29 Oct 2018	6	16.66	81.12	7.8	33.53	8.1	24.5	1.29
I26	29 Oct 2018	7	16.25	81.11	7.7	33.54	8.1	24.6	1.44
I26	29 Oct 2018	8	15.99	80.83	7.5	33.52	8.1	24.6	1.56
I26	29 Oct 2018	9	15.62	80.30	7.3	33.52	8.1	24.7	1.25
I32	01 Oct 2018	1	17.50	75.90	8.2	33.54	8.1	24.3	1.03
I32	01 Oct 2018	2	17.18	75.61	8.1	33.54	8.1	24.4	1.11

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I32	01 Oct 2018	3	16.60	74.65	8.1	33.55	8.1	24.5	1.38
I32	01 Oct 2018	4	16.02	75.58	8.2	33.54	8.1	24.6	1.52
I32	01 Oct 2018	5	15.54	79.35	8.2	33.53	8.1	24.7	1.78
I32	01 Oct 2018	6	15.01	79.42	8.1	33.52	8.1	24.8	2.36
I32	01 Oct 2018	7	14.83	77.53	8.0	33.50	8.1	24.9	2.63
I32	01 Oct 2018	8	14.72	72.12	7.8	33.49	8.1	24.9	2.48
I32	01 Oct 2018	9	14.70	67.77	7.8	33.49	8.1	24.9	2.33
I32	01 Oct 2018	10	14.69	62.92	7.7	33.49	8.1	24.9	2.26
I32	08 Oct 2018	1	19.43	78.68	8.3	33.55	8.2	23.8	0.69
I32	08 Oct 2018	2	19.41	78.64	8.3	33.55	8.2	23.8	0.74
I32	08 Oct 2018	3	19.35	77.08	8.2	33.55	8.2	23.8	0.96
I32	08 Oct 2018	4	19.33	75.73	8.2	33.55	8.2	23.8	1.23
I32	08 Oct 2018	5	19.30	74.21	8.2	33.55	8.2	23.8	1.45
I32	08 Oct 2018	6	19.23	69.79	8.2	33.55	8.2	23.9	1.95
I32	08 Oct 2018	7	19.17	67.72	8.1	33.55	8.2	23.9	2.40
I32	08 Oct 2018	8	19.14	67.33	8.0	33.55	8.2	23.9	2.58
I32	08 Oct 2018	9	18.99	66.91	8.0	33.54	8.2	23.9	2.23
I32	08 Oct 2018	10	18.92	67.49	8.0	33.54	8.2	23.9	1.95
I32	15 Oct 2018	1	19.15	73.40	8.3	33.54	8.2	23.9	1.09
I32	15 Oct 2018	2	18.82	73.16	8.2	33.55	8.2	24.0	1.22
I32	15 Oct 2018	3	18.35	70.01	8.2	33.55	8.2	24.1	2.01
I32	15 Oct 2018	4	18.13	66.12	8.0	33.54	8.2	24.1	2.98
I32	15 Oct 2018	5	17.77	60.95	7.7	33.54	8.2	24.2	3.85
I32	15 Oct 2018	6	17.45	59.51	7.3	33.54	8.2	24.3	3.71
I32	15 Oct 2018	7	16.69	57.81	7.1	33.54	8.1	24.5	3.09
I32	15 Oct 2018	8	16.51	62.39	7.1	33.52	8.1	24.5	2.76
I32	15 Oct 2018	9	16.42	62.25	7.0	33.52	8.1	24.5	2.73
I32	15 Oct 2018	10	16.43	54.00	7.0	33.51	8.1	24.5	2.45
I32	22 Oct 2018	1	18.95	83.29	8.2	33.57	8.2	23.9	0.50
I32	22 Oct 2018	2	18.94	83.43	8.2	33.58	8.2	24.0	0.51
I32	22 Oct 2018	3	18.87	83.52	8.2	33.58	8.2	24.0	0.56
I32	22 Oct 2018	4	18.85	83.55	8.2	33.58	8.2	24.0	0.59
I32	22 Oct 2018	5	18.73	83.41	8.1	33.58	8.2	24.0	0.62
I32	22 Oct 2018	6	18.62	82.80	8.1	33.58	8.2	24.0	0.70
I32	22 Oct 2018	7	18.57	82.03	8.0	33.57	8.2	24.0	0.71
I32	22 Oct 2018	8	17.62	76.59	8.1	33.57	8.2	24.3	0.96
I32	22 Oct 2018	9	16.97	70.87	8.2	33.54	8.1	24.4	1.64
I32	22 Oct 2018	10	16.89	65.86	8.3	33.53	8.1	24.4	2.22
I32	29 Oct 2018	1	17.74	77.09	8.0	33.54	8.1	24.2	0.76
I32	29 Oct 2018	2	17.56	76.68	8.1	33.54	8.1	24.3	0.88
I32	29 Oct 2018	3	17.31	76.03	7.8	33.53	8.1	24.3	1.19
I32	29 Oct 2018	4	17.12	73.56	7.8	33.53	8.1	24.4	1.56
I32	29 Oct 2018	5	16.94	73.56	7.6	33.52	8.1	24.4	1.64
I32	29 Oct 2018	6	16.68	74.05	7.4	33.51	8.1	24.4	1.61
I32	29 Oct 2018	7	16.05	73.27	7.2	33.52	8.1	24.6	1.51
I32	29 Oct 2018	8	15.74	71.54	7.1	33.51	8.1	24.7	1.44
I32	29 Oct 2018	9	15.71	69.60	7.0	33.50	8.1	24.7	1.38
I32	29 Oct 2018	10	15.58	64.85	7.0	33.51	8.1	24.7	1.47
I39	01 Oct 2018	1	17.99	82.31	8.2	33.58	8.1	24.2	0.46
I39	01 Oct 2018	2	17.68	82.36	8.2	33.58	8.1	24.3	0.54

