

# MONTHLY RECEIVING WATERS MONITORING REPORT FOR THE SOUTH BAY OCEAN OUTFALL

## SOUTH BAY WATER RECLAMATION PLANT

NPDES PERMIT No. CA 0109045  
SDRWQCB Order No. R9-2013-0006

# JULY 2017

Environmental Monitoring and Technical Services  
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August 31, 2017

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 July 2017 Monthly Receiving Waters Monitoring Report for the South Bay Ocean Outfall, South Bay Water Reclamation Plant as required per Order No. R9-2013-0006, 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, 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/gfw

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, NPDES Permit No. CA0109045, for the South Bay Water Reclamation Plant (SBWRP), South Bay Ocean Outfall (SBOO). Order No. R9-2013-0006 superseded Order No. R9-2006-0067 effective April 4, 2013. 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 five 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 of eight scans per second. The data were then

internally averaged using the CTD proprietary software, Seasoftware, 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 chromomorphogenic 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, suspended solids, and oil and grease analyses were typically 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 2017 Quality Assurance Report, which will be completed in March 2018.

## 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 July, each of the eight shore stations located north of the border was in compliance with all California Ocean Plan (Ocean Plan) water-contact standards; these standards do not apply to stations located in Mexican waters.
- 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 stations S0 and S3 on July 25.
- 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 (<https://www.sandiego.gov/mwwd/environment/oceanmonitor/reports>).

- Nothing of sewage origin was observed at any of the shore stations.

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled five times during July (i.e. July 6, 12, 18, 25, 30).
- During July, each of the seven stations was in compliance with all California Ocean Plan (Ocean Plan) water contact standards.
- Water column temperatures ranged from 12.97 to 22.79°C. The difference between surface and bottom waters ranged from approximately 1.04 to 9.16°C, indicating the water column was stratified at each of the sites during the month.
- Chlorophyll *a* concentrations ranged from 0.43 to 20.87 µg/L at these stations, suggesting the presence of phytoplankton blooms during the month.
- Nothing of sewage origin was observed at any of the shore stations.

➤ **Offshore Water Quality Sampling**

- Quarterly sampling was not conducted during July at the offshore stations. The next quarterly sampling is scheduled for August 2017.





# TABLES AND FIGURES



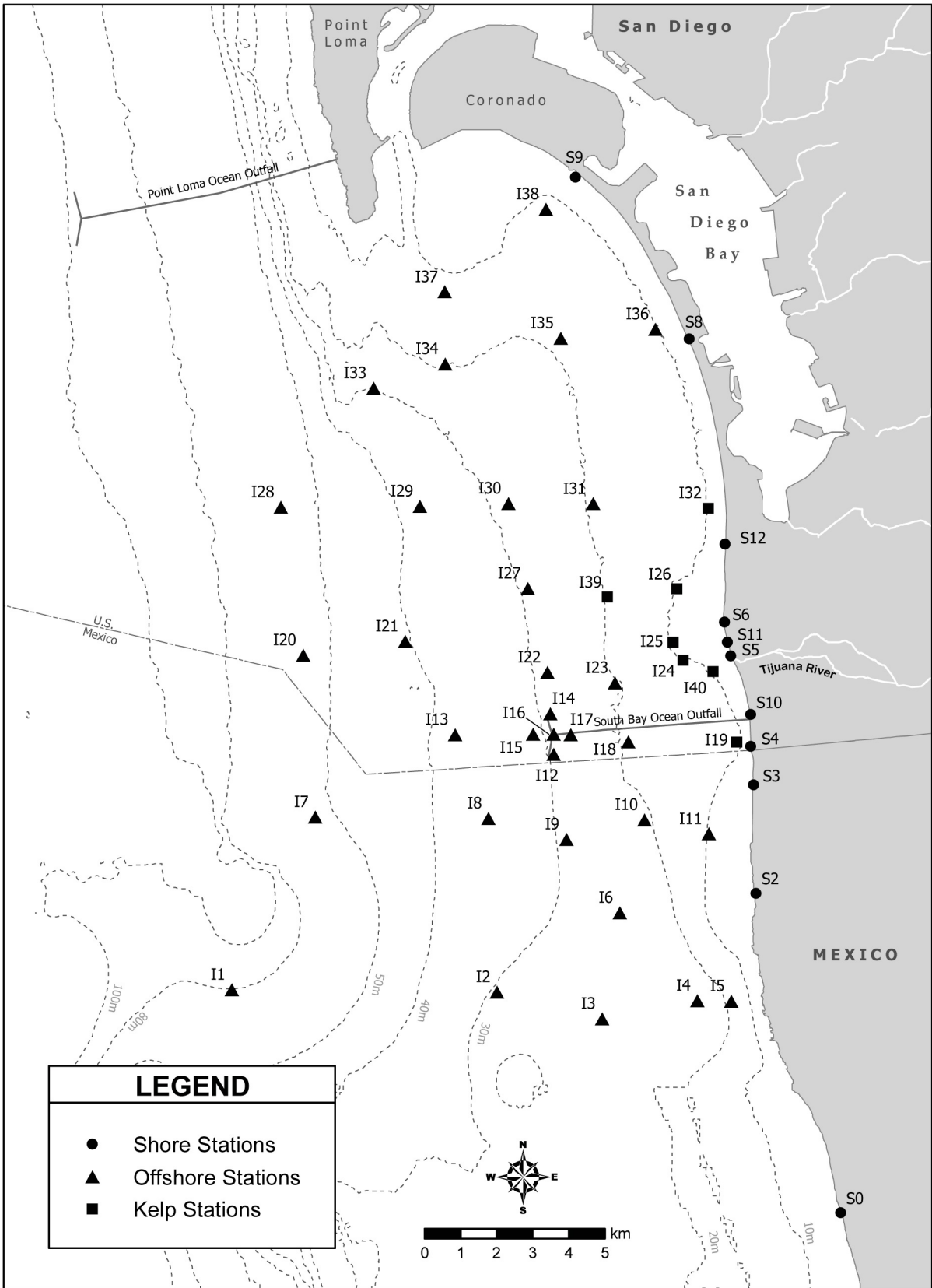


Figure 1.1 Station Map

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# Shore Stations



**Table 2.1**

Summary of compliance with the Ocean Plan's 30-day Geometric Mean standard for 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 Jul 2017	31*	89*	20*	11*	36*	20*	24*	36*
02 Jul 2017	31*	89*	20*	11*	36*	20*	24*	36*
03 Jul 2017	31*	89*	20*	11*	36*	20*	24*	36*
04 Jul 2017	31*	89*	20*	11*	36*	20*	24*	36*
05 Jul 2017	29	66	20	13	32	20	26	32
06 Jul 2017	20*	75*	20*	20*	36*	20*	28*	36*
07 Jul 2017	20*	75*	20*	20*	36*	20*	28*	36*
08 Jul 2017	20*	75*	20*	20*	36*	20*	28*	36*
09 Jul 2017	20*	75*	20*	20*	36*	20*	28*	36*
10 Jul 2017	20*	75*	20*	20*	36*	20*	28*	36*
11 Jul 2017	20	58	20	20	50	25	26	32
12 Jul 2017	20	58	20	20	50	25	26	32
13 Jul 2017	20*	75*	20*	20*	63*	26*	28*	36*
14 Jul 2017	20*	75*	20*	20*	63*	26*	28*	36*
15 Jul 2017	20*	75*	20*	20*	63*	26*	28*	36*
16 Jul 2017	20*	75*	20*	20*	63*	26*	28*	36*
17 Jul 2017	20*	75*	20*	20*	63*	26*	28*	36*
18 Jul 2017	20	66	20	20	80	25	26	32
19 Jul 2017	20	66	20	20	80	25	26	32
20 Jul 2017	20*	50*	20*	20*	112*	26*	28*	20*
21 Jul 2017	20*	50*	20*	20*	112*	26*	28*	20*
22 Jul 2017	20*	50*	20*	20*	112*	26*	28*	20*
23 Jul 2017	20*	50*	20*	20*	112*	26*	28*	20*
24 Jul 2017	20*	50*	20*	20*	112*	26*	28*	20*
25 Jul 2017	32	42	20	20	126	38	26	20
26 Jul 2017	32	42	20	20	126	38	26	20
27 Jul 2017	36*	24*	20*	20*	112*	44*	24*	20*
28 Jul 2017	36*	24*	20*	20*	112*	44*	24*	20*
29 Jul 2017	36*	24*	20*	20*	112*	44*	24*	20*
30 Jul 2017	36*	24*	20*	20*	112*	44*	24*	20*
31 Jul 2017	36*	24*	20*	20*	112*	44*	24*	20*

\* 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 Jul 2017	3*	9*	3*	2*	2*	2*	2*	3*
02 Jul 2017	3*	9*	3*	2*	2*	2*	2*	3*
03 Jul 2017	3*	9*	3*	2*	2*	2*	2*	3*
04 Jul 2017	3*	9*	3*	2*	2*	2*	2*	3*
05 Jul 2017	2	10	2	2	2	2	2	3
06 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
07 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
08 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
09 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
10 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
11 Jul 2017	2	10	2	2	2	2	2	2
12 Jul 2017	2	10	2	2	2	2	2	2
13 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
14 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
15 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
16 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
17 Jul 2017	2*	15*	3*	2*	2*	2*	2*	2*
18 Jul 2017	2	12	2	2	3	2	2	2
19 Jul 2017	2	12	2	2	3	2	2	2
20 Jul 2017	2*	10*	2*	2*	4*	2*	2*	2*
21 Jul 2017	2*	10*	2*	2*	4*	2*	2*	2*
22 Jul 2017	2*	10*	2*	2*	4*	2*	2*	2*
23 Jul 2017	2*	10*	2*	2*	4*	2*	2*	2*
24 Jul 2017	2*	10*	2*	2*	4*	2*	2*	2*
25 Jul 2017	3	7	2	2	3	3	2	3
26 Jul 2017	3	7	2	2	3	3	2	3
27 Jul 2017	3*	4*	2*	2*	4*	3*	3*	2*
28 Jul 2017	3*	4*	2*	2*	4*	3*	3*	2*
29 Jul 2017	3*	4*	2*	2*	4*	3*	3*	2*
30 Jul 2017	3*	4*	2*	2*	4*	3*	3*	2*
31 Jul 2017	3*	4*	2*	2*	4*	3*	3*	2*

\* 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 Jul 2017	4*	6	2*	2*	3*	2*	4*	3*
02 Jul 2017	4*	6	2*	2*	3*	2*	4*	3*
03 Jul 2017	4*	6	2*	2*	3*	2*	4*	3*
04 Jul 2017	4*	6	2*	2*	3*	2*	4*	3*
05 Jul 2017	4	6	2	2	6	2	3	3
06 Jul 2017	3*	6	2*	2*	8*	2*	3*	3*
07 Jul 2017	3*	6	2*	2*	8*	2*	3*	3*
08 Jul 2017	3*	6	2*	2*	8*	2*	3*	3*
09 Jul 2017	3*	6	2*	2*	8*	2*	3*	3*
10 Jul 2017	3*	6	2*	2*	8*	2*	3*	3*
11 Jul 2017	4	5	2	2	6	2	3	3
12 Jul 2017	4	5	2	2	6	2	3	3
13 Jul 2017	4*	6	2*	2*	8*	3*	4*	3*
14 Jul 2017	4*	6	2*	2*	8*	3*	4*	3*
15 Jul 2017	4*	6	2*	2*	8*	3*	4*	3*
16 Jul 2017	4*	6	2*	2*	8*	3*	4*	3*
17 Jul 2017	4*	6	2*	2*	8*	3*	4*	3*
18 Jul 2017	4	5	2	2	7	2	3	3
19 Jul 2017	4	5	2	2	7	2	3	3
20 Jul 2017	4*	6	2*	2*	9*	3*	4*	3*
21 Jul 2017	4*	6	2*	2*	9*	3*	4*	3*
22 Jul 2017	4*	6	2*	2*	9*	3*	4*	3*
23 Jul 2017	4*	6	2*	2*	9*	3*	4*	3*
24 Jul 2017	4*	6	2*	2*	9*	3*	4*	3*
25 Jul 2017	6	6	2	2	8	5	4	3
26 Jul 2017	6	6	2	2	8	5	4	3
27 Jul 2017	6*	3	2*	2*	8*	6*	3*	4*
28 Jul 2017	6*	3	2*	2*	8*	6*	3*	4*
29 Jul 2017	6*	4*	2*	2*	8*	6*	3*	4*
30 Jul 2017	6*	4*	2*	2*	8*	6*	3*	4*
31 Jul 2017	6*	4*	2*	2*	8*	6*	3*	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.

<b>Date</b>	<b>S4</b>	<b>S5</b>	<b>S6</b>	<b>S8</b>	<b>S9</b>	<b>S10</b>	<b>S11</b>	<b>S12</b>
05 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
11 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>S4</b>	<b>S5</b>	<b>S6</b>	<b>S8</b>	<b>S9</b>	<b>S10</b>	<b>S11</b>	<b>S12</b>
05 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
11 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>S4</b>	<b>S5</b>	<b>S6</b>	<b>S8</b>	<b>S9</b>	<b>S10</b>	<b>S11</b>	<b>S12</b>
05 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
11 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>S4</b>	<b>S5</b>	<b>S6</b>	<b>S8</b>	<b>S9</b>	<b>S10</b>	<b>S11</b>	<b>S12</b>
05 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
11 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**Table 2.8**

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

Station	Date	Time	Total	Fecal	Entero	F:T
S0	05 Jul 2017	1135	<20	<2	<2	0.10
S0	11 Jul 2017	1200	<2	<2	<2	1.00
S0	18 Jul 2017	1220	<20	<2	2e	0.10
S0	25 Jul 2017	1135	>16000	1100	5200	0.07
S2	05 Jul 2017	1345	<20	<2	10e	0.10
S2	11 Jul 2017	1130	2e	<2	<2	1.00
S2	18 Jul 2017	1120	12e	<2	<2	0.17
S2	25 Jul 2017	1020	<20	4e	2e	0.20
S3	05 Jul 2017	1255	20e	<2	<2	0.10
S3	11 Jul 2017	1015	20e	<2	2e	0.10
S3	18 Jul 2017	1020	<20	<2	<2	0.10
S3	25 Jul 2017	955	>16000	1800e	180e	0.11
S4	05 Jul 2017	802	<20	<2	4e	0.10
S4	11 Jul 2017	825	20e	<2	6e	0.10
S4	18 Jul 2017	1058	<20	<2	2e	0.10
S4	25 Jul 2017	835	200e	8e	20e	0.04
S5	05 Jul 2017	914	20e	18e	4e	0.90
S5	11 Jul 2017	946	20e	<2	2e	0.10
S5	18 Jul 2017	934	40e	4e	<2	0.10
S5	25 Jul 2017	951	<20	2e	10e	0.10
S6	05 Jul 2017	904	<20	<2	<2	0.10
S6	11 Jul 2017	937	20e	2e	2e	0.10
S6	18 Jul 2017	921	<20	<2	<2	0.10
S6	25 Jul 2017	943	<20	<2	4e	0.10
S8	05 Jul 2017	1047	<20	<2	2e	0.10
S8	11 Jul 2017	1057	<20	<2	<2	0.10
S8	18 Jul 2017	825	<20	<2	<2	0.10
S8	25 Jul 2017	1117	<20	<2	4e	0.10
S9	05 Jul 2017	1138	<20	<2	100e	0.10
S9	11 Jul 2017	1147	<200	<2	<2	0.01
S9	18 Jul 2017	756	<200	<20	4e	0.10
S9	25 Jul 2017	1142	<200	<2	6e	0.01
S10	05 Jul 2017	807	<20	<2	2e	0.10
S10	11 Jul 2017	821	60e	<2	6e	0.03
S10	18 Jul 2017	1106	<20	<2	<2	0.10
S10	25 Jul 2017	839	160e	16e	56	0.10
S11	05 Jul 2017	909	40e	<2	<2	0.05
S11	11 Jul 2017	941	<20	2e	4e	0.10
S11	18 Jul 2017	927	<20	<2	<2	0.10
S11	25 Jul 2017	946	20e	6e	8e	0.30

Station	Date	Time	Total	Fecal	Enteroc	F:T
S12	05 Jul 2017	854	<20	<2	8e	0.10
S12	11 Jul 2017	924	20e	2e	2e	0.10
S12	18 Jul 2017	855	<20	2e	<2	0.10
S12	25 Jul 2017	931	20e	4e	8e	0.20

ns = not sampled

ND = no data

**Table 2.9**

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

Station	Date	Parameter	Value
S0	05 Jul 2017	Arrive Time	1135
S0	05 Jul 2017	Weather	Sunny
S0	05 Jul 2017	Wind Speed (kts)	4
S0	05 Jul 2017	Wind Dir	SW
S0	05 Jul 2017	Animal Life	20 Birds; 6 Dogs
S0	05 Jul 2017	Floatables	None
S0	05 Jul 2017	Water Color	Green
S0	05 Jul 2017	Current Direction	N
S0	05 Jul 2017	Water Temp (C)	18
S0	05 Jul 2017	Wave Height Low (ft)	2
S0	05 Jul 2017	High Tide (ft)	3.5
S0	05 Jul 2017	High Tide Time	827
S0	05 Jul 2017	Low Tide (ft)	1.9
S0	05 Jul 2017	Low Tide Time	1323
S0	05 Jul 2017	Comments	Water turbid; Water flowing from storm drain, 1 L/sec
S0	11 Jul 2017	Arrive Time	1200
S0	11 Jul 2017	Weather	Sunny
S0	11 Jul 2017	Wind Speed (kts)	3.8
S0	11 Jul 2017	Wind Dir	SE
S0	11 Jul 2017	Animal Life	5 Shorebirds
S0	11 Jul 2017	Floatables	None
S0	11 Jul 2017	Water Color	Green
S0	11 Jul 2017	Current Direction	SE
S0	11 Jul 2017	Water Temp (C)	21
S0	11 Jul 2017	Wave Height Low (ft)	3
S0	11 Jul 2017	High Tide (ft)	3.9
S0	11 Jul 2017	High Tide Time	1152
S0	11 Jul 2017	Low Tide (ft)	2.1
S0	11 Jul 2017	Low Tide Time	1655
S0	11 Jul 2017	Comments	Kelp; Water clear; No flow from storm drain
S0	18 Jul 2017	Arrive Time	1220
S0	18 Jul 2017	Weather	Sunny
S0	18 Jul 2017	Wind Speed (kts)	5.3
S0	18 Jul 2017	Wind Dir	NE
S0	18 Jul 2017	Animal Life	4 Birds
S0	18 Jul 2017	Floatables	None
S0	18 Jul 2017	Water Color	Green
S0	18 Jul 2017	Current Direction	N
S0	18 Jul 2017	Water Temp (C)	17
S0	18 Jul 2017	Wave Height Low (ft)	3
S0	18 Jul 2017	High Tide (ft)	5.6
S0	18 Jul 2017	High Tide Time	1739
S0	18 Jul 2017	Low Tide (ft)	1.6
S0	18 Jul 2017	Low Tide Time	1104
S0	18 Jul 2017	Comments	Kelp; 5 Persons; Water clear; No flow from storm drain
S0	25 Jul 2017	Arrive Time	1135
S0	25 Jul 2017	Weather	Foggy
S0	25 Jul 2017	Wind Speed (kts)	3.1