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I39	01 Oct 2018	3	17.53	82.59	8.2	33.58	8.1	24.3	0.65
I39	01 Oct 2018	4	17.30	82.47	8.2	33.58	8.1	24.4	0.73
I39	01 Oct 2018	5	17.13	82.47	8.3	33.57	8.1	24.4	0.79
I39	01 Oct 2018	6	17.00	82.56	8.3	33.57	8.1	24.4	0.83
I39	01 Oct 2018	7	16.79	82.56	8.1	33.55	8.1	24.5	0.78
I39	01 Oct 2018	8	16.09	82.54	8.2	33.54	8.1	24.6	0.83
I39	01 Oct 2018	9	15.25	82.51	8.3	33.53	8.1	24.8	1.02
I39	01 Oct 2018	10	14.96	82.22	8.2	33.52	8.1	24.8	1.35
I39	01 Oct 2018	11	14.63	82.27	8.2	33.51	8.1	24.9	1.82
I39	01 Oct 2018	12	14.35	82.53	8.2	33.50	8.1	25.0	2.16
I39	01 Oct 2018	13	14.13	83.17	8.1	33.49	8.1	25.0	2.09
I39	01 Oct 2018	14	14.06	82.17	7.9	33.49	8.1	25.0	2.10
I39	01 Oct 2018	15	13.98	79.49	7.7	33.49	8.1	25.0	2.04
I39	01 Oct 2018	16	13.88	78.50	7.6	33.50	8.1	25.1	1.77
I39	01 Oct 2018	17	13.83	76.86	7.5	33.50	8.1	25.1	1.57
I39	01 Oct 2018	18	13.82	74.61	7.5	33.50	8.1	25.1	1.39
I39	08 Oct 2018	1	19.38	82.89	8.1	33.54	8.2	23.8	0.49
I39	08 Oct 2018	2	19.11	82.54	8.1	33.55	8.2	23.9	0.55
I39	08 Oct 2018	3	19.02	82.63	8.2	33.54	8.2	23.9	0.64
I39	08 Oct 2018	4	18.97	82.88	8.1	33.54	8.2	23.9	0.68
I39	08 Oct 2018	5	18.92	83.14	8.2	33.54	8.2	23.9	0.73
I39	08 Oct 2018	6	18.89	83.32	8.2	33.54	8.2	23.9	0.79
I39	08 Oct 2018	7	18.83	83.56	8.2	33.54	8.2	23.9	0.86
I39	08 Oct 2018	8	18.80	83.69	8.2	33.54	8.2	24.0	0.92
I39	08 Oct 2018	9	18.80	84.01	8.2	33.54	8.2	24.0	0.91
I39	08 Oct 2018	10	18.75	83.98	8.2	33.53	8.2	24.0	1.05
I39	08 Oct 2018	11	18.59	83.90	8.3	33.53	8.2	24.0	1.18
I39	08 Oct 2018	12	18.47	83.49	8.2	33.53	8.2	24.0	1.36
I39	08 Oct 2018	13	18.16	82.57	8.3	33.53	8.2	24.1	1.64
I39	08 Oct 2018	14	18.00	81.45	8.3	33.53	8.2	24.1	1.91
I39	08 Oct 2018	15	17.93	81.20	8.2	33.52	8.2	24.2	1.89
I39	08 Oct 2018	16	17.61	81.01	8.2	33.52	8.2	24.2	1.80
I39	08 Oct 2018	17	17.11	80.65	8.1	33.53	8.2	24.4	1.41
I39	08 Oct 2018	18	16.76	76.65	8.0	33.52	8.1	24.4	0.97
I39	15 Oct 2018	1	18.82	79.29	8.3	33.55	8.2	24.0	0.57
I39	15 Oct 2018	2	18.81	79.40	8.3	33.55	8.2	24.0	0.59
I39	15 Oct 2018	3	18.68	79.37	8.3	33.55	8.2	24.0	0.72
I39	15 Oct 2018	4	18.63	78.97	8.3	33.55	8.2	24.0	0.92
I39	15 Oct 2018	5	18.62	79.10	8.3	33.54	8.2	24.0	1.18
I39	15 Oct 2018	6	18.58	79.01	8.3	33.55	8.2	24.0	1.47
I39	15 Oct 2018	7	18.54	78.94	8.3	33.54	8.2	24.0	1.96
I39	15 Oct 2018	8	18.52	78.88	8.3	33.54	8.2	24.0	2.20
I39	15 Oct 2018	9	18.47	78.93	8.3	33.54	8.2	24.0	2.39
I39	15 Oct 2018	10	18.44	78.88	8.3	33.54	8.2	24.0	2.48
I39	15 Oct 2018	11	18.30	79.08	8.3	33.54	8.2	24.1	2.69
I39	15 Oct 2018	12	18.09	79.37	8.2	33.53	8.2	24.1	2.82
I39	15 Oct 2018	13	17.43	79.81	8.2	33.53	8.2	24.3	3.00
I39	15 Oct 2018	14	17.29	80.01	8.2	33.52	8.2	24.3	3.15
I39	15 Oct 2018	15	17.20	80.01	8.2	33.51	8.2	24.3	3.19
I39	15 Oct 2018	16	17.08	80.38	8.2	33.51	8.2	24.4	3.23
I39	15 Oct 2018	17	16.74	80.55	7.9	33.52	8.2	24.4	3.38
I39	15 Oct 2018	18	16.36	80.82	7.7	33.51	8.2	24.5	2.94

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I39	22 Oct 2018	1	18.95	85.63	8.1	33.59	8.1	24.0	0.26
I39	22 Oct 2018	2	18.76	86.06	8.0	33.59	8.2	24.0	0.26
I39	22 Oct 2018	3	18.14	86.42	8.1	33.59	8.1	24.2	0.26
I39	22 Oct 2018	4	17.43	86.10	8.2	33.56	8.1	24.3	0.29
I39	22 Oct 2018	5	16.97	85.67	8.3	33.54	8.1	24.4	0.34
I39	22 Oct 2018	6	16.75	85.22	8.3	33.53	8.1	24.4	0.40
I39	22 Oct 2018	7	16.68	85.09	8.3	33.53	8.1	24.5	0.53
I39	22 Oct 2018	8	16.62	84.01	8.3	33.53	8.1	24.5	0.64
I39	22 Oct 2018	9	16.62	83.82	8.3	33.52	8.1	24.5	0.73
I39	22 Oct 2018	10	16.62	83.72	8.2	33.53	8.1	24.5	0.84
I39	22 Oct 2018	11	16.58	82.96	8.2	33.53	8.1	24.5	0.97
I39	22 Oct 2018	12	16.49	82.33	8.2	33.53	8.1	24.5	1.20
I39	22 Oct 2018	13	16.46	82.01	8.2	33.53	8.1	24.5	1.29
I39	22 Oct 2018	14	16.44	81.74	8.2	33.53	8.1	24.5	1.36
I39	22 Oct 2018	15	16.32	81.21	8.1	33.52	8.1	24.5	1.44
I39	22 Oct 2018	16	16.15	80.21	8.1	33.52	8.1	24.6	1.49
I39	22 Oct 2018	17	16.13	80.65	8.1	33.52	8.1	24.6	1.55
I39	22 Oct 2018	18	16.09	80.00	8.1	33.52	8.1	24.6	1.44
I39	29 Oct 2018	1	17.77	84.49	8.1	33.56	8.1	24.2	0.32
I39	29 Oct 2018	2	17.74	84.17	8.0	33.56	8.1	24.2	0.36
I39	29 Oct 2018	3	17.53	84.37	8.0	33.57	8.1	24.3	0.42
I39	29 Oct 2018	4	17.24	83.98	8.0	33.57	8.1	24.4	0.63
I39	29 Oct 2018	5	17.10	83.81	8.0	33.56	8.1	24.4	0.84
I39	29 Oct 2018	6	16.73	83.70	7.9	33.55	8.1	24.5	0.96
I39	29 Oct 2018	7	16.18	84.17	7.8	33.54	8.1	24.6	1.04
I39	29 Oct 2018	8	15.90	83.91	7.8	33.53	8.1	24.6	1.27
I39	29 Oct 2018	9	15.72	83.86	7.8	33.52	8.1	24.7	1.38
I39	29 Oct 2018	10	15.52	84.11	7.8	33.52	8.1	24.7	1.42
I39	29 Oct 2018	11	15.22	84.32	7.8	33.51	8.1	24.8	1.43
I39	29 Oct 2018	12	14.91	84.70	7.7	33.51	8.1	24.8	1.37
I39	29 Oct 2018	13	14.72	84.49	7.5	33.51	8.1	24.9	1.30
I39	29 Oct 2018	14	14.66	84.12	7.4	33.51	8.1	24.9	1.20
I39	29 Oct 2018	15	14.65	83.11	7.4	33.51	8.1	24.9	1.16
I39	29 Oct 2018	16	14.65	82.70	7.4	33.51	8.1	24.9	1.14
I39	29 Oct 2018	17	14.63	82.69	7.3	33.51	8.1	24.9	1.12
I39	29 Oct 2018	18	14.58	81.06	7.2	33.52	8.1	24.9	0.99
I40	01 Oct 2018	1	17.16	76.76	8.2	33.54	8.1	24.4	0.90
I40	01 Oct 2018	2	16.90	76.54	8.2	33.54	8.1	24.4	1.11
I40	01 Oct 2018	3	16.53	74.97	8.3	33.53	8.1	24.5	1.45
I40	01 Oct 2018	4	16.50	73.86	8.2	33.53	8.1	24.5	1.77
I40	01 Oct 2018	5	16.30	73.18	8.2	33.53	8.1	24.5	2.19
I40	01 Oct 2018	6	16.09	72.75	8.2	33.52	8.1	24.6	2.62
I40	01 Oct 2018	7	15.36	70.45	7.9	33.52	8.1	24.8	3.18
I40	01 Oct 2018	8	14.72	59.09	7.4	33.52	8.1	24.9	4.47
I40	01 Oct 2018	9	14.50	40.09	7.1	33.51	8.0	24.9	5.12
I40	08 Oct 2018	1	19.47	69.33	7.8	33.55	8.2	23.8	0.58
I40	08 Oct 2018	2	19.46	68.99	7.8	33.55	8.2	23.8	0.64
I40	08 Oct 2018	3	19.28	66.98	7.8	33.56	8.2	23.8	0.82
I40	08 Oct 2018	4	19.13	65.54	7.8	33.55	8.2	23.9	1.20
I40	08 Oct 2018	5	19.00	67.56	7.8	33.55	8.2	23.9	1.47
I40	08 Oct 2018	6	18.85	76.95	7.8	33.54	8.2	23.9	1.34
I40	08 Oct 2018	7	17.95	71.67	8.1	33.54	8.2	24.2	1.64