Station	Date	Parameter	Value
S0	25 Jul 2017	Wind Dir	NE
S0	25 Jul 2017	Animal Life	10 Shorebirds
S0	25 Jul 2017	Floatables	None
S0	25 Jul 2017	Water Color	Green
S0	25 Jul 2017	Current Direction	NE
S0	25 Jul 2017	Water Temp (C)	18
S0	25 Jul 2017	Wave Height Low (ft)	3
S0	25 Jul 2017	High Tide (ft)	4.6
S0	25 Jul 2017	High Tide Time	1147
S0	25 Jul 2017	Low Tide (ft)	1.4
S0	25 Jul 2017	Low Tide Time	1717
S0	25 Jul 2017	Comments	Kelp; 3 Persons; Water clear; Water flowing from storm drain 0.5 L/sec
S2	05 Jul 2017	Arrive Time	1345
S2	05 Jul 2017	Weather	Sunny
S2	05 Jul 2017	Wind Speed (kts)	5
S2	05 Jul 2017	Wind Dir	SW
S2	05 Jul 2017	Animal Life	20 Birds; 5 Dogs
S2	05 Jul 2017	Floatables	None
S2	05 Jul 2017	Water Color	Green
S2	05 Jul 2017	Current Direction	N
S2	05 Jul 2017	Water Temp (C)	18
S2	05 Jul 2017	Wave Height Low (ft)	2
S2	05 Jul 2017	High Tide (ft)	3.5
S2	05 Jul 2017	High Tide Time	827
S2	05 Jul 2017	Low Tide (ft)	1.9
S2	05 Jul 2017	Low Tide Time	1323
S2	05 Jul 2017	Comments	Kelp; Water turbid; No flow from storm drain
S2	11 Jul 2017	Arrive Time	1130
S2	11 Jul 2017	Weather	Sunny
S2	11 Jul 2017	Wind Speed (kts)	3.4
S2	11 Jul 2017	Wind Dir	SE
S2	11 Jul 2017	Animal Life	5 Shorebirds
S2	11 Jul 2017	Floatables	None
S2	11 Jul 2017	Water Color	Green
S2	11 Jul 2017	Current Direction	SE
S2	11 Jul 2017	Water Temp (C)	21
S2	11 Jul 2017	Wave Height Low (ft)	3
S2	11 Jul 2017	High Tide (ft)	3.9
S2	11 Jul 2017	High Tide Time	1152
S2	11 Jul 2017	Low Tide (ft)	2.1
S2	11 Jul 2017	Low Tide Time	1655
S2	11 Jul 2017	Comments	Kelp; Water clear; No flow from storm drain
S2	18 Jul 2017	Arrive Time	1120
S2	18 Jul 2017	Weather	Sunny
S2	18 Jul 2017	Wind Speed (kts)	4.9
S2	18 Jul 2017	Wind Dir	NE
S2	18 Jul 2017	Animal Life	10 Birds; 1 Dog
S2	18 Jul 2017	Floatables	None
S2	18 Jul 2017	Water Color	Green
S2	18 Jul 2017	Current Direction	N
S2	18 Jul 2017	Water Temp (C)	17

Station	Date	Parameter	Value
S2	18 Jul 2017	Wave Height Low (ft)	3
S2	18 Jul 2017	High Tide (ft)	3.3
S2	18 Jul 2017	High Tide Time	541
S2	18 Jul 2017	Low Tide (ft)	1.6
S2	18 Jul 2017	Low Tide Time	1104
S2	18 Jul 2017	Comments	Kelp; 10 Persons; Water clear; No flow from storm drain
S2	25 Jul 2017	Arrive Time	1020
S2	25 Jul 2017	Weather	Foggy
S2	25 Jul 2017	Wind Speed (kts)	3.2
S2	25 Jul 2017	Wind Dir	NE
S2	25 Jul 2017	Animal Life	13 Shorebirds
S2	25 Jul 2017	Floatables	None
S2	25 Jul 2017	Water Color	Green
S2	25 Jul 2017	Current Direction	NE
S2	25 Jul 2017	Water Temp (C)	18
S2	25 Jul 2017	Wave Height Low (ft)	3
S2	25 Jul 2017	High Tide (ft)	4.6
S2	25 Jul 2017	High Tide Time	1147
S2	25 Jul 2017	Low Tide (ft)	-1
S2	25 Jul 2017	Low Tide Time	529
S2	25 Jul 2017	Comments	Kelp; 7 Persons; Water clear; No flow from storm drain
S3	05 Jul 2017	Arrive Time	1255
S3	05 Jul 2017	Weather	Sunny
S3	05 Jul 2017	Wind Speed (kts)	5
S3	05 Jul 2017	Wind Dir	SW
S3	05 Jul 2017	Animal Life	5 Birds
S3	05 Jul 2017	Floatables	None
S3	05 Jul 2017	Water Color	Green
S3	05 Jul 2017	Current Direction	N
S3	05 Jul 2017	Water Temp (C)	18
S3	05 Jul 2017	Wave Height Low (ft)	2
S3	05 Jul 2017	High Tide (ft)	3.5
S3	05 Jul 2017	High Tide Time	827
S3	05 Jul 2017	Low Tide (ft)	1.9
S3	05 Jul 2017	Low Tide Time	1323
S3	05 Jul 2017	Comments	Water turbid; No flow from storm drain
S3	11 Jul 2017	Arrive Time	1015
S3	11 Jul 2017	Weather	Sunny
S3	11 Jul 2017	Wind Speed (kts)	3.2
S3	11 Jul 2017	Wind Dir	SE
S3	11 Jul 2017	Animal Life	5 Shorebirds
S3	11 Jul 2017	Floatables	None
S3	11 Jul 2017	Water Color	Green
S3	11 Jul 2017	Current Direction	SE
S3	11 Jul 2017	Water Temp (C)	20
S3	11 Jul 2017	Wave Height Low (ft)	3
S3	11 Jul 2017	High Tide (ft)	3.9
S3	11 Jul 2017	High Tide Time	1152
S3	11 Jul 2017	Low Tide (ft)	-0.4
S3	11 Jul 2017	Low Tide Time	532
S3	11 Jul 2017	Comments	Kelp; Water clear; Water flowing from storm drain 1 L/sec

Station	Date	Parameter	Value
S3	18 Jul 2017	Arrive Time	1020
S3	18 Jul 2017	Weather	Sunny
S3	18 Jul 2017	Wind Speed (kts)	3.8
S3	18 Jul 2017	Wind Dir	NE
S3	18 Jul 2017	Animal Life	5 Birds; 4 Dogs
S3	18 Jul 2017	Floatables	None
S3	18 Jul 2017	Water Color	Green
S3	18 Jul 2017	Current Direction	N
S3	18 Jul 2017	Water Temp (C)	17
S3	18 Jul 2017	Wave Height Low (ft)	3
S3	18 Jul 2017	High Tide (ft)	3.3
S3	18 Jul 2017	High Tide Time	541
S3	18 Jul 2017	Low Tide (ft)	1.6
S3	18 Jul 2017	Low Tide Time	1104
S3	18 Jul 2017	Comments	Kelp; 10 Persons; Water clear; No flow from storm drain
S3	25 Jul 2017	Arrive Time	955
S3	25 Jul 2017	Weather	Foggy
S3	25 Jul 2017	Wind Speed (kts)	2.8
S3	25 Jul 2017	Wind Dir	NE
S3	25 Jul 2017	Animal Life	6 Shorebirds
S3	25 Jul 2017	Floatables	None
S3	25 Jul 2017	Water Color	Green
S3	25 Jul 2017	Current Direction	NE
S3	25 Jul 2017	Water Temp (C)	18
S3	25 Jul 2017	Wave Height Low (ft)	3
S3	25 Jul 2017	High Tide (ft)	4.6
S3	25 Jul 2017	High Tide Time	1147
S3	25 Jul 2017	Low Tide (ft)	-1
S3	25 Jul 2017	Low Tide Time	529
S3	25 Jul 2017	Comments	Kelp; Seagrass; 4 Persons; Water clear; No flow from storm drain
S4	05 Jul 2017	Arrive Time	802
S4	05 Jul 2017	Weather	Partly Cloudy
S4	05 Jul 2017	Wind Speed (kts)	1.3
S4	05 Jul 2017	Wind Dir	W
S4	05 Jul 2017	Animal Life	None
S4	05 Jul 2017	Floatables	None
S4	05 Jul 2017	Water Color	Green
S4	05 Jul 2017	Current Direction	N
S4	05 Jul 2017	Water Temp (C)	15.2
S4	05 Jul 2017	Wave Height Low (ft)	3
S4	05 Jul 2017	High Tide (ft)	3.5
S4	05 Jul 2017	High Tide Time	827
S4	05 Jul 2017	Low Tide (ft)	1.9
S4	05 Jul 2017	Low Tide Time	1323
S4	05 Jul 2017	Comments	Kelp; Seagrass; Debris; Water clear
S4	11 Jul 2017	Arrive Time	825
S4	11 Jul 2017	Weather	Sunny
S4	11 Jul 2017	Wind Speed (kts)	5
S4	11 Jul 2017	Wind Dir	W
S4	11 Jul 2017	Animal Life	None
S4	11 Jul 2017	Floatables	None
S4	11 Jul 2017	Water Color	Green

Station	Date	Parameter	Value
S4	11 Jul 2017	Current Direction	N
S4	11 Jul 2017	Water Temp (C)	18.6
S4	11 Jul 2017	Wave Height Low (ft)	1
S4	11 Jul 2017	High Tide (ft)	3.9
S4	11 Jul 2017	High Tide Time	1152
S4	11 Jul 2017	Low Tide (ft)	-0.4
S4	11 Jul 2017	Low Tide Time	532
S4	11 Jul 2017	Comments	Seagrass; Water clear
S4	18 Jul 2017	Arrive Time	1058
S4	18 Jul 2017	Weather	Sunny
S4	18 Jul 2017	Wind Speed (kts)	4.6
S4	18 Jul 2017	Wind Dir	W
S4	18 Jul 2017	Animal Life	2 Shorebirds
S4	18 Jul 2017	Floatables	None
S4	18 Jul 2017	Water Color	Green
S4	18 Jul 2017	Current Direction	N
S4	18 Jul 2017	Water Temp (C)	22.2
S4	18 Jul 2017	Wave Height Low (ft)	1
S4	18 Jul 2017	High Tide (ft)	3.3
S4	18 Jul 2017	High Tide Time	541
S4	18 Jul 2017	Low Tide (ft)	1.6
S4	18 Jul 2017	Low Tide Time	1104
S4	18 Jul 2017	Comments	Water clear
S4	25 Jul 2017	Arrive Time	835
S4	25 Jul 2017	Weather	Cloudy
S4	25 Jul 2017	Wind Speed (kts)	4.6
S4	25 Jul 2017	Wind Dir	W
S4	25 Jul 2017	Animal Life	30 Shorebirds; 25 Sand Pipers; 20 Seagulls
S4	25 Jul 2017	Floatables	None
S4	25 Jul 2017	Water Color	Green
S4	25 Jul 2017	Current Direction	N
S4	25 Jul 2017	Water Temp (C)	20.4
S4	25 Jul 2017	Wave Height Low (ft)	3
S4	25 Jul 2017	High Tide (ft)	4.6
S4	25 Jul 2017	High Tide Time	1147
S4	25 Jul 2017	Low Tide (ft)	-1
S4	25 Jul 2017	Low Tide Time	529
S4	25 Jul 2017	Comments	Kelp; Seagrass; Water clear
S5	05 Jul 2017	Arrive Time	914
S5	05 Jul 2017	Weather	Partly Cloudy
S5	05 Jul 2017	Wind Speed (kts)	5
S5	05 Jul 2017	Wind Dir	W
S5	05 Jul 2017	Animal Life	None
S5	05 Jul 2017	Floatables	None
S5	05 Jul 2017	Water Color	Green
S5	05 Jul 2017	Current Direction	N
S5	05 Jul 2017	Water Temp (C)	17.7
S5	05 Jul 2017	Wave Height Low (ft)	2
S5	05 Jul 2017	High Tide (ft)	3.5
S5	05 Jul 2017	High Tide Time	827
S5	05 Jul 2017	Low Tide (ft)	1.9
S5	05 Jul 2017	Low Tide Time	1323

Station	Date	Parameter	Value
S5	05 Jul 2017	Comments	Kelp; Seagrass; Debris; Water clear
S5	11 Jul 2017	Arrive Time	946
S5	11 Jul 2017	Weather	Partly Cloudy
S5	11 Jul 2017	Wind Speed (kts)	4.6
S5	11 Jul 2017	Wind Dir	W
S5	11 Jul 2017	Animal Life	None
S5	11 Jul 2017	Floatables	None
S5	11 Jul 2017	Water Color	Green
S5	11 Jul 2017	Current Direction	N
S5	11 Jul 2017	Water Temp (C)	17.9
S5	11 Jul 2017	Wave Height Low (ft)	1
S5	11 Jul 2017	High Tide (ft)	3.9
S5	11 Jul 2017	High Tide Time	1152
S5	11 Jul 2017	Low Tide (ft)	-0.4
S5	11 Jul 2017	Low Tide Time	532
S5	11 Jul 2017	Comments	Kelp; Seagrass; 2 Persons; Water clear
S5	18 Jul 2017	Arrive Time	934
S5	18 Jul 2017	Weather	Partly Cloudy
S5	18 Jul 2017	Wind Speed (kts)	4.4
S5	18 Jul 2017	Wind Dir	W
S5	18 Jul 2017	Animal Life	7 Shorebirds
S5	18 Jul 2017	Floatables	None
S5	18 Jul 2017	Water Color	Green
S5	18 Jul 2017	Current Direction	N
S5	18 Jul 2017	Water Temp (C)	22.4
S5	18 Jul 2017	Wave Height Low (ft)	2.5
S5	18 Jul 2017	High Tide (ft)	3.3
S5	18 Jul 2017	High Tide Time	541
S5	18 Jul 2017	Low Tide (ft)	1.6
S5	18 Jul 2017	Low Tide Time	1104
S5	18 Jul 2017	Comments	Water clear
S5	25 Jul 2017	Arrive Time	951
S5	25 Jul 2017	Weather	Cloudy
S5	25 Jul 2017	Wind Speed (kts)	4.8
S5	25 Jul 2017	Wind Dir	W
S5	25 Jul 2017	Animal Life	None
S5	25 Jul 2017	Floatables	None
S5	25 Jul 2017	Water Color	Green
S5	25 Jul 2017	Current Direction	N
S5	25 Jul 2017	Water Temp (C)	20.4
S5	25 Jul 2017	Wave Height Low (ft)	2
S5	25 Jul 2017	High Tide (ft)	4.6
S5	25 Jul 2017	High Tide Time	1147
S5	25 Jul 2017	Low Tide (ft)	-1
S5	25 Jul 2017	Low Tide Time	529
S5	25 Jul 2017	Comments	Kelp; Seagrass; Water clear
S6	05 Jul 2017	Arrive Time	904
S6	05 Jul 2017	Weather	Partly Cloudy
S6	05 Jul 2017	Wind Speed (kts)	5.4
S6	05 Jul 2017	Wind Dir	W
S6	05 Jul 2017	Animal Life	1 Dog

Station	Date	Parameter	Value
S6	05 Jul 2017	Floatables	None
S6	05 Jul 2017	Water Color	Green
S6	05 Jul 2017	Current Direction	N
S6	05 Jul 2017	Water Temp (C)	17.6
S6	05 Jul 2017	Wave Height Low (ft)	3
S6	05 Jul 2017	High Tide (ft)	3.5
S6	05 Jul 2017	High Tide Time	827
S6	05 Jul 2017	Low Tide (ft)	1.9
S6	05 Jul 2017	Low Tide Time	1323
S6	05 Jul 2017	Comments	Kelp; Seagrass; 2 Persons; 4 Surfers; Water clear
S6	11 Jul 2017	Arrive Time	937
S6	11 Jul 2017	Weather	Partly Cloudy
S6	11 Jul 2017	Wind Speed (kts)	4.6
S6	11 Jul 2017	Wind Dir	W
S6	11 Jul 2017	Animal Life	None
S6	11 Jul 2017	Floatables	None
S6	11 Jul 2017	Water Color	Green
S6	11 Jul 2017	Current Direction	N
S6	11 Jul 2017	Water Temp (C)	17.7
S6	11 Jul 2017	Wave Height Low (ft)	1
S6	11 Jul 2017	High Tide (ft)	3.9
S6	11 Jul 2017	High Tide Time	1152
S6	11 Jul 2017	Low Tide (ft)	-0.4
S6	11 Jul 2017	Low Tide Time	532
S6	11 Jul 2017	Comments	Seagrass; 5 Persons; Water clear
S6	18 Jul 2017	Arrive Time	921
S6	18 Jul 2017	Weather	Partly Cloudy
S6	18 Jul 2017	Wind Speed (kts)	3.4
S6	18 Jul 2017	Wind Dir	W
S6	18 Jul 2017	Animal Life	2 Birds
S6	18 Jul 2017	Floatables	None
S6	18 Jul 2017	Water Color	Green
S6	18 Jul 2017	Current Direction	N
S6	18 Jul 2017	Water Temp (C)	20.9
S6	18 Jul 2017	Wave Height Low (ft)	2
S6	18 Jul 2017	High Tide (ft)	3.3
S6	18 Jul 2017	High Tide Time	541
S6	18 Jul 2017	Low Tide (ft)	1.6
S6	18 Jul 2017	Low Tide Time	1104
S6	18 Jul 2017	Comments	2 Persons; Water clear
S6	25 Jul 2017	Arrive Time	943
S6	25 Jul 2017	Weather	Cloudy
S6	25 Jul 2017	Wind Speed (kts)	6.8
S6	25 Jul 2017	Wind Dir	W
S6	25 Jul 2017	Animal Life	None
S6	25 Jul 2017	Floatables	None
S6	25 Jul 2017	Water Color	Green
S6	25 Jul 2017	Current Direction	N
S6	25 Jul 2017	Water Temp (C)	20.8
S6	25 Jul 2017	Wave Height Low (ft)	3
S6	25 Jul 2017	High Tide (ft)	4.6
S6	25 Jul 2017	High Tide Time	1147