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I40	08 Oct 2018	8	17.67	70.84	8.1	33.52	8.2	24.2	1.90
I40	08 Oct 2018	9	17.39	68.08	8.1	33.52	8.2	24.3	1.99
I40	08 Oct 2018	10	17.32	63.31	8.1	33.52	8.2	24.3	2.19
I40	15 Oct 2018	1	18.54	69.10	8.1	33.54	8.2	24.0	1.33
I40	15 Oct 2018	2	18.40	68.73	8.2	33.53	8.2	24.1	1.98
I40	15 Oct 2018	3	18.05	67.45	8.2	33.54	8.2	24.1	3.02
I40	15 Oct 2018	4	17.88	66.39	8.1	33.53	8.2	24.2	4.10
I40	15 Oct 2018	5	17.31	64.24	7.7	33.54	8.2	24.3	4.21
I40	15 Oct 2018	6	17.22	58.31	7.5	33.52	8.1	24.3	4.02
I40	15 Oct 2018	7	16.98	47.37	6.9	33.52	8.1	24.4	4.32
I40	15 Oct 2018	8	16.91	45.08	6.7	33.52	8.1	24.4	4.63
I40	15 Oct 2018	9	16.72	50.88	6.6	33.52	8.1	24.4	4.19
I40	15 Oct 2018	10	16.69	50.77	6.5	33.52	8.1	24.5	3.51
I40	22 Oct 2018	1	18.17	83.14	8.3	33.56	8.2	24.1	0.27
I40	22 Oct 2018	2	18.05	83.20	8.2	33.56	8.2	24.2	0.31
I40	22 Oct 2018	3	17.44	83.10	8.3	33.55	8.2	24.3	0.38
I40	22 Oct 2018	4	17.28	82.47	8.4	33.54	8.2	24.3	0.48
I40	22 Oct 2018	5	17.12	81.61	8.4	33.52	8.1	24.4	0.58
I40	22 Oct 2018	6	16.90	81.38	8.4	33.52	8.1	24.4	0.76
I40	22 Oct 2018	7	16.89	78.61	8.4	33.52	8.1	24.4	1.01
I40	22 Oct 2018	8	16.88	76.65	8.4	33.52	8.1	24.4	1.24
I40	22 Oct 2018	9	16.80	74.48	8.2	33.52	8.1	24.4	1.59
I40	22 Oct 2018	10	16.63	63.99	8.2	33.52	8.1	24.5	2.39
I40	29 Oct 2018	1	17.15	73.67	7.8	33.52	8.1	24.3	0.87
I40	29 Oct 2018	2	17.15	73.36	7.7	33.52	8.1	24.3	0.87
I40	29 Oct 2018	3	16.77	73.27	7.5	33.53	8.1	24.4	1.07
I40	29 Oct 2018	4	16.10	70.53	7.2	33.53	8.1	24.6	1.20
I40	29 Oct 2018	5	15.92	68.85	7.0	33.51	8.1	24.6	1.03
I40	29 Oct 2018	6	15.77	66.12	7.0	33.51	8.0	24.7	1.04
I40	29 Oct 2018	7	15.68	63.31	6.9	33.51	8.0	24.7	1.05
I40	29 Oct 2018	8	15.60	62.82	6.8	33.51	8.0	24.7	1.20
I40	29 Oct 2018	9	15.60	51.22	6.7	33.51	8.0	24.7	1.38
I40	29 Oct 2018	10	15.61	43.72	6.6	33.51	8.0	24.7	1.60