Station	Date	Parameter	Value
S6	25 Jul 2017	Low Tide (ft)	-1
S6	25 Jul 2017	Low Tide Time	529
S6	25 Jul 2017	Comments	Kelp; Seagrass; Water clear
S8	05 Jul 2017	Arrive Time	1047
S8	05 Jul 2017	Weather	Partly Cloudy
S8	05 Jul 2017	Wind Speed (kts)	5.2
S8	05 Jul 2017	Wind Dir	W
S8	05 Jul 2017	Animal Life	None
S8	05 Jul 2017	Floatables	None
S8	05 Jul 2017	Water Color	Green
S8	05 Jul 2017	Current Direction	N
S8	05 Jul 2017	Water Temp (C)	20.2
S8	05 Jul 2017	Wave Height Low (ft)	2
S8	05 Jul 2017	High Tide (ft)	3.5
S8	05 Jul 2017	High Tide Time	827
S8	05 Jul 2017	Low Tide (ft)	1.9
S8	05 Jul 2017	Low Tide Time	1323
S8	05 Jul 2017	Comments	Kelp; Seagrass; 3 Persons; Water clear
S8	11 Jul 2017	Arrive Time	1057
S8	11 Jul 2017	Weather	Sunny
S8	11 Jul 2017	Wind Speed (kts)	4
S8	11 Jul 2017	Wind Dir	W
S8	11 Jul 2017	Animal Life	None
S8	11 Jul 2017	Floatables	None
S8	11 Jul 2017	Water Color	Green
S8	11 Jul 2017	Current Direction	N
S8	11 Jul 2017	Water Temp (C)	19.7
S8	11 Jul 2017	Wave Height Low (ft)	3
S8	11 Jul 2017	High Tide (ft)	3.9
S8	11 Jul 2017	High Tide Time	1152
S8	11 Jul 2017	Low Tide (ft)	-0.4
S8	11 Jul 2017	Low Tide Time	532
S8	11 Jul 2017	Comments	Kelp; 51 Persons; 22 Swimmers; Water clear
S8	18 Jul 2017	Arrive Time	825
S8	18 Jul 2017	Weather	Cloudy
S8	18 Jul 2017	Wind Speed (kts)	2.1
S8	18 Jul 2017	Wind Dir	S
S8	18 Jul 2017	Animal Life	None
S8	18 Jul 2017	Floatables	None
S8	18 Jul 2017	Water Color	Green
S8	18 Jul 2017	Current Direction	N
S8	18 Jul 2017	Water Temp (C)	20.1
S8	18 Jul 2017	Wave Height Low (ft)	0.8
S8	18 Jul 2017	High Tide (ft)	3.3
S8	18 Jul 2017	High Tide Time	541
S8	18 Jul 2017	Low Tide (ft)	1.6
S8	18 Jul 2017	Low Tide Time	1104
S8	18 Jul 2017	Comments	Kelp; 1 Person; Water clear
S8	25 Jul 2017	Arrive Time	1117
S8	25 Jul 2017	Weather	Cloudy
S8	25 Jul 2017	Wind Speed (kts)	6.9

Station	Date	Parameter	Value
S8	25 Jul 2017	Wind Dir	W
S8	25 Jul 2017	Animal Life	None
S8	25 Jul 2017	Floatables	None
S8	25 Jul 2017	Water Color	Green
S8	25 Jul 2017	Current Direction	N
S8	25 Jul 2017	Water Temp (C)	21.9
S8	25 Jul 2017	Wave Height Low (ft)	2
S8	25 Jul 2017	High Tide (ft)	4.6
S8	25 Jul 2017	High Tide Time	1147
S8	25 Jul 2017	Low Tide (ft)	-1
S8	25 Jul 2017	Low Tide Time	529
S8	25 Jul 2017	Comments	Kelp; Seagrass; 9 Persons; 3 Surfers; 3 Swimmers; Water clear
S9	05 Jul 2017	Arrive Time	1138
S9	05 Jul 2017	Weather	Sunny
S9	05 Jul 2017	Wind Speed (kts)	6.2
S9	05 Jul 2017	Wind Dir	W
S9	05 Jul 2017	Animal Life	11 Seagulls
S9	05 Jul 2017	Floatables	None
S9	05 Jul 2017	Water Color	Green
S9	05 Jul 2017	Current Direction	N
S9	05 Jul 2017	Water Temp (C)	21.1
S9	05 Jul 2017	Wave Height Low (ft)	2
S9	05 Jul 2017	High Tide (ft)	3.5
S9	05 Jul 2017	High Tide Time	827
S9	05 Jul 2017	Low Tide (ft)	1.9
S9	05 Jul 2017	Low Tide Time	1323
S9	05 Jul 2017	Comments	Kelp; Seagrass; Algae; 32 Persons; 15 Surfers; Water clear
S9	11 Jul 2017	Arrive Time	1147
S9	11 Jul 2017	Weather	Sunny
S9	11 Jul 2017	Wind Speed (kts)	6.2
S9	11 Jul 2017	Wind Dir	N
S9	11 Jul 2017	Animal Life	None
S9	11 Jul 2017	Floatables	None
S9	11 Jul 2017	Water Color	Green
S9	11 Jul 2017	Current Direction	N
S9	11 Jul 2017	Water Temp (C)	20.2
S9	11 Jul 2017	Wave Height Low (ft)	2
S9	11 Jul 2017	High Tide (ft)	3.9
S9	11 Jul 2017	High Tide Time	1152
S9	11 Jul 2017	Low Tide (ft)	2.1
S9	11 Jul 2017	Low Tide Time	1655
S9	11 Jul 2017	Comments	Seagrass; 60 Persons; 25 Surfers; 4 Swimmers; Water clear
S9	18 Jul 2017	Arrive Time	756
S9	18 Jul 2017	Weather	Cloudy
S9	18 Jul 2017	Wind Speed (kts)	1.9
S9	18 Jul 2017	Wind Dir	N
S9	18 Jul 2017	Animal Life	None
S9	18 Jul 2017	Floatables	None
S9	18 Jul 2017	Water Color	Green
S9	18 Jul 2017	Current Direction	N
S9	18 Jul 2017	Water Temp (C)	19.7
S9	18 Jul 2017	Wave Height Low (ft)	2



Station	Date	Parameter	Value
S9	18 Jul 2017	High Tide (ft)	3.3
S9	18 Jul 2017	High Tide Time	541
S9	18 Jul 2017	Low Tide (ft)	1.6
S9	18 Jul 2017	Low Tide Time	1104
S9	18 Jul 2017	Comments	Kelp; 15 Joggers; 4 Persons; 1 Surfer; Water clear
S9	25 Jul 2017	Arrive Time	1142
S9	25 Jul 2017	Weather	Cloudy
S9	25 Jul 2017	Wind Speed (kts)	6.1
S9	25 Jul 2017	Wind Dir	W
S9	25 Jul 2017	Animal Life	None
S9	25 Jul 2017	Floatables	None
S9	25 Jul 2017	Water Color	Brown
S9	25 Jul 2017	Current Direction	N
S9	25 Jul 2017	Water Temp (C)	20.8
S9	25 Jul 2017	Wave Height Low (ft)	2
S9	25 Jul 2017	High Tide (ft)	4.6
S9	25 Jul 2017	High Tide Time	1147
S9	25 Jul 2017	Low Tide (ft)	1.4
S9	25 Jul 2017	Low Tide Time	1717
S9	25 Jul 2017	Comments	Kelp; Seagrass; 40 Persons; 23 Surfers; 7 Swimmers; Water clear
S10	05 Jul 2017	Arrive Time	807
S10	05 Jul 2017	Weather	Partly Cloudy
S10	05 Jul 2017	Wind Speed (kts)	2.9
S10	05 Jul 2017	Wind Dir	W
S10	05 Jul 2017	Animal Life	None
S10	05 Jul 2017	Floatables	None
S10	05 Jul 2017	Water Color	Green
S10	05 Jul 2017	Current Direction	N
S10	05 Jul 2017	Water Temp (C)	15.8
S10	05 Jul 2017	Wave Height Low (ft)	3
S10	05 Jul 2017	High Tide (ft)	3.5
S10	05 Jul 2017	High Tide Time	827
S10	05 Jul 2017	Low Tide (ft)	1.9
S10	05 Jul 2017	Low Tide Time	1323
S10	05 Jul 2017	Comments	Kelp; Seagrass; Water clear
S10	11 Jul 2017	Arrive Time	821
S10	11 Jul 2017	Weather	Partly Cloudy
S10	11 Jul 2017	Wind Speed (kts)	5.6
S10	11 Jul 2017	Wind Dir	W
S10	11 Jul 2017	Animal Life	None
S10	11 Jul 2017	Floatables	None
S10	11 Jul 2017	Water Color	Green
S10	11 Jul 2017	Current Direction	N
S10	11 Jul 2017	Water Temp (C)	18.4
S10	11 Jul 2017	Wave Height Low (ft)	2
S10	11 Jul 2017	High Tide (ft)	3.9
S10	11 Jul 2017	High Tide Time	1152
S10	11 Jul 2017	Low Tide (ft)	-0.4
S10	11 Jul 2017	Low Tide Time	532
S10	11 Jul 2017	Comments	Seagrass; Water clear
S10	18 Jul 2017	Arrive Time	1106

Station	Date	Parameter	Value
S10	18 Jul 2017	Weather	Sunny
S10	18 Jul 2017	Wind Speed (kts)	6.2
S10	18 Jul 2017	Wind Dir	W
S10	18 Jul 2017	Animal Life	None
S10	18 Jul 2017	Floatables	Balloon
S10	18 Jul 2017	Water Color	Green
S10	18 Jul 2017	Current Direction	N
S10	18 Jul 2017	Water Temp (C)	18.3
S10	18 Jul 2017	Wave Height Low (ft)	2
S10	18 Jul 2017	High Tide (ft)	3.3
S10	18 Jul 2017	High Tide Time	541
S10	18 Jul 2017	Low Tide (ft)	1.6
S10	18 Jul 2017	Low Tide Time	1104
S10	18 Jul 2017	Comments	Water clear
S10	25 Jul 2017	Arrive Time	839
S10	25 Jul 2017	Weather	Cloudy
S10	25 Jul 2017	Wind Speed (kts)	4.4
S10	25 Jul 2017	Wind Dir	W
S10	25 Jul 2017	Animal Life	None
S10	25 Jul 2017	Floatables	None
S10	25 Jul 2017	Water Color	Green
S10	25 Jul 2017	Current Direction	N
S10	25 Jul 2017	Water Temp (C)	20.2
S10	25 Jul 2017	Wave Height Low (ft)	2
S10	25 Jul 2017	High Tide (ft)	4.6
S10	25 Jul 2017	High Tide Time	1147
S10	25 Jul 2017	Low Tide (ft)	-1
S10	25 Jul 2017	Low Tide Time	529
S10	25 Jul 2017	Comments	Kelp; Seagrass; Water clear
S11	05 Jul 2017	Arrive Time	909
S11	05 Jul 2017	Weather	Partly Cloudy
S11	05 Jul 2017	Wind Speed (kts)	6
S11	05 Jul 2017	Wind Dir	SW
S11	05 Jul 2017	Animal Life	None
S11	05 Jul 2017	Floatables	None
S11	05 Jul 2017	Water Color	Green
S11	05 Jul 2017	Current Direction	N
S11	05 Jul 2017	Water Temp (C)	17.6
S11	05 Jul 2017	Wave Height Low (ft)	3
S11	05 Jul 2017	High Tide (ft)	3.5
S11	05 Jul 2017	High Tide Time	827
S11	05 Jul 2017	Low Tide (ft)	1.9
S11	05 Jul 2017	Low Tide Time	1323
S11	05 Jul 2017	Comments	Kelp; Seagrass; Water clear
S11	11 Jul 2017	Arrive Time	941
S11	11 Jul 2017	Weather	Partly Cloudy
S11	11 Jul 2017	Wind Speed (kts)	3.4
S11	11 Jul 2017	Wind Dir	NW
S11	11 Jul 2017	Animal Life	None
S11	11 Jul 2017	Floatables	None
S11	11 Jul 2017	Water Color	Green
S11	11 Jul 2017	Current Direction	N

Station	Date	Parameter	Value
S11	11 Jul 2017	Water Temp (C)	18
S11	11 Jul 2017	Wave Height Low (ft)	1
S11	11 Jul 2017	High Tide (ft)	3.9
S11	11 Jul 2017	High Tide Time	1152
S11	11 Jul 2017	Low Tide (ft)	-0.4
S11	11 Jul 2017	Low Tide Time	532
S11	11 Jul 2017	Comments	Seagrass; 1 Person; Water clear
S11	18 Jul 2017	Arrive Time	927
S11	18 Jul 2017	Weather	Partly Cloudy
S11	18 Jul 2017	Wind Speed (kts)	3.4
S11	18 Jul 2017	Wind Dir	W
S11	18 Jul 2017	Animal Life	1 Bird
S11	18 Jul 2017	Floatables	None
S11	18 Jul 2017	Water Color	Green
S11	18 Jul 2017	Current Direction	N
S11	18 Jul 2017	Water Temp (C)	19.7
S11	18 Jul 2017	Wave Height Low (ft)	2
S11	18 Jul 2017	High Tide (ft)	3.3
S11	18 Jul 2017	High Tide Time	541
S11	18 Jul 2017	Low Tide (ft)	1.6
S11	18 Jul 2017	Low Tide Time	1104
S11	18 Jul 2017	Comments	Water clear
S11	25 Jul 2017	Arrive Time	946
S11	25 Jul 2017	Weather	Cloudy
S11	25 Jul 2017	Wind Speed (kts)	6.6
S11	25 Jul 2017	Wind Dir	W
S11	25 Jul 2017	Animal Life	20 Shorebirds; 20 Sand Pipers; 5 Seagulls
S11	25 Jul 2017	Floatables	None
S11	25 Jul 2017	Water Color	Green
S11	25 Jul 2017	Current Direction	N
S11	25 Jul 2017	Water Temp (C)	20.4
S11	25 Jul 2017	Wave Height Low (ft)	2
S11	25 Jul 2017	High Tide (ft)	4.6
S11	25 Jul 2017	High Tide Time	1147
S11	25 Jul 2017	Low Tide (ft)	-1
S11	25 Jul 2017	Low Tide Time	529
S11	25 Jul 2017	Comments	Kelp; Seagrass; Water clear
S12	05 Jul 2017	Arrive Time	854
S12	05 Jul 2017	Weather	Partly Cloudy
S12	05 Jul 2017	Wind Speed (kts)	1.5
S12	05 Jul 2017	Wind Dir	W
S12	05 Jul 2017	Animal Life	None
S12	05 Jul 2017	Floatables	None
S12	05 Jul 2017	Water Color	Green
S12	05 Jul 2017	Current Direction	N
S12	05 Jul 2017	Water Temp (C)	17.8
S12	05 Jul 2017	Wave Height Low (ft)	3
S12	05 Jul 2017	High Tide (ft)	3.5
S12	05 Jul 2017	High Tide Time	827
S12	05 Jul 2017	Low Tide (ft)	1.9
S12	05 Jul 2017	Low Tide Time	1323
S12	05 Jul 2017	Comments	Kelp; Seagrass; Water clear

Station	Date	Parameter	Value
S12	11 Jul 2017	Arrive Time	924
S12	11 Jul 2017	Weather	Partly Cloudy
S12	11 Jul 2017	Wind Speed (kts)	4
S12	11 Jul 2017	Wind Dir	W
S12	11 Jul 2017	Animal Life	None
S12	11 Jul 2017	Floatables	None
S12	11 Jul 2017	Water Color	Green
S12	11 Jul 2017	Current Direction	N
S12	11 Jul 2017	Water Temp (C)	18
S12	11 Jul 2017	Wave Height Low (ft)	1
S12	11 Jul 2017	High Tide (ft)	3.9
S12	11 Jul 2017	High Tide Time	1152
S12	11 Jul 2017	Low Tide (ft)	-0.4
S12	11 Jul 2017	Low Tide Time	532
S12	11 Jul 2017	Comments	Seagrass; 2 Persons; 4 Swimmers; Water clear
S12	18 Jul 2017	Arrive Time	855
S12	18 Jul 2017	Weather	Cloudy
S12	18 Jul 2017	Wind Speed (kts)	2.5
S12	18 Jul 2017	Wind Dir	SW
S12	18 Jul 2017	Animal Life	1 Bird
S12	18 Jul 2017	Floatables	None
S12	18 Jul 2017	Water Color	Green
S12	18 Jul 2017	Current Direction	N
S12	18 Jul 2017	Water Temp (C)	19.1
S12	18 Jul 2017	Wave Height Low (ft)	0.5
S12	18 Jul 2017	High Tide (ft)	3.3
S12	18 Jul 2017	High Tide Time	541
S12	18 Jul 2017	Low Tide (ft)	1.6
S12	18 Jul 2017	Low Tide Time	1104
S12	18 Jul 2017	Comments	4 Persons; Water clear
S12	25 Jul 2017	Arrive Time	931
S12	25 Jul 2017	Weather	Cloudy
S12	25 Jul 2017	Wind Speed (kts)	4.8
S12	25 Jul 2017	Wind Dir	W
S12	25 Jul 2017	Animal Life	None
S12	25 Jul 2017	Floatables	None
S12	25 Jul 2017	Water Color	Green
S12	25 Jul 2017	Current Direction	N
S12	25 Jul 2017	Water Temp (C)	20.2
S12	25 Jul 2017	Wave Height Low (ft)	2
S12	25 Jul 2017	High Tide (ft)	4.6
S12	25 Jul 2017	High Tide Time	1147
S12	25 Jul 2017	Low Tide (ft)	-1
S12	25 Jul 2017	Low Tide Time	529
S12	25 Jul 2017	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.