NA = not available

# **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.

<b>Station</b>	<b>Date</b>	<b>Depth</b>	<b>Analyst</b>	<b>Procedure</b>	<b>Total</b>	<b>Fecal</b>	<b>Enter</b>
I19	01 Oct 2018	6	AE	LAB DUPLICATE	ns	ns	<2
I19	01 Oct 2018	6	JT	LAB DUPLICATE	2e	<2	ns
I19	08 Oct 2018	6	AR	LAB DUPLICATE	20e	2e	<2
I19	15 Oct 2018	6	JLT	LAB DUPLICATE	<2	<2	<2
I19	22 Oct 2018	6	JLT	LAB DUPLICATE	<2	<2	<2
I19	29 Oct 2018	6	JT	LAB DUPLICATE	2e	<2	<2
I40	01 Oct 2018	6	AE	LAB DUPLICATE	ns	ns	<2
I40	01 Oct 2018	6	JT	LAB DUPLICATE	<2	<2	ns
I40	08 Oct 2018	6	JLT	LAB DUPLICATE	<2	<2	<2
I40	15 Oct 2018	6	JLT	LAB DUPLICATE	<20	6e	<2
I40	22 Oct 2018	6	JLT	LAB DUPLICATE	<2	<2	<2
I40	29 Oct 2018	6	JT	LAB DUPLICATE	<2	<2	<2
S12	02 Oct 2018		AE	FIELD DUPLICATE	20e	4e	<2
S12	02 Oct 2018		JT	LAB DUPLICATE	20e	2e	2e
S12	09 Oct 2018		LMA	FIELD DUPLICATE	<20	6e	<2
S12	09 Oct 2018		LMA	LAB DUPLICATE	20e	6e	4e
S12	16 Oct 2018		AR	FIELD DUPLICATE	140e	16e	6e
S12	16 Oct 2018		AR	LAB DUPLICATE	40e	6e	2e
S12	23 Oct 2018		AR	FIELD DUPLICATE	<20	12e	6e
S12	23 Oct 2018		AR	LAB DUPLICATE	<20	8e	6e
S12	30 Oct 2018		LMA	FIELD DUPLICATE	<20	<2	<2
S12	30 Oct 2018		LMA	LAB DUPLICATE	<20	<2	<2

ns = not sampled

ND = no data