<b>Date</b>	<b>I19</b>	<b>I24</b>	<b>I25</b>	<b>I26</b>	<b>I32</b>	<b>I39</b>	<b>I40</b>
01 Jul 2017	12	5	5	5	9	4	10
02 Jul 2017	12	5	5	5	9	4	10
03 Jul 2017	11*	4*	4*	3*	8*	3*	9*
04 Jul 2017	11*	4*	4*	3*	8*	3*	9*
05 Jul 2017	11*	4*	4*	3*	8*	3*	9*
06 Jul 2017	11	4	4	3	8	2	10
07 Jul 2017	9*	3*	4*	3*	8*	3*	9*
08 Jul 2017	9*	3*	4*	3*	8*	3*	9*
09 Jul 2017	9*	3*	4*	3*	8*	3*	9*
10 Jul 2017	9*	3*	4*	3*	8*	3*	9*
11 Jul 2017	9*	3*	4*	3*	8*	3*	9*
12 Jul 2017	9	4	5	4	8	4	10
13 Jul 2017	9*	3*	6*	3*	6*	4*	9*
14 Jul 2017	9*	3*	6*	3*	6*	4*	9*
15 Jul 2017	9*	3*	6*	3*	6*	4*	9*
16 Jul 2017	9*	3*	6*	3*	6*	4*	9*
17 Jul 2017	9*	3*	6*	3*	6*	4*	9*
18 Jul 2017	15*	3*	6*	3*	9*	4*	15*
19 Jul 2017	15*	3*	6*	3*	9*	4*	15*
20 Jul 2017	15*	3*	6*	3*	9*	4*	15*
21 Jul 2017	15*	3*	6*	3*	9*	4*	15*
22 Jul 2017	15*	3*	6*	3*	9*	4*	15*
23 Jul 2017	15*	3*	6*	3*	9*	4*	15*
24 Jul 2017	15*	3*	6*	3*	9*	4*	15*
25 Jul 2017	16	4	5	3	10	4	13
26 Jul 2017	16	4	5	3	10	4	13
27 Jul 2017	16	4	5	3	10	4	13
28 Jul 2017	16	4	5	3	10	4	13
29 Jul 2017	17*	4*	4*	3*	11*	3*	13*
30 Jul 2017	16	4	4	3	8	3	12
31 Jul 2017	16	4	4	3	8	3	12

\* 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 Jul 2017	3	2	2	2	2	2	2
02 Jul 2017	3	2	2	2	2	2	2
03 Jul 2017	3*	2*	2*	2*	2*	2*	2*
04 Jul 2017	3*	2*	2*	2*	2*	2*	2*
05 Jul 2017	3*	2*	2*	2*	2*	2*	2*
06 Jul 2017	3	2	2	2	2	2	2
07 Jul 2017	2*	2*	2*	2*	2*	2*	2*
08 Jul 2017	2*	2*	2*	2*	2*	2*	2*
09 Jul 2017	2*	2*	2*	2*	2*	2*	2*
10 Jul 2017	2*	2*	2*	2*	2*	2*	2*
11 Jul 2017	2*	2*	2*	2*	2*	2*	2*
12 Jul 2017	2	2	2	2	2	2	2
13 Jul 2017	2*	2*	2*	2*	2*	2*	2*
14 Jul 2017	2*	2*	2*	2*	2*	2*	2*
15 Jul 2017	2*	2*	2*	2*	2*	2*	2*
16 Jul 2017	2*	2*	2*	2*	2*	2*	2*
17 Jul 2017	2*	2*	2*	2*	2*	2*	2*
18 Jul 2017	2*	2*	2*	2*	2*	2*	2*
19 Jul 2017	2*	2*	2*	2*	2*	2*	2*
20 Jul 2017	2*	2*	2*	2*	2*	2*	2*
21 Jul 2017	2*	2*	2*	2*	2*	2*	2*
22 Jul 2017	2*	2*	2*	2*	2*	2*	2*
23 Jul 2017	2*	2*	2*	2*	2*	2*	2*
24 Jul 2017	2*	2*	2*	2*	2*	2*	2*
25 Jul 2017	2	2	2	2	2	2	2
26 Jul 2017	2	2	2	2	2	2	2
27 Jul 2017	2	2	2	2	2	2	2
28 Jul 2017	2	2	2	2	2	2	2
29 Jul 2017	2*	2*	2*	2*	2*	2*	2*
30 Jul 2017	2	2	2	2	2	2	2
31 Jul 2017	2	2	2	2	2	2	2

\* Geometric mean calculated using n<5



**Table 3.3**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Jul 2017	5	2	2	2	2	2	2
02 Jul 2017	5	2	2	2	2	2	2
03 Jul 2017	5*	2*	2*	2*	2*	2*	2*
04 Jul 2017	5*	2*	2*	2*	2*	2*	2*
05 Jul 2017	5*	2*	2*	2*	2*	2*	2*
06 Jul 2017	4	2	2	2	2	2	2
07 Jul 2017	4*	2*	2*	2*	2*	2*	2*
08 Jul 2017	4*	2*	2*	2*	2*	2*	2*
09 Jul 2017	4*	2*	2*	2*	2*	2*	2*
10 Jul 2017	4*	2*	2*	2*	2*	2*	2*
11 Jul 2017	4*	2*	2*	2*	2*	2*	2*
12 Jul 2017	3	2	2	2	2	2	2
13 Jul 2017	3*	2*	2*	2*	2*	2*	2*
14 Jul 2017	3*	2*	2*	2*	2*	2*	2*
15 Jul 2017	3*	2*	2*	2*	2*	2*	2*
16 Jul 2017	3*	2*	2*	2*	2*	2*	2*
17 Jul 2017	3*	2*	2*	2*	2*	2*	2*
18 Jul 2017	2*	2*	2*	2*	2*	2*	2*
19 Jul 2017	2*	2*	2*	2*	2*	2*	2*
20 Jul 2017	2*	2*	2*	2*	2*	2*	2*
21 Jul 2017	2*	2*	2*	2*	2*	2*	2*
22 Jul 2017	2*	2*	2*	2*	2*	2*	2*
23 Jul 2017	2*	2*	2*	2*	2*	2*	2*
24 Jul 2017	2*	2*	2*	2*	2*	2*	2*
25 Jul 2017	2	2	2	2	2	2	2
26 Jul 2017	2	2	2	2	2	2	2
27 Jul 2017	2	2	2	2	2	2	2
28 Jul 2017	2	2	2	2	2	2	2
29 Jul 2017	2*	2*	2*	2*	2*	2*	2*
30 Jul 2017	2	2	2	2	2	2	2
31 Jul 2017	2	2	2	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.

<b>Date</b>	<b>I19</b>	<b>I24</b>	<b>I25</b>	<b>I26</b>	<b>I32</b>	<b>I39</b>	<b>I40</b>
06 Jul 2017	IC	IC	IC	IC	IC	IC	IC
12 Jul 2017	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC
30 Jul 2017	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>I19</b>	<b>I24</b>	<b>I25</b>	<b>I26</b>	<b>I32</b>	<b>I39</b>	<b>I40</b>
06 Jul 2017	IC	IC	IC	IC	IC	IC	IC
12 Jul 2017	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC
30 Jul 2017	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>I19</b>	<b>I24</b>	<b>I25</b>	<b>I26</b>	<b>I32</b>	<b>I39</b>	<b>I40</b>
06 Jul 2017	IC	IC	IC	IC	IC	IC	IC
12 Jul 2017	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC
30 Jul 2017	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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.

<b>Date</b>	<b>I19</b>	<b>I24</b>	<b>I25</b>	<b>I26</b>	<b>I32</b>	<b>I39</b>	<b>I40</b>
06 Jul 2017	IC	IC	IC	IC	IC	IC	IC
12 Jul 2017	IC	IC	IC	IC	IC	IC	IC
18 Jul 2017	IC	IC	IC	IC	IC	IC	IC
25 Jul 2017	IC	IC	IC	IC	IC	IC	IC
30 Jul 2017	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

**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* (Entero) 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; oil and grease samples (OG) and suspended solids (SUSO) data are reported as mg/L. Duplicates are indicated by \*. Comments follow the data summary.

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH	OG	SUSO
119	06 Jul 2017	1032	2	<2	<2	<2	1.00	17.3	66.58	11.25	33.51	8.35	ns	ns
119	06 Jul 2017	1032	6	<20	<2	<2	0.10	14.4	50.53	6.86	33.46	8.10	ns	ns
119	06 Jul 2017	1032	11	<20	<2	<2	0.10	13.9	54.90	6.52	33.46	8.01	ns	ns
119	12 Jul 2017	1100	2	<20	<2	2e	0.10	20.1	66.76	9.61	33.45	8.34	ns	ns
119	12 Jul 2017	1100	6	<20	<2	2e	0.10	16.5	59.05	11.73	33.48	8.33	ns	ns
119	12 Jul 2017	1100	11	<2	<2	<2	1.00	15.4	54.98	8.83	33.45	8.14	ns	ns
119	18 Jul 2017	1057	2	<20	<2	<2	0.10	22.6	71.91	8.35	33.50	8.29	ns	ns
119	18 Jul 2017	1057	6	<20	4e	<2	0.20	20.7	65.97	9.03	33.54	8.28	ns	ns
119	18 Jul 2017	1057	11	<20	<2	<2	0.10	17.6	58.24	8.69	33.51	8.22	ns	ns
119	25 Jul 2017	1110	2	20e	<2	<2	0.10	22.3	75.30	7.87	33.55	8.27	ns	ns
119	25 Jul 2017	1110	6	<20	<2	<2	0.10	17.0	74.13	6.49	33.48	8.18	ns	ns
119	25 Jul 2017	1110	11	<20	<2	<2	0.10	14.2	55.25	6.03	33.31	7.95	ns	ns
119	30 Jul 2017	1027	2	<2	<2	<2	1.00	19.8	79.72	7.66	33.49	8.21	ns	ns
119	30 Jul 2017	1027	6	36e	<2	<2	0.06	18.1	77.00	7.65	33.54	8.17	ns	ns
119	30 Jul 2017	1027	11	4e	<2	2e	0.50	14.7	75.06	6.73	33.39	8.05	ns	ns
124	06 Jul 2017	1054	2	<2	<2	<2	1.00	17.3	65.67	11.91	33.49	8.36	ns	ns
124	06 Jul 2017	1054	6	<2	<2	<2	1.00	14.8	61.10	7.21	33.45	8.19	ns	ns
124	06 Jul 2017	1054	11	2e	<2	<2	1.00	13.8	78.57	7.09	33.44	8.00	ns	ns
124	12 Jul 2017	1124	2	<2	<2	<2	1.00	21.1	70.38	10.11	33.49	8.37	ns	ns
124	12 Jul 2017	1124	6	<2	<2	<2	1.00	20.2	66.13	10.30	33.47	8.35	ns	ns
124	12 Jul 2017	1124	11	<20	<2	4e	0.10	15.6	53.30	9.21	33.49	8.18	ns	ns
124	18 Jul 2017	1126	2	<2	2e	<2	1.00	22.6	72.93	8.82	33.52	8.30	ns	ns
124	18 Jul 2017	1126	6	4e	<2	<2	0.50	22.1	77.53	8.75	33.53	8.29	ns	ns
124	18 Jul 2017	1126	11	2e	<2	<2	1.00	16.7	62.08	9.54	33.52	8.25	ns	ns
124	25 Jul 2017	1131	2	<20	<2	<2	0.10	21.5	84.09	8.57	33.53	8.27	ns	ns
124	25 Jul 2017	1131	6	<2	<2	<2	1.00	16.2	82.87	6.98	33.42	8.17	ns	ns
124	25 Jul 2017	1131	11	<2	<2	<2	1.00	14.1	80.23	6.92	33.31	7.98	ns	ns
124	30 Jul 2017	1048	2	<2	<2	<2	1.00	19.7	81.11	8.11	33.54	8.23	ns	ns
124	30 Jul 2017	1048	6	<2	<2	<2	1.00	18.5	81.70	7.88	33.56	8.20	ns	ns
124	30 Jul 2017	1048	11	<2	<2	<2	1.00	14.1	71.44	6.66	33.52	8.02	ns	ns
125	06 Jul 2017	1101	2	<2	<2	<2	1.00	19.2	72.32	10.90	33.47	8.38	ns	ns
125	06 Jul 2017	1101	6	<20	<2	<2	0.10	14.6	51.87	6.96	33.46	8.18	ns	ns
125	06 Jul 2017	1101	9	<2	<2	<2	1.00	13.8	71.37	6.58	33.44	7.99	ns	ns
125	12 Jul 2017	1132	2	<2	<2	<2	1.00	20.9	72.54	11.32	33.48	8.40	ns	ns
125	12 Jul 2017	1132	6	<2	<2	<2	1.00	19.1	57.92	11.22	33.47	8.36	ns	ns

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH	OG	SUSO
I25	12 Jul 2017	1132	9	<20	<2	<2	0.10	17.3	57.80	9.25	33.46	8.20	ns	ns
I25	18 Jul 2017	1138	2	<2	<2	<2	1.00	22.6	77.40	8.62	33.51	8.28	ns	ns
I25	18 Jul 2017	1138	6	<2	<2	<2	1.00	22.1	78.96	8.95	33.52	8.30	ns	ns
I25	18 Jul 2017	1138	9	<2	<2	<2	1.00	20.0	73.95	10.35	33.48	8.31	ns	ns
I25	25 Jul 2017	1139	2	<2	<2	<2	1.00	21.7	83.74	8.61	33.54	8.28	ns	ns
I25	25 Jul 2017	1139	6	<2	<2	<2	1.00	16.5	83.74	7.03	33.47	8.18	ns	ns
I25	25 Jul 2017	1139	9	<2	<2	<2	1.00	14.5	82.79	7.33	33.31	8.04	ns	ns
I25	30 Jul 2017	1056	2	<2	<2	<2	1.00	20.1	81.28	7.45	33.56	8.23	ns	ns
I25	30 Jul 2017	1056	6	4e	<2	<2	0.50	17.6	81.45	8.03	33.73	8.18	ns	ns
I25	30 Jul 2017	1056	9	<2	<2	<2	1.00	14.8	78.93	7.25	34.27	8.11	ns	ns
I26	06 Jul 2017	1110	2	<2	<2	<2	1.00	19.0	70.46	10.11	33.48	8.37	ns	ns
I26	06 Jul 2017	1110	6	<2	<2	<2	1.00	14.3	61.26	5.66	33.47	8.15	ns	ns
I26	06 Jul 2017	1110	9	4e	<2	<2	0.50	13.9	77.26	6.96	33.43	8.00	ns	ns
I26	12 Jul 2017	1142	2	<2	<2	<2	1.00	20.3	69.68	12.20	33.49	8.41	ns	ns
I26	12 Jul 2017	1142	6	<2	<2	<2	1.00	19.9	55.54	12.44	33.47	8.43	ns	ns
I26	12 Jul 2017	1142	9	<20	<2	<2	0.10	18.0	52.76	10.57	33.50	8.32	ns	ns
I26	18 Jul 2017	1150	2	<2	<2	<2	1.00	22.4	74.60	9.17	33.51	8.32	ns	ns
I26	18 Jul 2017	1150	6	<2	<2	<2	1.00	21.8	75.79	9.11	33.52	8.30	ns	ns
I26	18 Jul 2017	1150	9	<2	<2	<2	1.00	18.4	71.07	10.32	33.50	8.30	ns	ns
I26	25 Jul 2017	1150	2	<2	<2	<2	1.00	22.0	81.82	8.45	33.55	8.28	ns	ns
I26	25 Jul 2017	1150	6	<2	<2	2e	1.00	16.2	83.83	7.12	33.40	8.15	ns	ns
I26	25 Jul 2017	1150	9	<2	<2	<2	1.00	15.0	81.90	7.50	33.34	8.07	ns	ns
I26	30 Jul 2017	1105	2	<2	<2	<2	1.00	19.7	80.85	7.47	33.42	8.22	ns	ns
I26	30 Jul 2017	1105	6	2e	<2	<2	1.00	18.3	81.82	7.78	33.56	8.19	ns	ns
I26	30 Jul 2017	1105	9	<2	<2	<2	1.00	14.8	77.56	6.91	33.69	8.05	ns	ns
I32	06 Jul 2017	1127	2	<2	<2	<2	1.00	20.0	73.98	10.86	33.50	8.41	ns	ns
I32	06 Jul 2017	1127	6	<20	<2	<2	0.10	18.3	69.02	8.08	33.47	8.36	ns	ns
I32	06 Jul 2017	1127	9	<2	<2	4e	1.00	14.4	55.23	5.85	33.48	8.09	ns	ns
I32	12 Jul 2017	1156	2	<20	<2	<2	0.10	21.8	71.63	9.58	33.51	8.38	ns	ns
I32	12 Jul 2017	1156	6	<2	<2	<2	1.00	21.5	70.85	9.66	33.51	8.37	ns	ns
I32	12 Jul 2017	1156	9	2e	<2	<2	1.00	21.4	68.67	9.15	33.50	8.36	ns	ns
I32	18 Jul 2017	1203	2	<20	<2	<2	0.10	22.5	75.61	8.96	33.51	8.31	ns	ns
I32	18 Jul 2017	1203	6	2e	2e	<2	1.00	21.9	75.10	9.01	33.53	8.31	ns	ns
I32	18 Jul 2017	1203	9	<20	<2	<2	0.10	16.9	45.21	8.01	33.53	8.16	ns	ns
I32	25 Jul 2017	1203	2	<20	<2	<2	0.10	22.5	77.44	8.06	33.59	8.27	ns	ns
I32	25 Jul 2017	1203	6	<20	<2	<2	0.10	16.6	82.63	7.86	33.45	8.17	ns	ns
I32	25 Jul 2017	1203	9	<2	<2	<2	1.00	16.1	79.08	7.75	33.37	8.13	ns	ns
I32	30 Jul 2017	1123	2	<2	<2	<2	1.00	19.6	78.43	7.94	33.48	8.19	ns	ns
I32	30 Jul 2017	1123	6	<2	<2	<2	1.00	18.9	78.81	7.65	33.47	8.16	ns	ns
I32	30 Jul 2017	1123	9	<2	<2	<2	1.00	16.1	78.64	7.23	33.56	8.13	ns	ns
I39	06 Jul 2017	1009	2	<2	<2	<2	1.00	19.2	74.85	11.88	33.50	8.42	ns	ns

Station	Date	Time	Depth	Total	Fecal	Enteroc	F:T	Temp	XMS	DO	Sal	pH	OG	SUSO
I39	06 Jul 2017	1009	12	<2	<2	<2	1.00	18.6	66.99	12.47	33.50	8.42	ns	ns
I39	06 Jul 2017	1009	18	<2	<2	<2	1.00	13.1	76.82	8.01	33.44	7.97	ns	ns
I39	12 Jul 2017	1037	2	<2	<2	<2	1.00	20.7	72.31	11.24	33.52	8.37	ns	ns
I39	12 Jul 2017	1037	12	<20	<2	<2	0.10	16.6	63.25	11.01	33.55	8.31	ns	ns
I39	12 Jul 2017	1037	18	18e	<2	<2	0.11	13.5	74.12	6.12	33.45	7.92	ns	ns
I39	18 Jul 2017	1034	2	<2	<2	<2	1.00	22.1	85.42	9.29	33.53	8.32	ns	ns
I39	18 Jul 2017	1034	12	<2	<2	<2	1.00	16.0	76.48	9.96	33.43	8.24	ns	ns
I39	18 Jul 2017	1034	18	<2	<2	<2	1.00	14.0	83.95	7.75	33.38	8.08	ns	ns
I39	25 Jul 2017	1047	2	<2	<2	<2	1.00	22.1	84.16	8.73	33.52	8.25	ns	ns
I39	25 Jul 2017	1047	12	<2	<2	<2	1.00	13.2	90.06	6.33	33.28	7.96	ns	ns
I39	25 Jul 2017	1047	18	<2	<2	<2	1.00	13.0	89.88	6.36	33.30	7.93	ns	ns
I39	30 Jul 2017	1008	2	<2	<2	<2	1.00	19.9	80.54	7.73	33.53	8.21	ns	ns
I39	30 Jul 2017	1008	12	4e	<2	<2	0.50	13.4	86.90	6.52	33.31	8.00	ns	ns
I39	30 Jul 2017	1008	18	2e	2e	<2	1.00	13.2	86.20	6.58	33.32	7.99	ns	ns
I40	06 Jul 2017	1045	2	<20	<2	<2	0.10	18.6	66.07	8.58	33.47	8.32	ns	ns
I40	06 Jul 2017	1045	6	<20	<2	<2	0.10	14.7	68.55	9.23	33.44	8.10	ns	ns
I40	06 Jul 2017	1045	9	<20	<2	<2	0.10	14.3	63.59	6.95	33.43	8.14	ns	ns
I40	12 Jul 2017	1114	2	<2	<2	<2	1.00	20.5	67.84	9.83	33.47	8.32	ns	ns
I40	12 Jul 2017	1114	6	<20	<2	<2	0.10	18.3	54.36	12.01	33.49	8.39	ns	ns
I40	12 Jul 2017	1114	9	<20	2e	<2	0.10	17.2	49.16	10.06	33.48	8.26	ns	ns
I40	18 Jul 2017	1116	2	<20	<2	<2	0.10	22.7	76.54	7.85	33.50	8.25	ns	ns
I40	18 Jul 2017	1116	6	<2	<2	<2	1.00	22.0	80.55	8.68	33.53	8.29	ns	ns
I40	18 Jul 2017	1116	9	<20	<2	<2	0.10	19.4	74.47	9.43	33.60	8.32	ns	ns
I40	25 Jul 2017	1121	2	<20	<2	<2	0.10	20.9	79.07	8.86	33.53	8.24	ns	ns
I40	25 Jul 2017	1121	6	2e	<2	<2	1.00	16.2	80.90	7.04	33.41	8.14	ns	ns
I40	25 Jul 2017	1121	9	<2	<2	<2	1.00	14.8	79.76	6.15	33.34	8.05	ns	ns
I40	30 Jul 2017	1039	2	<2	<2	<2	1.00	19.7	80.51	7.25	33.51	8.21	ns	ns
I40	30 Jul 2017	1039	6	<2	<2	<2	1.00	19.1	80.15	7.38	33.66	8.20	ns	ns
I40	30 Jul 2017	1039	9	<20	<2	<2	0.10	14.4	61.37	6.06	33.81	8.01	ns	ns

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	06 Jul 2017	Depth (m)	11
I19	06 Jul 2017	Arrive Time	1032
I19	06 Jul 2017	Depart Time	1036
I19	06 Jul 2017	Air Temp (C)	18
I19	06 Jul 2017	Weather	Haze
I19	06 Jul 2017	Visibility (mi)	6
I19	06 Jul 2017	Wind Speed (kts)	4
I19	06 Jul 2017	Wind Dir	SW
I19	06 Jul 2017	Water Color	Greenish-Brown
I19	06 Jul 2017	Wave Ht Low (ft)	2
I19	06 Jul 2017	Wave Period (sec)	13
I19	06 Jul 2017	Sea State	Calm
I19	06 Jul 2017	High Tide (ft)	3.6
I19	06 Jul 2017	High Tide Time	904
I19	06 Jul 2017	Low Tide (ft)	2
I19	06 Jul 2017	Low Tide Time	1400
I19	06 Jul 2017	Comments	
I19	12 Jul 2017	Depth (m)	11
I19	12 Jul 2017	Arrive Time	1100
I19	12 Jul 2017	Depart Time	1105
I19	12 Jul 2017	Air Temp (C)	20
I19	12 Jul 2017	Weather	Clear
I19	12 Jul 2017	Visibility (mi)	12
I19	12 Jul 2017	Wind Speed (kts)	10
I19	12 Jul 2017	Wind Dir	E
I19	12 Jul 2017	Water Color	Green
I19	12 Jul 2017	Wave Ht Low (ft)	5
I19	12 Jul 2017	Wave Period (sec)	13
I19	12 Jul 2017	Sea State	Wind ripples
I19	12 Jul 2017	High Tide (ft)	4
I19	12 Jul 2017	High Tide Time	1231
I19	12 Jul 2017	Low Tide (ft)	-0.2
I19	12 Jul 2017	Low Tide Time	607
I19	12 Jul 2017	Comments	
I19	18 Jul 2017	Depth (m)	10
I19	18 Jul 2017	Arrive Time	1057
I19	18 Jul 2017	Depart Time	1106
I19	18 Jul 2017	Air Temp (C)	21
I19	18 Jul 2017	Weather	Continuous layer of clouds
I19	18 Jul 2017	Visibility (mi)	6
I19	18 Jul 2017	Wind Speed (kts)	8
I19	18 Jul 2017	Wind Dir	NE
I19	18 Jul 2017	Water Color	Greenish-Blue
I19	18 Jul 2017	Wave Ht Low (ft)	3
I19	18 Jul 2017	Wave Period (sec)	11
I19	18 Jul 2017	Sea State	Calm
I19	18 Jul 2017	High Tide (ft)	3.3
I19	18 Jul 2017	High Tide Time	541
I19	18 Jul 2017	Low Tide (ft)	1.6

Station	Date	Parameter	Value
I19	18 Jul 2017	Low Tide Time	1104
I19	18 Jul 2017	Comments	
I19	25 Jul 2017	Depth (m)	12
I19	25 Jul 2017	Arrive Time	1110
I19	25 Jul 2017	Depart Time	1114
I19	25 Jul 2017	Air Temp (C)	20
I19	25 Jul 2017	Weather	Overcast
I19	25 Jul 2017	Visibility (mi)	5
I19	25 Jul 2017	Wind Speed (kts)	6
I19	25 Jul 2017	Wind Dir	SW
I19	25 Jul 2017	Water Color	Green
I19	25 Jul 2017	Wave Ht Low (ft)	2
I19	25 Jul 2017	Wave Period (sec)	11
I19	25 Jul 2017	Sea State	Light chop
I19	25 Jul 2017	High Tide (ft)	4.6
I19	25 Jul 2017	High Tide Time	1147
I19	25 Jul 2017	Low Tide (ft)	-1
I19	25 Jul 2017	Low Tide Time	529
I19	25 Jul 2017	Comments	
I19	30 Jul 2017	Depth (m)	11
I19	30 Jul 2017	Arrive Time	1027
I19	30 Jul 2017	Depart Time	1029
I19	30 Jul 2017	Air Temp (C)	20
I19	30 Jul 2017	Weather	Partly Cloudy
I19	30 Jul 2017	Visibility (mi)	8
I19	30 Jul 2017	Wind Speed (kts)	6
I19	30 Jul 2017	Wind Dir	N
I19	30 Jul 2017	Water Color	Green
I19	30 Jul 2017	Wave Ht Low (ft)	3
I19	30 Jul 2017	Wave Period (sec)	11
I19	30 Jul 2017	Sea State	Calm
I19	30 Jul 2017	High Tide (ft)	4.6
I19	30 Jul 2017	High Tide Time	1602
I19	30 Jul 2017	Low Tide (ft)	1.7
I19	30 Jul 2017	Low Tide Time	911
I19	30 Jul 2017	Comments	
I24	06 Jul 2017	Depth (m)	10
I24	06 Jul 2017	Arrive Time	1054
I24	06 Jul 2017	Depart Time	1056
I24	06 Jul 2017	Air Temp (C)	19
I24	06 Jul 2017	Weather	Haze
I24	06 Jul 2017	Visibility (mi)	6
I24	06 Jul 2017	Wind Speed (kts)	4
I24	06 Jul 2017	Wind Dir	W
I24	06 Jul 2017	Water Color	Greenish-Brown
I24	06 Jul 2017	Wave Ht Low (ft)	2
I24	06 Jul 2017	Wave Period (sec)	13
I24	06 Jul 2017	Sea State	Calm
I24	06 Jul 2017	High Tide (ft)	3.6
I24	06 Jul 2017	High Tide Time	904
I24	06 Jul 2017	Low Tide (ft)	2
I24	06 Jul 2017	Low Tide Time	1400

Station	Date	Parameter	Value
I24	06 Jul 2017	Comments	
I24	12 Jul 2017	Depth (m)	10
I24	12 Jul 2017	Arrive Time	1124
I24	12 Jul 2017	Depart Time	1128
I24	12 Jul 2017	Air Temp (C)	20
I24	12 Jul 2017	Weather	Clear
I24	12 Jul 2017	Visibility (mi)	12
I24	12 Jul 2017	Wind Speed (kts)	10
I24	12 Jul 2017	Wind Dir	S
I24	12 Jul 2017	Water Color	Green
I24	12 Jul 2017	Wave Ht Low (ft)	5
I24	12 Jul 2017	Wave Period (sec)	13
I24	12 Jul 2017	Sea State	Heavy chop
I24	12 Jul 2017	High Tide (ft)	4
I24	12 Jul 2017	High Tide Time	1231
I24	12 Jul 2017	Low Tide (ft)	-0.2
I24	12 Jul 2017	Low Tide Time	607
I24	12 Jul 2017	Comments	
I24	18 Jul 2017	Depth (m)	10
I24	18 Jul 2017	Arrive Time	1126
I24	18 Jul 2017	Depart Time	1129
I24	18 Jul 2017	Air Temp (C)	21
I24	18 Jul 2017	Weather	Partly Cloudy
I24	18 Jul 2017	Visibility (mi)	9
I24	18 Jul 2017	Wind Speed (kts)	10
I24	18 Jul 2017	Wind Dir	E
I24	18 Jul 2017	Water Color	Green
I24	18 Jul 2017	Wave Ht Low (ft)	3
I24	18 Jul 2017	Wave Period (sec)	11
I24	18 Jul 2017	Sea State	Calm
I24	18 Jul 2017	High Tide (ft)	3.3
I24	18 Jul 2017	High Tide Time	541
I24	18 Jul 2017	Low Tide (ft)	1.6
I24	18 Jul 2017	Low Tide Time	1104
I24	18 Jul 2017	Comments	
I24	25 Jul 2017	Depth (m)	11
I24	25 Jul 2017	Arrive Time	1131
I24	25 Jul 2017	Depart Time	1136
I24	25 Jul 2017	Air Temp (C)	20
I24	25 Jul 2017	Weather	Overcast
I24	25 Jul 2017	Visibility (mi)	5
I24	25 Jul 2017	Wind Speed (kts)	7
I24	25 Jul 2017	Wind Dir	N
I24	25 Jul 2017	Water Color	Green
I24	25 Jul 2017	Wave Ht Low (ft)	2
I24	25 Jul 2017	Wave Period (sec)	11
I24	25 Jul 2017	Sea State	Light chop
I24	25 Jul 2017	High Tide (ft)	4.6
I24	25 Jul 2017	High Tide Time	1147
I24	25 Jul 2017	Low Tide (ft)	-1
I24	25 Jul 2017	Low Tide Time	529
I24	25 Jul 2017	Comments	

Station	Date	Parameter	Value
I24	30 Jul 2017	Depth (m)	11
I24	30 Jul 2017	Arrive Time	1048
I24	30 Jul 2017	Depart Time	1054
I24	30 Jul 2017	Air Temp (C)	20
I24	30 Jul 2017	Weather	Partly Cloudy
I24	30 Jul 2017	Visibility (mi)	12
I24	30 Jul 2017	Wind Speed (kts)	9
I24	30 Jul 2017	Wind Dir	SE
I24	30 Jul 2017	Water Color	Green
I24	30 Jul 2017	Wave Ht Low (ft)	3
I24	30 Jul 2017	Wave Period (sec)	11
I24	30 Jul 2017	Sea State	Calm
I24	30 Jul 2017	High Tide (ft)	4.6
I24	30 Jul 2017	High Tide Time	1602
I24	30 Jul 2017	Low Tide (ft)	1.7
I24	30 Jul 2017	Low Tide Time	911
I24	30 Jul 2017	Comments	
I25	06 Jul 2017	Depth (m)	9
I25	06 Jul 2017	Arrive Time	1101
I25	06 Jul 2017	Depart Time	1107
I25	06 Jul 2017	Air Temp (C)	19
I25	06 Jul 2017	Weather	Haze
I25	06 Jul 2017	Visibility (mi)	6
I25	06 Jul 2017	Wind Speed (kts)	5
I25	06 Jul 2017	Wind Dir	NE
I25	06 Jul 2017	Water Color	Greenish-Brown
I25	06 Jul 2017	Wave Ht Low (ft)	2
I25	06 Jul 2017	Wave Period (sec)	13
I25	06 Jul 2017	Sea State	Calm
I25	06 Jul 2017	High Tide (ft)	3.6
I25	06 Jul 2017	High Tide Time	904
I25	06 Jul 2017	Low Tide (ft)	2
I25	06 Jul 2017	Low Tide Time	1400
I25	06 Jul 2017	Comments	
I25	12 Jul 2017	Depth (m)	9
I25	12 Jul 2017	Arrive Time	1132
I25	12 Jul 2017	Depart Time	1137
I25	12 Jul 2017	Air Temp (C)	21
I25	12 Jul 2017	Weather	Clear
I25	12 Jul 2017	Visibility (mi)	12
I25	12 Jul 2017	Wind Speed (kts)	8
I25	12 Jul 2017	Wind Dir	SW
I25	12 Jul 2017	Water Color	Bluish-Green
I25	12 Jul 2017	Wave Ht Low (ft)	5
I25	12 Jul 2017	Wave Period (sec)	13
I25	12 Jul 2017	Sea State	Heavy chop
I25	12 Jul 2017	High Tide (ft)	4
I25	12 Jul 2017	High Tide Time	1231
I25	12 Jul 2017	Low Tide (ft)	-0.2
I25	12 Jul 2017	Low Tide Time	607
I25	12 Jul 2017	Comments	

Station	Date	Parameter	Value
I25	18 Jul 2017	Depth (m)	9
I25	18 Jul 2017	Arrive Time	1138
I25	18 Jul 2017	Depart Time	1143
I25	18 Jul 2017	Air Temp (C)	21
I25	18 Jul 2017	Weather	Partly Cloudy
I25	18 Jul 2017	Visibility (mi)	9
I25	18 Jul 2017	Wind Speed (kts)	7
I25	18 Jul 2017	Wind Dir	SE
I25	18 Jul 2017	Water Color	Green
I25	18 Jul 2017	Wave Ht Low (ft)	3
I25	18 Jul 2017	Wave Period (sec)	11
I25	18 Jul 2017	Sea State	Calm
I25	18 Jul 2017	High Tide (ft)	3.3
I25	18 Jul 2017	High Tide Time	541
I25	18 Jul 2017	Low Tide (ft)	1.6
I25	18 Jul 2017	Low Tide Time	1104
I25	18 Jul 2017	Comments	
I25	25 Jul 2017	Depth (m)	9
I25	25 Jul 2017	Arrive Time	1139
I25	25 Jul 2017	Depart Time	1144
I25	25 Jul 2017	Air Temp (C)	20
I25	25 Jul 2017	Weather	Overcast
I25	25 Jul 2017	Visibility (mi)	5
I25	25 Jul 2017	Wind Speed (kts)	10
I25	25 Jul 2017	Wind Dir	S
I25	25 Jul 2017	Water Color	Green
I25	25 Jul 2017	Wave Ht Low (ft)	2
I25	25 Jul 2017	Wave Period (sec)	11
I25	25 Jul 2017	Sea State	Light chop
I25	25 Jul 2017	High Tide (ft)	4.6
I25	25 Jul 2017	High Tide Time	1147
I25	25 Jul 2017	Low Tide (ft)	-1
I25	25 Jul 2017	Low Tide Time	529
I25	25 Jul 2017	Comments	
I25	30 Jul 2017	Depth (m)	9
I25	30 Jul 2017	Arrive Time	1056
I25	30 Jul 2017	Depart Time	1100
I25	30 Jul 2017	Air Temp (C)	20
I25	30 Jul 2017	Weather	Partly Cloudy
I25	30 Jul 2017	Visibility (mi)	12
I25	30 Jul 2017	Wind Speed (kts)	6
I25	30 Jul 2017	Wind Dir	SE
I25	30 Jul 2017	Water Color	Green
I25	30 Jul 2017	Wave Ht Low (ft)	3
I25	30 Jul 2017	Wave Period (sec)	11
I25	30 Jul 2017	Sea State	Calm
I25	30 Jul 2017	High Tide (ft)	4.6
I25	30 Jul 2017	High Tide Time	1602
I25	30 Jul 2017	Low Tide (ft)	1.7
I25	30 Jul 2017	Low Tide Time	911
I25	30 Jul 2017	Comments	
I26	06 Jul 2017	Depth (m)	9

Station	Date	Parameter	Value
I26	06 Jul 2017	Arrive Time	1110
I26	06 Jul 2017	Depart Time	1115
I26	06 Jul 2017	Air Temp (C)	19
I26	06 Jul 2017	Weather	Haze
I26	06 Jul 2017	Visibility (mi)	6
I26	06 Jul 2017	Wind Speed (kts)	7
I26	06 Jul 2017	Wind Dir	S
I26	06 Jul 2017	Water Color	Greenish-Brown
I26	06 Jul 2017	Wave Ht Low (ft)	2
I26	06 Jul 2017	Wave Period (sec)	13
I26	06 Jul 2017	Sea State	Calm
I26	06 Jul 2017	High Tide (ft)	3.6
I26	06 Jul 2017	High Tide Time	904
I26	06 Jul 2017	Low Tide (ft)	2
I26	06 Jul 2017	Low Tide Time	1400
I26	06 Jul 2017	Comments	
I26	12 Jul 2017	Depth (m)	9
I26	12 Jul 2017	Arrive Time	1142
I26	12 Jul 2017	Depart Time	1147
I26	12 Jul 2017	Air Temp (C)	20
I26	12 Jul 2017	Weather	Clear
I26	12 Jul 2017	Visibility (mi)	12
I26	12 Jul 2017	Wind Speed (kts)	10
I26	12 Jul 2017	Wind Dir	S
I26	12 Jul 2017	Water Color	Bluish-Green
I26	12 Jul 2017	Wave Ht Low (ft)	5
I26	12 Jul 2017	Wave Period (sec)	13
I26	12 Jul 2017	Sea State	Heavy chop
I26	12 Jul 2017	High Tide (ft)	4
I26	12 Jul 2017	High Tide Time	1231
I26	12 Jul 2017	Low Tide (ft)	-0.2
I26	12 Jul 2017	Low Tide Time	607
I26	12 Jul 2017	Comments	
I26	18 Jul 2017	Depth (m)	9
I26	18 Jul 2017	Arrive Time	1150
I26	18 Jul 2017	Depart Time	1153
I26	18 Jul 2017	Air Temp (C)	21
I26	18 Jul 2017	Weather	Partly Cloudy
I26	18 Jul 2017	Visibility (mi)	9
I26	18 Jul 2017	Wind Speed (kts)	10
I26	18 Jul 2017	Wind Dir	W
I26	18 Jul 2017	Water Color	Green
I26	18 Jul 2017	Wave Ht Low (ft)	3
I26	18 Jul 2017	Wave Period (sec)	11
I26	18 Jul 2017	Sea State	Calm
I26	18 Jul 2017	High Tide (ft)	3.3
I26	18 Jul 2017	High Tide Time	541
I26	18 Jul 2017	Low Tide (ft)	1.6
I26	18 Jul 2017	Low Tide Time	1104
I26	18 Jul 2017	Comments	
I26	25 Jul 2017	Depth (m)	10
I26	25 Jul 2017	Arrive Time	1150

Station	Date	Parameter	Value
I26	25 Jul 2017	Depart Time	1155
I26	25 Jul 2017	Air Temp (C)	20
I26	25 Jul 2017	Weather	Overcast
I26	25 Jul 2017	Visibility (mi)	5
I26	25 Jul 2017	Wind Speed (kts)	2
I26	25 Jul 2017	Wind Dir	NW
I26	25 Jul 2017	Water Color	Green
I26	25 Jul 2017	Wave Ht Low (ft)	2
I26	25 Jul 2017	Wave Period (sec)	11
I26	25 Jul 2017	Sea State	Light chop
I26	25 Jul 2017	High Tide (ft)	4.6
I26	25 Jul 2017	High Tide Time	1147
I26	25 Jul 2017	Low Tide (ft)	-1
I26	25 Jul 2017	Low Tide Time	529
I26	25 Jul 2017	Comments	
I26	30 Jul 2017	Depth (m)	9
I26	30 Jul 2017	Arrive Time	1105
I26	30 Jul 2017	Depart Time	1116
I26	30 Jul 2017	Air Temp (C)	20
I26	30 Jul 2017	Weather	Partly Cloudy
I26	30 Jul 2017	Visibility (mi)	12
I26	30 Jul 2017	Wind Speed (kts)	7
I26	30 Jul 2017	Wind Dir	SW
I26	30 Jul 2017	Water Color	Green
I26	30 Jul 2017	Wave Ht Low (ft)	3
I26	30 Jul 2017	Wave Period (sec)	11
I26	30 Jul 2017	Sea State	Calm
I26	30 Jul 2017	High Tide (ft)	4.6
I26	30 Jul 2017	High Tide Time	1602
I26	30 Jul 2017	Low Tide (ft)	1.7
I26	30 Jul 2017	Low Tide Time	911
I26	30 Jul 2017	Comments	
I32	06 Jul 2017	Depth (m)	9
I32	06 Jul 2017	Arrive Time	1127
I32	06 Jul 2017	Depart Time	1130
I32	06 Jul 2017	Air Temp (C)	19
I32	06 Jul 2017	Weather	Haze
I32	06 Jul 2017	Visibility (mi)	6
I32	06 Jul 2017	Wind Speed (kts)	6
I32	06 Jul 2017	Wind Dir	W
I32	06 Jul 2017	Water Color	Greenish-Brown
I32	06 Jul 2017	Wave Ht Low (ft)	2
I32	06 Jul 2017	Wave Period (sec)	13
I32	06 Jul 2017	Sea State	Calm
I32	06 Jul 2017	High Tide (ft)	3.6
I32	06 Jul 2017	High Tide Time	904
I32	06 Jul 2017	Low Tide (ft)	2
I32	06 Jul 2017	Low Tide Time	1400
I32	06 Jul 2017	Comments	
I32	12 Jul 2017	Depth (m)	10
I32	12 Jul 2017	Arrive Time	1156
I32	12 Jul 2017	Depart Time	1201

Station	Date	Parameter	Value
I32	12 Jul 2017	Air Temp (C)	20
I32	12 Jul 2017	Weather	Clear
I32	12 Jul 2017	Visibility (mi)	12
I32	12 Jul 2017	Wind Speed (kts)	9
I32	12 Jul 2017	Wind Dir	SW
I32	12 Jul 2017	Water Color	Bluish-Green
I32	12 Jul 2017	Wave Ht Low (ft)	5
I32	12 Jul 2017	Wave Period (sec)	13
I32	12 Jul 2017	Sea State	Heavy chop
I32	12 Jul 2017	High Tide (ft)	4
I32	12 Jul 2017	High Tide Time	1231
I32	12 Jul 2017	Low Tide (ft)	-0.2
I32	12 Jul 2017	Low Tide Time	607
I32	12 Jul 2017	Comments	
I32	18 Jul 2017	Depth (m)	9
I32	18 Jul 2017	Arrive Time	1203
I32	18 Jul 2017	Depart Time	1206
I32	18 Jul 2017	Air Temp (C)	21
I32	18 Jul 2017	Weather	Partly Cloudy
I32	18 Jul 2017	Visibility (mi)	9
I32	18 Jul 2017	Wind Speed (kts)	9
I32	18 Jul 2017	Wind Dir	W
I32	18 Jul 2017	Water Color	Green
I32	18 Jul 2017	Wave Ht Low (ft)	3
I32	18 Jul 2017	Wave Period (sec)	11
I32	18 Jul 2017	Sea State	Calm
I32	18 Jul 2017	High Tide (ft)	3.3
I32	18 Jul 2017	High Tide Time	541
I32	18 Jul 2017	Low Tide (ft)	1.6
I32	18 Jul 2017	Low Tide Time	1104
I32	18 Jul 2017	Comments	
I32	25 Jul 2017	Depth (m)	10
I32	25 Jul 2017	Arrive Time	1203
I32	25 Jul 2017	Depart Time	1206
I32	25 Jul 2017	Air Temp (C)	21
I32	25 Jul 2017	Weather	Overcast
I32	25 Jul 2017	Visibility (mi)	5
I32	25 Jul 2017	Wind Speed (kts)	5
I32	25 Jul 2017	Wind Dir	W
I32	25 Jul 2017	Water Color	Green
I32	25 Jul 2017	Wave Ht Low (ft)	2
I32	25 Jul 2017	Wave Period (sec)	11
I32	25 Jul 2017	Sea State	Light chop
I32	25 Jul 2017	High Tide (ft)	4.6
I32	25 Jul 2017	High Tide Time	1147
I32	25 Jul 2017	Low Tide (ft)	-1
I32	25 Jul 2017	Low Tide Time	529
I32	25 Jul 2017	Comments	
I32	30 Jul 2017	Depth (m)	10
I32	30 Jul 2017	Arrive Time	1123
I32	30 Jul 2017	Depart Time	1127
I32	30 Jul 2017	Air Temp (C)	20



Station	Date	Parameter	Value
I32	30 Jul 2017	Weather	Partly Cloudy
I32	30 Jul 2017	Visibility (mi)	12
I32	30 Jul 2017	Wind Speed (kts)	9
I32	30 Jul 2017	Wind Dir	NW
I32	30 Jul 2017	Water Color	Green
I32	30 Jul 2017	Wave Ht Low (ft)	3
I32	30 Jul 2017	Wave Period (sec)	11
I32	30 Jul 2017	Sea State	Calm
I32	30 Jul 2017	High Tide (ft)	4.6
I32	30 Jul 2017	High Tide Time	1602
I32	30 Jul 2017	Low Tide (ft)	1.7
I32	30 Jul 2017	Low Tide Time	911
I32	30 Jul 2017	Comments	
I39	06 Jul 2017	Depth (m)	18
I39	06 Jul 2017	Arrive Time	1009
I39	06 Jul 2017	Depart Time	1012
I39	06 Jul 2017	Air Temp (C)	18
I39	06 Jul 2017	Weather	Haze
I39	06 Jul 2017	Visibility (mi)	4
I39	06 Jul 2017	Wind Speed (kts)	4
I39	06 Jul 2017	Wind Dir	NE
I39	06 Jul 2017	Water Color	Greenish-Brown
I39	06 Jul 2017	Wave Ht Low (ft)	2
I39	06 Jul 2017	Wave Period (sec)	13
I39	06 Jul 2017	Sea State	Calm
I39	06 Jul 2017	High Tide (ft)	3.6
I39	06 Jul 2017	High Tide Time	904
I39	06 Jul 2017	Low Tide (ft)	2
I39	06 Jul 2017	Low Tide Time	1400
I39	06 Jul 2017	Comments	
I39	12 Jul 2017	Depth (m)	18
I39	12 Jul 2017	Arrive Time	1037
I39	12 Jul 2017	Depart Time	1044
I39	12 Jul 2017	Air Temp (C)	20
I39	12 Jul 2017	Weather	Clear
I39	12 Jul 2017	Visibility (mi)	10
I39	12 Jul 2017	Wind Speed (kts)	8
I39	12 Jul 2017	Wind Dir	NW
I39	12 Jul 2017	Water Color	Green
I39	12 Jul 2017	Wave Ht Low (ft)	5
I39	12 Jul 2017	Wave Period (sec)	13
I39	12 Jul 2017	Sea State	Wind ripples
I39	12 Jul 2017	High Tide (ft)	4
I39	12 Jul 2017	High Tide Time	1231
I39	12 Jul 2017	Low Tide (ft)	-0.2
I39	12 Jul 2017	Low Tide Time	607
I39	12 Jul 2017	Comments	
I39	18 Jul 2017	Depth (m)	18
I39	18 Jul 2017	Arrive Time	1034
I39	18 Jul 2017	Depart Time	1037
I39	18 Jul 2017	Air Temp (C)	21
I39	18 Jul 2017	Weather	Continuous layer of clouds

Station	Date	Parameter	Value
I39	18 Jul 2017	Visibility (mi)	6
I39	18 Jul 2017	Wind Speed (kts)	4
I39	18 Jul 2017	Wind Dir	NW
I39	18 Jul 2017	Water Color	Greenish-Blue
I39	18 Jul 2017	Wave Ht Low (ft)	3
I39	18 Jul 2017	Wave Period (sec)	11
I39	18 Jul 2017	Sea State	Calm
I39	18 Jul 2017	High Tide (ft)	3.3
I39	18 Jul 2017	High Tide Time	541
I39	18 Jul 2017	Low Tide (ft)	1.6
I39	18 Jul 2017	Low Tide Time	1104
I39	18 Jul 2017	Comments	
I39	25 Jul 2017	Depth (m)	19
I39	25 Jul 2017	Arrive Time	1047
I39	25 Jul 2017	Depart Time	1053
I39	25 Jul 2017	Air Temp (C)	20
I39	25 Jul 2017	Weather	Overcast
I39	25 Jul 2017	Visibility (mi)	5
I39	25 Jul 2017	Wind Speed (kts)	8
I39	25 Jul 2017	Wind Dir	N
I39	25 Jul 2017	Water Color	Green
I39	25 Jul 2017	Wave Ht Low (ft)	2
I39	25 Jul 2017	Wave Period (sec)	11
I39	25 Jul 2017	Sea State	Light chop
I39	25 Jul 2017	High Tide (ft)	4.6
I39	25 Jul 2017	High Tide Time	1147
I39	25 Jul 2017	Low Tide (ft)	-1
I39	25 Jul 2017	Low Tide Time	529
I39	25 Jul 2017	Comments	
I39	30 Jul 2017	Depth (m)	18
I39	30 Jul 2017	Arrive Time	1008
I39	30 Jul 2017	Depart Time	1011
I39	30 Jul 2017	Air Temp (C)	20
I39	30 Jul 2017	Weather	Partly Cloudy
I39	30 Jul 2017	Visibility (mi)	8
I39	30 Jul 2017	Wind Speed (kts)	6
I39	30 Jul 2017	Wind Dir	E
I39	30 Jul 2017	Water Color	Green
I39	30 Jul 2017	Wave Ht Low (ft)	3
I39	30 Jul 2017	Wave Period (sec)	11
I39	30 Jul 2017	Sea State	Calm
I39	30 Jul 2017	High Tide (ft)	4.6
I39	30 Jul 2017	High Tide Time	1602
I39	30 Jul 2017	Low Tide (ft)	1.7
I39	30 Jul 2017	Low Tide Time	911
I39	30 Jul 2017	Comments	
I40	06 Jul 2017	Depth (m)	10
I40	06 Jul 2017	Arrive Time	1045
I40	06 Jul 2017	Depart Time	1048
I40	06 Jul 2017	Air Temp (C)	18
I40	06 Jul 2017	Weather	Haze
I40	06 Jul 2017	Visibility (mi)	6

Station	Date	Parameter	Value
I40	06 Jul 2017	Wind Speed (kts)	4
I40	06 Jul 2017	Wind Dir	S
I40	06 Jul 2017	Water Color	Greenish-Brown
I40	06 Jul 2017	Wave Ht Low (ft)	2
I40	06 Jul 2017	Wave Period (sec)	13
I40	06 Jul 2017	Sea State	Calm
I40	06 Jul 2017	High Tide (ft)	3.6
I40	06 Jul 2017	High Tide Time	904
I40	06 Jul 2017	Low Tide (ft)	2
I40	06 Jul 2017	Low Tide Time	1400
I40	06 Jul 2017	Comments	
I40	12 Jul 2017	Depth (m)	9
I40	12 Jul 2017	Arrive Time	1114
I40	12 Jul 2017	Depart Time	1118
I40	12 Jul 2017	Air Temp (C)	20
I40	12 Jul 2017	Weather	Clear
I40	12 Jul 2017	Visibility (mi)	12
I40	12 Jul 2017	Wind Speed (kts)	9
I40	12 Jul 2017	Wind Dir	E
I40	12 Jul 2017	Water Color	Green
I40	12 Jul 2017	Wave Ht Low (ft)	5
I40	12 Jul 2017	Wave Period (sec)	13
I40	12 Jul 2017	Sea State	Light chop
I40	12 Jul 2017	High Tide (ft)	4
I40	12 Jul 2017	High Tide Time	1231
I40	12 Jul 2017	Low Tide (ft)	-0.2
I40	12 Jul 2017	Low Tide Time	607
I40	12 Jul 2017	Comments	
I40	18 Jul 2017	Depth (m)	9
I40	18 Jul 2017	Arrive Time	1116
I40	18 Jul 2017	Depart Time	1121
I40	18 Jul 2017	Air Temp (C)	21
I40	18 Jul 2017	Weather	Partly Cloudy
I40	18 Jul 2017	Visibility (mi)	8
I40	18 Jul 2017	Wind Speed (kts)	9
I40	18 Jul 2017	Wind Dir	N
I40	18 Jul 2017	Water Color	Green
I40	18 Jul 2017	Wave Ht Low (ft)	3
I40	18 Jul 2017	Wave Period (sec)	11
I40	18 Jul 2017	Sea State	Calm
I40	18 Jul 2017	High Tide (ft)	3.3
I40	18 Jul 2017	High Tide Time	541
I40	18 Jul 2017	Low Tide (ft)	1.6
I40	18 Jul 2017	Low Tide Time	1104
I40	18 Jul 2017	Comments	
I40	25 Jul 2017	Depth (m)	11
I40	25 Jul 2017	Arrive Time	1121
I40	25 Jul 2017	Depart Time	1125
I40	25 Jul 2017	Air Temp (C)	20
I40	25 Jul 2017	Weather	Overcast
I40	25 Jul 2017	Visibility (mi)	5
I40	25 Jul 2017	Wind Speed (kts)	8

Station	Date	Parameter	Value
I40	25 Jul 2017	Wind Dir	E
I40	25 Jul 2017	Water Color	Green
I40	25 Jul 2017	Wave Ht Low (ft)	2
I40	25 Jul 2017	Wave Period (sec)	11
I40	25 Jul 2017	Sea State	Light chop
I40	25 Jul 2017	High Tide (ft)	4.6
I40	25 Jul 2017	High Tide Time	1147
I40	25 Jul 2017	Low Tide (ft)	-1
I40	25 Jul 2017	Low Tide Time	529
I40	25 Jul 2017	Comments	
I40	30 Jul 2017	Depth (m)	10
I40	30 Jul 2017	Arrive Time	1039
I40	30 Jul 2017	Depart Time	1041
I40	30 Jul 2017	Air Temp (C)	20
I40	30 Jul 2017	Weather	Partly Cloudy
I40	30 Jul 2017	Visibility (mi)	12
I40	30 Jul 2017	Wind Speed (kts)	7
I40	30 Jul 2017	Wind Dir	E
I40	30 Jul 2017	Water Color	Green
I40	30 Jul 2017	Wave Ht Low (ft)	3
I40	30 Jul 2017	Wave Period (sec)	11
I40	30 Jul 2017	Sea State	Calm
I40	30 Jul 2017	High Tide (ft)	4.6
I40	30 Jul 2017	High Tide Time	1602
I40	30 Jul 2017	Low Tide (ft)	1.7
I40	30 Jul 2017	Low Tide Time	911
I40	30 Jul 2017	Comments	

**Table 3.10**

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I19	06 Jul 2017	1	18.80	67.65	11.0	33.48	8.3	23.9	5.36
I19	06 Jul 2017	2	17.34	66.58	11.2	33.51	8.3	24.3	11.84
I19	06 Jul 2017	3	16.14	63.44	9.5	33.50	8.3	24.6	15.74
I19	06 Jul 2017	4	15.42	55.02	7.6	33.48	8.3	24.7	18.94
I19	06 Jul 2017	5	14.80	49.71	6.8	33.47	8.2	24.8	20.87
I19	06 Jul 2017	6	14.41	50.53	6.9	33.46	8.1	24.9	18.62
I19	06 Jul 2017	7	14.24	45.78	7.1	33.44	8.1	24.9	17.14
I19	06 Jul 2017	8	14.09	51.52	7.0	33.44	8.1	25.0	17.28
I19	06 Jul 2017	9	14.03	55.90	6.6	33.44	8.1	25.0	15.89
I19	06 Jul 2017	10	13.87	54.90	6.5	33.46	8.0	25.0	12.75
I19	12 Jul 2017	1	20.25	66.86	9.6	33.44	8.3	23.5	1.37
I19	12 Jul 2017	2	20.13	66.76	9.6	33.45	8.3	23.5	1.45
I19	12 Jul 2017	3	19.19	66.38	11.4	33.55	8.4	23.9	1.75
I19	12 Jul 2017	4	17.37	63.97	14.1	33.50	8.4	24.3	4.48
I19	12 Jul 2017	5	17.12	59.50	13.3	33.47	8.4	24.3	8.69
I19	12 Jul 2017	6	16.51	59.05	11.7	33.48	8.3	24.5	10.82
I19	12 Jul 2017	7	16.54	57.71	11.3	33.44	8.3	24.4	10.90
I19	12 Jul 2017	8	15.92	61.14	10.6	33.48	8.3	24.6	11.29
I19	12 Jul 2017	9	15.69	63.87	9.6	33.46	8.2	24.6	10.89
I19	12 Jul 2017	10	15.43	54.98	8.8	33.45	8.1	24.7	10.75
I19	18 Jul 2017	1	22.67	71.13	8.6	33.49	8.3	22.9	1.66
I19	18 Jul 2017	2	22.55	71.91	8.3	33.50	8.3	22.9	1.82
I19	18 Jul 2017	3	22.24	71.29	8.0	33.49	8.3	23.0	2.33
I19	18 Jul 2017	4	22.15	68.70	8.1	33.49	8.3	23.0	2.80
I19	18 Jul 2017	5	21.80	68.80	8.4	33.52	8.3	23.2	3.13
I19	18 Jul 2017	6	20.70	65.97	9.0	33.54	8.3	23.5	3.71
I19	18 Jul 2017	7	19.96	61.12	9.9	33.53	8.3	23.6	4.33
I19	18 Jul 2017	8	18.89	70.22	10.0	33.51	8.3	23.9	5.42
I19	18 Jul 2017	9	18.23	68.84	9.2	33.48	8.3	24.1	6.94
I19	18 Jul 2017	10	17.59	58.24	8.7	33.51	8.2	24.2	6.96
I19	25 Jul 2017	1	22.32	75.34	8.1	33.55	8.3	23.0	2.27
I19	25 Jul 2017	2	22.32	75.30	7.9	33.55	8.3	23.0	2.49
I19	25 Jul 2017	3	21.91	75.15	7.8	33.55	8.3	23.1	2.89
I19	25 Jul 2017	4	20.86	73.68	8.1	33.54	8.2	23.4	3.48
I19	25 Jul 2017	5	19.62	71.04	7.8	33.50	8.2	23.7	4.95
I19	25 Jul 2017	6	16.98	74.13	6.5	33.48	8.2	24.4	5.65
I19	25 Jul 2017	7	15.56	71.94	5.5	33.39	8.1	24.6	5.72
I19	25 Jul 2017	8	14.57	64.51	5.6	33.36	8.0	24.8	5.55
I19	25 Jul 2017	9	14.34	57.92	5.8	33.32	8.0	24.8	5.51
I19	25 Jul 2017	10	14.23	55.25	6.0	33.31	8.0	24.8	5.10
I19	30 Jul 2017	1	19.85	79.68	7.8	33.49	8.2	23.6	1.14
I19	30 Jul 2017	2	19.83	79.72	7.7	33.49	8.2	23.7	1.22
I19	30 Jul 2017	3	19.70	79.58	7.4	33.50	8.2	23.7	1.38
I19	30 Jul 2017	4	19.25	79.38	7.4	33.51	8.2	23.8	1.53
I19	30 Jul 2017	5	19.01	77.70	7.4	33.49	8.2	23.9	1.82
I19	30 Jul 2017	6	18.07	77.00	7.6	33.54	8.2	24.1	2.07
I19	30 Jul 2017	7	16.62	77.66	7.6	33.49	8.1	24.4	2.57

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I19	30 Jul 2017	8	15.81	78.66	7.2	33.46	8.1	24.6	3.43
I19	30 Jul 2017	9	15.19	78.25	7.0	33.41	8.1	24.7	4.15
I19	30 Jul 2017	10	14.67	75.06	6.7	33.39	8.1	24.8	4.25
I24	06 Jul 2017	1	18.72	67.85	11.7	33.49	8.4	23.9	11.55
I24	06 Jul 2017	2	17.33	65.67	11.9	33.49	8.4	24.3	15.40
I24	06 Jul 2017	3	16.00	50.58	9.8	33.48	8.4	24.6	14.31
I24	06 Jul 2017	4	15.44	43.18	8.7	33.46	8.3	24.7	12.74
I24	06 Jul 2017	5	15.11	55.09	8.1	33.45	8.2	24.8	10.91
I24	06 Jul 2017	6	14.79	61.10	7.2	33.45	8.2	24.8	6.65
I24	06 Jul 2017	7	14.50	66.08	6.6	33.45	8.1	24.9	3.11
I24	06 Jul 2017	8	14.15	72.18	6.4	33.45	8.1	25.0	1.80
I24	06 Jul 2017	9	13.91	77.64	6.6	33.44	8.0	25.0	1.46
I24	06 Jul 2017	10	13.77	78.57	7.1	33.44	8.0	25.0	2.10
I24	12 Jul 2017	1	21.12	70.44	10.1	33.49	8.4	23.3	1.36
I24	12 Jul 2017	2	21.09	70.38	10.1	33.49	8.4	23.3	1.40
I24	12 Jul 2017	3	20.97	70.28	10.0	33.49	8.4	23.4	1.60
I24	12 Jul 2017	4	20.83	69.73	9.8	33.50	8.3	23.4	2.00
I24	12 Jul 2017	5	20.43	68.52	9.9	33.49	8.3	23.5	2.69
I24	12 Jul 2017	6	20.19	66.13	10.3	33.47	8.3	23.5	3.49
I24	12 Jul 2017	7	19.76	65.71	10.8	33.49	8.3	23.7	4.17
I24	12 Jul 2017	8	18.83	64.43	11.5	33.49	8.4	23.9	9.81
I24	12 Jul 2017	9	17.87	54.83	10.8	33.52	8.3	24.2	15.04
I24	12 Jul 2017	10	16.36	55.83	9.8	33.51	8.2	24.5	12.12
I24	12 Jul 2017	11	15.58	53.30	9.2	33.49	8.2	24.7	8.57
I24	18 Jul 2017	1	22.73	73.02	8.7	33.50	8.3	22.9	1.46
I24	18 Jul 2017	2	22.55	72.93	8.8	33.52	8.3	22.9	1.49
I24	18 Jul 2017	3	22.39	73.62	8.9	33.51	8.3	23.0	1.65
I24	18 Jul 2017	4	22.36	75.14	9.0	33.51	8.3	23.0	1.79
I24	18 Jul 2017	5	22.32	76.64	8.9	33.51	8.3	23.0	1.84
I24	18 Jul 2017	6	22.05	77.53	8.8	33.53	8.3	23.1	1.92
I24	18 Jul 2017	7	21.46	77.28	8.1	33.55	8.3	23.3	1.94
I24	18 Jul 2017	8	20.23	73.30	8.2	33.57	8.2	23.6	1.93
I24	18 Jul 2017	9	18.04	68.41	9.7	33.59	8.3	24.2	3.42
I24	18 Jul 2017	10	16.71	62.08	9.5	33.52	8.2	24.4	6.59
I24	25 Jul 2017	1	21.71	84.10	8.6	33.53	8.3	23.2	0.91
I24	25 Jul 2017	2	21.49	84.09	8.6	33.53	8.3	23.2	1.21
I24	25 Jul 2017	3	19.88	83.93	8.5	33.52	8.2	23.7	1.64
I24	25 Jul 2017	4	19.13	83.71	8.1	33.47	8.2	23.8	2.04
I24	25 Jul 2017	5	17.57	82.88	7.5	33.45	8.2	24.2	2.34
I24	25 Jul 2017	6	16.19	82.87	7.0	33.42	8.2	24.5	2.30
I24	25 Jul 2017	7	15.72	83.14	6.5	33.35	8.1	24.5	1.88
I24	25 Jul 2017	8	14.77	82.94	6.3	33.35	8.1	24.8	1.54
I24	25 Jul 2017	9	14.38	82.12	6.2	33.32	8.0	24.8	1.30
I24	25 Jul 2017	10	14.23	81.75	6.4	33.31	8.0	24.8	1.19
I24	25 Jul 2017	11	14.12	80.23	6.9	33.31	8.0	24.9	1.41
I24	30 Jul 2017	1	19.83	81.10	7.4	33.44	8.2	23.6	1.17
I24	30 Jul 2017	2	19.71	81.11	8.1	33.54	8.2	23.7	1.21
I24	30 Jul 2017	3	19.42	81.27	8.4	33.61	8.2	23.9	1.20
I24	30 Jul 2017	4	19.16	81.39	8.2	33.63	8.2	23.9	1.22
I24	30 Jul 2017	5	18.80	81.57	8.0	33.60	8.2	24.0	1.34

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I24	30 Jul 2017	6	18.53	81.70	7.9	33.56	8.2	24.0	1.46
I24	30 Jul 2017	7	18.08	81.62	7.7	33.64	8.2	24.2	1.60
I24	30 Jul 2017	8	17.29	81.28	7.2	33.69	8.2	24.4	1.63
I24	30 Jul 2017	9	15.08	81.10	6.7	34.00	8.1	25.2	1.61
I24	30 Jul 2017	10	14.15	76.97	6.6	33.60	8.0	25.1	2.45
I24	30 Jul 2017	11	14.07	71.44	6.7	33.52	8.0	25.0	2.76
I25	06 Jul 2017	1	19.24	72.34	10.9	33.49	8.4	23.8	2.20
I25	06 Jul 2017	2	19.24	72.32	10.9	33.47	8.4	23.8	6.99
I25	06 Jul 2017	3	17.16	70.49	10.8	33.52	8.3	24.3	12.49
I25	06 Jul 2017	4	16.51	67.74	9.1	33.48	8.3	24.5	12.81
I25	06 Jul 2017	5	15.32	52.88	7.9	33.48	8.3	24.7	13.27
I25	06 Jul 2017	6	14.65	51.87	7.0	33.46	8.2	24.9	11.72
I25	06 Jul 2017	7	14.31	60.30	6.0	33.44	8.1	24.9	7.25
I25	06 Jul 2017	8	13.84	65.47	6.1	33.45	8.0	25.0	4.17
I25	06 Jul 2017	9	13.79	71.37	6.6	33.44	8.0	25.0	3.88
I25	12 Jul 2017	1	20.89	72.68	11.3	33.48	8.4	23.4	1.29
I25	12 Jul 2017	2	20.86	72.54	11.3	33.48	8.4	23.4	1.31
I25	12 Jul 2017	3	20.82	72.24	11.3	33.48	8.4	23.4	1.41
I25	12 Jul 2017	4	20.21	71.48	11.6	33.50	8.4	23.6	1.82
I25	12 Jul 2017	5	19.56	67.27	11.5	33.49	8.4	23.7	3.12
I25	12 Jul 2017	6	19.13	57.92	11.2	33.47	8.4	23.8	6.10
I25	12 Jul 2017	7	18.81	52.82	10.8	33.46	8.3	23.9	9.49
I25	12 Jul 2017	8	17.68	55.14	9.6	33.50	8.2	24.2	11.09
I25	12 Jul 2017	9	17.31	57.80	9.2	33.46	8.2	24.3	9.74
I25	18 Jul 2017	1	22.64	77.44	8.6	33.51	8.3	22.9	1.07
I25	18 Jul 2017	2	22.58	77.40	8.6	33.51	8.3	22.9	1.04
I25	18 Jul 2017	3	22.30	77.67	9.0	33.52	8.3	23.0	1.17
I25	18 Jul 2017	4	22.21	77.61	9.1	33.51	8.3	23.0	1.51
I25	18 Jul 2017	5	22.18	77.53	9.0	33.51	8.3	23.0	1.76
I25	18 Jul 2017	6	22.10	78.96	8.9	33.52	8.3	23.1	1.86
I25	18 Jul 2017	7	21.50	79.42	9.1	33.57	8.3	23.3	2.17
I25	18 Jul 2017	8	20.16	75.39	10.2	33.53	8.3	23.6	2.80
I25	18 Jul 2017	9	19.99	73.95	10.3	33.48	8.3	23.6	2.86
I25	25 Jul 2017	1	21.75	83.53	8.7	33.53	8.3	23.2	0.83
I25	25 Jul 2017	2	21.74	83.74	8.6	33.54	8.3	23.2	0.96
I25	25 Jul 2017	3	21.55	83.64	8.4	33.54	8.3	23.2	1.21
I25	25 Jul 2017	4	20.49	83.33	7.9	33.53	8.3	23.5	1.51
I25	25 Jul 2017	5	18.63	83.46	7.4	33.52	8.2	24.0	1.80
I25	25 Jul 2017	6	16.51	83.74	7.0	33.47	8.2	24.5	1.94
I25	25 Jul 2017	7	15.11	84.10	6.8	33.39	8.1	24.7	1.75
I25	25 Jul 2017	8	14.65	83.64	7.0	33.34	8.1	24.8	1.56
I25	25 Jul 2017	9	14.50	82.79	7.3	33.31	8.0	24.8	1.58
I25	30 Jul 2017	1	20.11	79.71	7.4	33.48	8.2	23.6	1.10
I25	30 Jul 2017	2	20.05	81.28	7.4	33.56	8.2	23.6	1.12
I25	30 Jul 2017	3	19.67	81.16	7.7	33.75	8.2	23.9	1.14
I25	30 Jul 2017	4	18.53	81.47	7.9	33.95	8.2	24.3	1.17
I25	30 Jul 2017	5	18.00	81.95	8.1	33.89	8.2	24.4	1.19
I25	30 Jul 2017	6	17.58	81.45	8.0	33.73	8.2	24.4	1.10
I25	30 Jul 2017	7	17.16	80.80	7.7	33.67	8.2	24.5	1.49
I25	30 Jul 2017	8	16.66	79.85	7.3	33.69	8.2	24.6	1.78

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I25	30 Jul 2017	9	14.82	78.93	7.2	34.27	8.1	25.4	2.00
I26	06 Jul 2017	1	19.47	70.46	10.5	33.47	8.4	23.7	1.64
I26	06 Jul 2017	2	18.97	70.46	10.1	33.48	8.4	23.9	2.41
I26	06 Jul 2017	3	18.42	69.79	9.9	33.48	8.3	24.0	11.07
I26	06 Jul 2017	4	16.04	68.64	9.5	33.53	8.3	24.6	14.19
I26	06 Jul 2017	5	15.42	59.75	7.0	33.46	8.2	24.7	9.47
I26	06 Jul 2017	6	14.31	61.26	5.7	33.47	8.2	24.9	5.48
I26	06 Jul 2017	7	13.90	66.98	6.1	33.45	8.0	25.0	3.70
I26	06 Jul 2017	8	13.85	75.44	6.7	33.43	8.0	25.0	3.36
I26	06 Jul 2017	9	13.95	77.26	7.0	33.43	8.0	25.0	3.11
I26	12 Jul 2017	1	20.67	70.29	11.5	33.51	8.4	23.4	2.08
I26	12 Jul 2017	2	20.28	69.68	12.2	33.49	8.4	23.5	3.08
I26	12 Jul 2017	3	20.15	65.72	12.6	33.47	8.4	23.6	5.38
I26	12 Jul 2017	4	20.08	61.68	12.8	33.47	8.4	23.6	10.01
I26	12 Jul 2017	5	20.06	56.63	12.8	33.47	8.4	23.6	13.91
I26	12 Jul 2017	6	19.90	55.54	12.4	33.47	8.4	23.6	14.33
I26	12 Jul 2017	7	19.82	59.59	11.8	33.46	8.4	23.6	11.81
I26	12 Jul 2017	8	19.32	63.37	10.9	33.52	8.4	23.8	10.16
I26	12 Jul 2017	9	18.01	52.76	10.6	33.50	8.3	24.1	12.04
I26	18 Jul 2017	1	22.56	74.22	9.2	33.50	8.3	22.9	1.64
I26	18 Jul 2017	2	22.40	74.60	9.2	33.51	8.3	23.0	1.61
I26	18 Jul 2017	3	22.31	76.29	9.2	33.51	8.3	23.0	1.66
I26	18 Jul 2017	4	22.21	77.46	9.1	33.52	8.3	23.0	1.72
I26	18 Jul 2017	5	22.03	77.79	9.1	33.52	8.3	23.1	1.98
I26	18 Jul 2017	6	21.83	75.79	9.1	33.52	8.3	23.1	2.56
I26	18 Jul 2017	7	21.28	75.27	9.6	33.53	8.3	23.3	3.09
I26	18 Jul 2017	8	19.50	76.65	10.3	33.59	8.3	23.8	3.63
I26	18 Jul 2017	9	18.45	71.07	10.3	33.50	8.3	24.0	4.73
I26	25 Jul 2017	1	22.08	81.75	8.4	33.55	8.3	23.1	1.19
I26	25 Jul 2017	2	22.04	81.82	8.4	33.55	8.3	23.1	1.36
I26	25 Jul 2017	3	21.26	81.57	8.3	33.54	8.3	23.3	1.54
I26	25 Jul 2017	4	19.88	82.15	7.8	33.52	8.2	23.7	1.85
I26	25 Jul 2017	5	17.75	83.11	7.3	33.50	8.2	24.2	2.07
I26	25 Jul 2017	6	16.18	83.83	7.1	33.40	8.2	24.5	2.18
I26	25 Jul 2017	7	15.21	83.31	7.2	33.37	8.1	24.7	2.14
I26	25 Jul 2017	8	15.03	81.60	7.4	33.33	8.1	24.7	2.16
I26	25 Jul 2017	9	15.00	81.90	7.5	33.34	8.1	24.7	2.07
I26	30 Jul 2017	1	19.74	80.52	7.1	33.20	8.2	23.5	1.07
I26	30 Jul 2017	2	19.70	80.85	7.5	33.42	8.2	23.6	1.20
I26	30 Jul 2017	3	19.26	80.91	8.1	33.75	8.2	24.0	1.26
I26	30 Jul 2017	4	18.63	81.40	8.2	33.86	8.2	24.2	1.25
I26	30 Jul 2017	5	18.49	81.70	8.1	33.61	8.2	24.1	1.34
I26	30 Jul 2017	6	18.30	81.82	7.8	33.56	8.2	24.1	1.46
I26	30 Jul 2017	7	18.10	81.84	7.3	33.57	8.2	24.2	1.55
I26	30 Jul 2017	8	15.64	81.34	7.1	34.17	8.1	25.2	1.64
I26	30 Jul 2017	9	14.79	77.56	6.9	33.69	8.1	25.0	0.94
I32	06 Jul 2017	1	19.97	73.82	11.1	33.49	8.4	23.6	1.60
I32	06 Jul 2017	2	19.96	73.98	10.9	33.50	8.4	23.6	1.80
I32	06 Jul 2017	3	19.89	74.12	10.2	33.50	8.4	23.6	2.01



Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I32	06 Jul 2017	4	19.78	73.81	9.7	33.50	8.4	23.7	3.48
I32	06 Jul 2017	5	19.28	72.49	9.4	33.51	8.4	23.8	10.52
I32	06 Jul 2017	6	18.29	69.02	8.1	33.47	8.4	24.0	14.99
I32	06 Jul 2017	7	15.37	62.37	7.2	33.52	8.3	24.8	14.28
I32	06 Jul 2017	8	15.50	49.53	6.3	33.44	8.1	24.7	13.18
I32	06 Jul 2017	9	14.38	55.23	5.8	33.48	8.1	24.9	12.29
I32	06 Jul 2017	10	14.18	54.36	6.6	33.44	8.0	24.9	11.39
I32	12 Jul 2017	2	21.80	71.63	9.6	33.51	8.4	23.1	1.54
I32	12 Jul 2017	3	21.72	71.38	9.6	33.52	8.4	23.2	1.75
I32	12 Jul 2017	4	21.70	71.34	9.5	33.51	8.4	23.2	1.92
I32	12 Jul 2017	5	21.56	71.38	9.6	33.52	8.4	23.2	2.09
I32	12 Jul 2017	6	21.46	70.85	9.7	33.51	8.4	23.2	2.38
I32	12 Jul 2017	7	21.43	70.15	9.6	33.50	8.4	23.2	2.68
I32	12 Jul 2017	8	21.41	69.68	9.5	33.50	8.4	23.2	2.87
I32	12 Jul 2017	9	21.36	68.67	9.2	33.50	8.4	23.3	2.99
I32	12 Jul 2017	10	20.76	64.67	8.8	33.55	8.3	23.5	3.27
I32	18 Jul 2017	1	22.53	75.72	9.0	33.51	8.3	22.9	1.26
I32	18 Jul 2017	2	22.50	75.61	9.0	33.51	8.3	22.9	1.27
I32	18 Jul 2017	3	22.40	75.32	8.9	33.51	8.3	23.0	1.49
I32	18 Jul 2017	4	22.29	74.66	8.9	33.51	8.3	23.0	1.71
I32	18 Jul 2017	5	22.13	74.01	9.1	33.52	8.3	23.1	1.88
I32	18 Jul 2017	6	21.92	75.10	9.0	33.53	8.3	23.1	2.03
I32	18 Jul 2017	7	20.81	74.15	8.6	33.59	8.3	23.5	2.46
I32	18 Jul 2017	8	18.73	54.66	8.2	33.58	8.2	24.0	5.17
I32	18 Jul 2017	9	16.95	45.21	8.0	33.53	8.2	24.4	8.99
I32	18 Jul 2017	10	16.72	48.56	8.1	33.46	8.2	24.4	8.71
I32	25 Jul 2017	1	22.71	77.28	7.9	33.56	8.3	22.9	1.39
I32	25 Jul 2017	2	22.48	77.44	8.1	33.59	8.3	23.0	1.41
I32	25 Jul 2017	3	19.78	78.10	8.4	33.68	8.2	23.8	1.55
I32	25 Jul 2017	4	18.34	80.27	8.2	33.54	8.2	24.1	1.77
I32	25 Jul 2017	5	17.44	82.14	7.9	33.50	8.2	24.3	2.20
I32	25 Jul 2017	6	16.57	82.63	7.9	33.45	8.2	24.4	2.42
I32	25 Jul 2017	7	16.40	81.44	7.8	33.40	8.2	24.4	2.64
I32	25 Jul 2017	8	16.28	80.33	7.8	33.38	8.1	24.4	2.78
I32	25 Jul 2017	9	16.14	79.08	7.8	33.37	8.1	24.5	2.87
I32	25 Jul 2017	10	15.86	78.78	7.9	33.37	8.1	24.5	2.99
I32	30 Jul 2017	1	19.67	78.42	8.0	33.48	8.2	23.7	1.11
I32	30 Jul 2017	2	19.59	78.43	7.9	33.48	8.2	23.7	1.19
I32	30 Jul 2017	3	19.44	78.31	7.8	33.48	8.2	23.7	1.32
I32	30 Jul 2017	4	19.31	78.06	7.8	33.48	8.2	23.8	1.42
I32	30 Jul 2017	5	19.03	78.35	7.8	33.48	8.2	23.9	1.47
I32	30 Jul 2017	6	18.85	78.81	7.6	33.47	8.2	23.9	1.54
I32	30 Jul 2017	7	18.75	79.13	7.5	33.46	8.2	23.9	1.57
I32	30 Jul 2017	8	18.36	79.33	7.3	33.50	8.2	24.0	1.89
I32	30 Jul 2017	9	16.14	78.64	7.2	33.56	8.1	24.6	2.59
I32	30 Jul 2017	10	14.90	77.57	7.6	33.51	8.1	24.8	2.89
I39	06 Jul 2017	1	19.36	74.57	11.8	33.49	8.4	23.8	1.64
I39	06 Jul 2017	2	19.20	74.85	11.9	33.50	8.4	23.8	2.06
I39	06 Jul 2017	3	19.14	74.19	11.9	33.49	8.4	23.8	2.30
I39	06 Jul 2017	4	19.16	74.39	11.9	33.49	8.4	23.8	2.62

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I39	06 Jul 2017	5	19.11	74.67	11.8	33.49	8.4	23.8	2.74
I39	06 Jul 2017	6	19.13	75.02	11.8	33.49	8.4	23.8	2.84
I39	06 Jul 2017	7	19.14	75.09	11.9	33.49	8.4	23.8	3.09
I39	06 Jul 2017	8	19.14	75.15	11.9	33.49	8.4	23.8	3.78
I39	06 Jul 2017	9	19.07	74.78	12.0	33.49	8.4	23.9	4.36
I39	06 Jul 2017	10	19.00	74.07	12.1	33.49	8.4	23.9	5.73
I39	06 Jul 2017	11	18.99	71.90	12.3	33.49	8.4	23.9	8.43
I39	06 Jul 2017	12	18.57	66.99	12.5	33.50	8.4	24.0	9.86
I39	06 Jul 2017	13	17.84	64.44	11.9	33.51	8.4	24.2	10.67
I39	06 Jul 2017	14	17.46	60.64	9.5	33.48	8.4	24.2	10.74
I39	06 Jul 2017	15	16.06	59.57	7.0	33.51	8.3	24.6	10.69
I39	06 Jul 2017	16	14.99	66.53	5.5	33.48	8.2	24.8	9.31
I39	06 Jul 2017	17	13.64	71.82	5.4	33.48	8.1	25.1	8.67
I39	06 Jul 2017	18	13.11	76.82	8.0	33.44	8.0	25.2	9.52
I39	12 Jul 2017	1	21.12	72.54	10.7	33.51	8.4	23.3	1.41
I39	12 Jul 2017	2	20.72	72.31	11.2	33.52	8.4	23.4	1.53
I39	12 Jul 2017	3	20.44	71.64	11.8	33.48	8.4	23.5	2.27
I39	12 Jul 2017	4	20.33	69.42	12.0	33.48	8.4	23.5	3.42
I39	12 Jul 2017	5	19.32	67.84	13.0	33.53	8.4	23.8	4.87
I39	12 Jul 2017	6	18.49	61.96	13.8	33.50	8.4	24.0	7.91
I39	12 Jul 2017	7	17.77	61.25	13.1	33.48	8.4	24.2	10.45
I39	12 Jul 2017	8	17.63	62.25	12.6	33.45	8.4	24.2	12.40
I39	12 Jul 2017	9	17.60	62.80	12.6	33.45	8.4	24.2	12.97
I39	12 Jul 2017	10	17.60	63.15	12.5	33.45	8.4	24.2	12.98
I39	12 Jul 2017	11	17.54	63.36	12.1	33.46	8.4	24.2	13.13
I39	12 Jul 2017	12	16.58	63.25	11.0	33.55	8.3	24.5	13.93
I39	12 Jul 2017	13	15.17	62.57	9.2	33.54	8.2	24.8	13.81
I39	12 Jul 2017	14	14.10	68.32	7.8	33.54	8.1	25.0	9.64
I39	12 Jul 2017	15	13.59	73.03	6.6	33.47	8.0	25.1	5.66
I39	12 Jul 2017	16	13.53	74.40	6.2	33.44	7.9	25.1	4.15
I39	12 Jul 2017	17	13.49	74.30	6.2	33.45	7.9	25.1	3.24
I39	12 Jul 2017	18	13.49	74.12	6.1	33.45	7.9	25.1	3.00
I39	18 Jul 2017	1	22.22	87.38	9.2	33.52	8.3	23.0	0.43
I39	18 Jul 2017	2	22.07	85.42	9.3	33.53	8.3	23.1	0.45
I39	18 Jul 2017	3	21.98	84.85	9.3	33.52	8.3	23.1	0.45
I39	18 Jul 2017	4	21.96	86.26	9.3	33.52	8.3	23.1	0.49
I39	18 Jul 2017	5	21.93	86.20	9.3	33.52	8.3	23.1	0.54
I39	18 Jul 2017	6	21.81	86.04	9.4	33.53	8.3	23.2	0.62
I39	18 Jul 2017	7	21.39	86.34	9.8	33.54	8.3	23.3	0.71
I39	18 Jul 2017	8	20.92	85.74	10.2	33.52	8.3	23.4	0.98
I39	18 Jul 2017	9	19.29	84.05	10.3	33.65	8.3	23.9	1.33
I39	18 Jul 2017	10	17.57	80.85	10.6	33.52	8.3	24.2	2.04
I39	18 Jul 2017	11	16.57	76.63	10.3	33.51	8.3	24.5	2.94
I39	18 Jul 2017	12	15.96	76.48	10.0	33.43	8.2	24.5	3.47
I39	18 Jul 2017	13	15.41	78.15	9.6	33.46	8.2	24.7	3.96
I39	18 Jul 2017	14	14.82	78.49	9.1	33.40	8.2	24.8	4.30
I39	18 Jul 2017	15	14.44	78.00	8.8	33.38	8.2	24.8	4.95
I39	18 Jul 2017	16	14.17	80.05	8.5	33.36	8.1	24.9	5.04
I39	18 Jul 2017	17	14.05	82.61	8.1	33.38	8.1	24.9	4.65
I39	18 Jul 2017	18	14.01	83.95	7.8	33.38	8.1	24.9	3.56
I39	25 Jul 2017	1	22.09	84.08	8.8	33.51	8.2	23.1	1.02
I39	25 Jul 2017	2	22.13	84.16	8.7	33.52	8.2	23.1	1.13

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I39	25 Jul 2017	3	21.43	84.01	8.7	33.54	8.2	23.3	1.33
I39	25 Jul 2017	4	18.99	84.25	8.8	33.52	8.2	23.9	1.67
I39	25 Jul 2017	5	18.62	84.60	8.0	33.41	8.2	23.9	2.38
I39	25 Jul 2017	6	17.19	83.83	7.2	33.44	8.2	24.3	2.52
I39	25 Jul 2017	7	15.23	82.64	7.0	33.42	8.1	24.7	2.16
I39	25 Jul 2017	8	14.65	83.56	6.9	33.33	8.0	24.8	1.82
I39	25 Jul 2017	9	14.12	87.09	6.7	33.31	8.0	24.9	1.57
I39	25 Jul 2017	10	13.80	88.43	6.5	33.29	8.0	24.9	1.34
I39	25 Jul 2017	11	13.47	89.19	6.4	33.29	8.0	25.0	1.32
I39	25 Jul 2017	12	13.18	90.06	6.3	33.28	8.0	25.0	1.18
I39	25 Jul 2017	13	13.07	90.51	6.3	33.28	7.9	25.0	1.10
I39	25 Jul 2017	14	13.00	90.56	6.3	33.29	7.9	25.1	1.22
I39	25 Jul 2017	15	12.98	90.18	6.4	33.29	7.9	25.1	1.18
I39	25 Jul 2017	16	12.98	90.14	6.4	33.29	7.9	25.1	1.11
I39	25 Jul 2017	17	12.97	90.13	6.3	33.30	7.9	25.1	1.05
I39	25 Jul 2017	18	12.97	89.88	6.4	33.30	7.9	25.1	1.13
I39	30 Jul 2017	1	20.05	80.53	8.0	33.52	8.2	23.6	1.26
I39	30 Jul 2017	2	19.88	80.54	7.7	33.53	8.2	23.7	1.42
I39	30 Jul 2017	3	19.09	80.86	7.5	33.55	8.2	23.9	1.81
I39	30 Jul 2017	4	17.89	81.35	7.4	33.55	8.2	24.2	2.38
I39	30 Jul 2017	5	16.60	81.58	7.4	33.51	8.2	24.5	2.88
I39	30 Jul 2017	6	15.81	81.29	7.1	33.45	8.1	24.6	3.10
I39	30 Jul 2017	7	15.26	80.53	6.6	33.41	8.1	24.7	2.50
I39	30 Jul 2017	8	14.84	81.16	6.3	33.37	8.1	24.8	2.04
I39	30 Jul 2017	9	13.68	82.00	6.3	33.39	8.0	25.0	1.87
I39	30 Jul 2017	10	13.40	85.41	6.4	33.33	8.0	25.0	1.71
I39	30 Jul 2017	11	13.37	86.70	6.5	33.32	8.0	25.0	1.68
I39	30 Jul 2017	12	13.36	86.90	6.5	33.31	8.0	25.0	1.66
I39	30 Jul 2017	13	13.33	87.08	6.5	33.31	8.0	25.0	1.57
I39	30 Jul 2017	14	13.31	87.30	6.5	33.31	8.0	25.0	1.48
I39	30 Jul 2017	15	13.25	87.51	6.5	33.31	8.0	25.0	1.45
I39	30 Jul 2017	16	13.23	87.18	6.5	33.31	8.0	25.0	1.41
I39	30 Jul 2017	17	13.22	86.80	6.6	33.32	8.0	25.0	1.41
I39	30 Jul 2017	18	13.23	86.20	6.6	33.32	8.0	25.0	1.44
I40	06 Jul 2017	1	19.26	66.26	9.2	33.45	8.3	23.8	5.12
I40	06 Jul 2017	2	18.57	66.07	8.6	33.47	8.3	24.0	8.12
I40	06 Jul 2017	3	15.89	60.61	8.0	33.55	8.2	24.7	8.34
I40	06 Jul 2017	4	15.13	53.59	7.9	33.49	8.1	24.8	8.64
I40	06 Jul 2017	5	14.80	61.49	8.4	33.46	8.1	24.8	11.75
I40	06 Jul 2017	6	14.70	68.55	9.2	33.44	8.1	24.8	15.20
I40	06 Jul 2017	7	14.52	67.80	9.2	33.43	8.1	24.9	15.38
I40	06 Jul 2017	8	14.43	64.74	8.2	33.43	8.2	24.9	12.11
I40	06 Jul 2017	9	14.29	63.59	7.0	33.43	8.1	24.9	8.41
I40	06 Jul 2017	10	13.93	67.61	7.1	33.45	8.1	25.0	8.27
I40	12 Jul 2017	1	20.58	67.76	9.7	33.46	8.3	23.4	1.45
I40	12 Jul 2017	2	20.51	67.84	9.8	33.47	8.3	23.5	1.50
I40	12 Jul 2017	3	19.71	67.45	11.1	33.50	8.3	23.7	1.70
I40	12 Jul 2017	4	19.16	68.47	12.2	33.48	8.4	23.8	2.23
I40	12 Jul 2017	5	18.97	64.43	12.3	33.45	8.4	23.8	5.17
I40	12 Jul 2017	6	18.26	54.36	12.0	33.49	8.4	24.1	10.79
I40	12 Jul 2017	7	17.85	52.72	11.4	33.46	8.3	24.1	14.87
I40	12 Jul 2017	8	17.53	53.40	10.5	33.46	8.3	24.2	14.23

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I40	12 Jul 2017	9	17.16	49.16	10.1	33.48	8.3	24.3	11.50
I40	12 Jul 2017	10	16.58	51.06	9.8	33.48	8.2	24.4	9.95
I40	18 Jul 2017	1	22.79	76.69	7.7	33.49	8.2	22.8	1.33
I40	18 Jul 2017	2	22.74	76.54	7.8	33.50	8.2	22.9	1.44
I40	18 Jul 2017	3	22.47	76.30	8.6	33.52	8.3	23.0	1.70
I40	18 Jul 2017	4	22.26	75.97	9.0	33.53	8.3	23.0	2.02
I40	18 Jul 2017	5	22.16	77.51	8.9	33.52	8.3	23.1	2.06
I40	18 Jul 2017	6	22.02	80.55	8.7	33.53	8.3	23.1	2.05
I40	18 Jul 2017	7	21.45	79.71	8.9	33.55	8.3	23.3	2.41
I40	18 Jul 2017	8	20.70	75.45	9.5	33.54	8.3	23.5	3.23
I40	18 Jul 2017	9	19.36	74.47	9.4	33.60	8.3	23.9	4.03
I40	18 Jul 2017	10	17.40	70.39	9.1	33.62	8.2	24.4	4.70
I40	25 Jul 2017	1	21.55	78.72	8.6	33.52	8.2	23.2	1.36
I40	25 Jul 2017	2	20.92	79.07	8.9	33.53	8.2	23.4	1.59
I40	25 Jul 2017	3	19.73	81.57	8.3	33.51	8.2	23.7	2.19
I40	25 Jul 2017	4	18.39	82.26	7.9	33.49	8.2	24.0	2.66
I40	25 Jul 2017	5	17.15	81.66	7.4	33.44	8.2	24.3	3.09
I40	25 Jul 2017	6	16.16	80.90	7.0	33.41	8.1	24.5	3.18
I40	25 Jul 2017	7	15.57	80.45	6.7	33.38	8.1	24.6	2.66
I40	25 Jul 2017	8	15.31	79.73	6.3	33.35	8.1	24.6	2.19
I40	25 Jul 2017	9	14.81	79.76	6.2	33.34	8.1	24.7	1.95
I40	25 Jul 2017	10	14.24	78.80	6.5	33.34	8.0	24.9	1.96
I40	30 Jul 2017	1	19.75	80.23	7.9	33.47	8.2	23.7	1.06
I40	30 Jul 2017	2	19.69	80.51	7.2	33.51	8.2	23.7	1.15
I40	30 Jul 2017	3	19.64	80.40	7.5	33.54	8.2	23.7	1.20
I40	30 Jul 2017	4	19.55	80.52	7.9	33.54	8.2	23.8	1.26
I40	30 Jul 2017	5	19.45	80.48	7.9	33.56	8.2	23.8	1.27
I40	30 Jul 2017	6	19.07	80.15	7.4	33.66	8.2	24.0	1.27
I40	30 Jul 2017	7	17.48	79.60	6.7	34.00	8.2	24.6	1.34
I40	30 Jul 2017	8	15.49	74.02	6.1	34.02	8.1	25.1	1.52
I40	30 Jul 2017	9	14.37	61.37	6.1	33.81	8.0	25.2	1.75
I40	30 Jul 2017	10	14.05	57.45	6.2	33.67	8.0	25.2	2.18

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Entero
I19	06 Jul 2017	6	ZV	LAB DUPLICATE	<20	<2	<2
I19	12 Jul 2017	6	ZV	LAB DUPLICATE	20e	<2	2e
I19	18 Jul 2017	6	ZV	LAB DUPLICATE	<20	<2	<2
I19	25 Jul 2017	6	AE	LAB DUPLICATE	<20	ns	ns
I19	25 Jul 2017	6	ZV	LAB DUPLICATE	ns	<2	<2
I19	30 Jul 2017	6	LMA	LAB DUPLICATE	30e	<2	4e
I40	06 Jul 2017	6	ZV	LAB DUPLICATE	<20	<2	<2
I40	12 Jul 2017	6	ZV	LAB DUPLICATE	<20	<2	<2
I40	18 Jul 2017	6	ZV	LAB DUPLICATE	<2	<2	<2
I40	25 Jul 2017	6	AE	LAB DUPLICATE	2e	ns	ns
I40	25 Jul 2017	6	ZV	LAB DUPLICATE	ns	<2	<2
I40	30 Jul 2017	6	LMA	LAB DUPLICATE	<2	2e	<2
S12	05 Jul 2017		LMA	FIELD DUPLICATE	20e	4e	6e
S12	05 Jul 2017		LMA	LAB DUPLICATE	<20	2e	2e
S12	11 Jul 2017		LMA	FIELD DUPLICATE	20e	4e	2e
S12	11 Jul 2017		LMA	LAB DUPLICATE	20e	4e	4e
S12	18 Jul 2017		ZV	FIELD DUPLICATE	<20	4e	<2
S12	18 Jul 2017		ZV	LAB DUPLICATE	<20	2e	<2
S12	25 Jul 2017		JT	FIELD DUPLICATE	20e	6e	4e
S12	25 Jul 2017		JT	LAB DUPLICATE	40e	8e	2e

ns = not sampled

ND = no data

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