

# **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

# **SEPTEMBER 2016**

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







THE CITY OF SAN DIEGO

October 31, 2016

David 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 September 2016 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

TDS/asb

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

**Environmental Monitoring and Technical Services Division • Public Utilities**

2392 Kincaid Road • San Diego, CA 92101-0811  
Tel (619) 758-2300 Fax (619) 758-2309





## 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.

---

<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 2016 Quality Assurance Report, which will be completed in March 2017.

## **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 September, each of the eight shore stations located north of the border was in compliance with various 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 the seawater samples collected at stations S0, S2, and S3 on one or more days during the month.

- Historical analyses of Ocean Plan compliance rates for the South Bay outfall shoreline monitoring stations, combined with the results of satellite imagery data, suggest that outflows from the Tijuana River and Los Buenos Creek, as well as surface runoff during or after rain events (storms), are likely to be the cause of impacted water quality along the shore and in near shore recreational waters in the South Bay region. See the City of San Diego's most recent *South Bay Ocean Outfall Annual Receiving Waters Monitoring and Assessment Report* for details (<http://www.sandiego.gov/mwwd/environment/oceanmonitor/reports/index.shtml>).
  - Notable visual observations for September included: storm drain run-off at stations S0, S2, and S3 on one or more days during the month.
- **Kelp Bed Water Quality Sampling**
- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled five times during September (i.e. September 1, 6, 14, 19, 25).
  - During September, each of the seven stations was in compliance with various California Ocean Plan (Ocean Plan) water contact standards.
  - Water column temperatures ranged from 13.52 to 20.65°C. The difference between surface and bottom waters ranged from approximately 1.92 to 5.46°C, indicating the water column was stratified at these sites during the month.
  - Chlorophyll *a* concentrations ranged from 0.9 to 12.12 µg/L at these stations, suggesting the presence of phytoplankton blooms during the month.
  - Nothing of sewage origin was observed at any of the kelp bed stations.
- **Offshore Water Quality Sampling**
- Quarterly sampling was not conducted during September at the offshore stations. The next quarterly sampling is scheduled for November 2016.



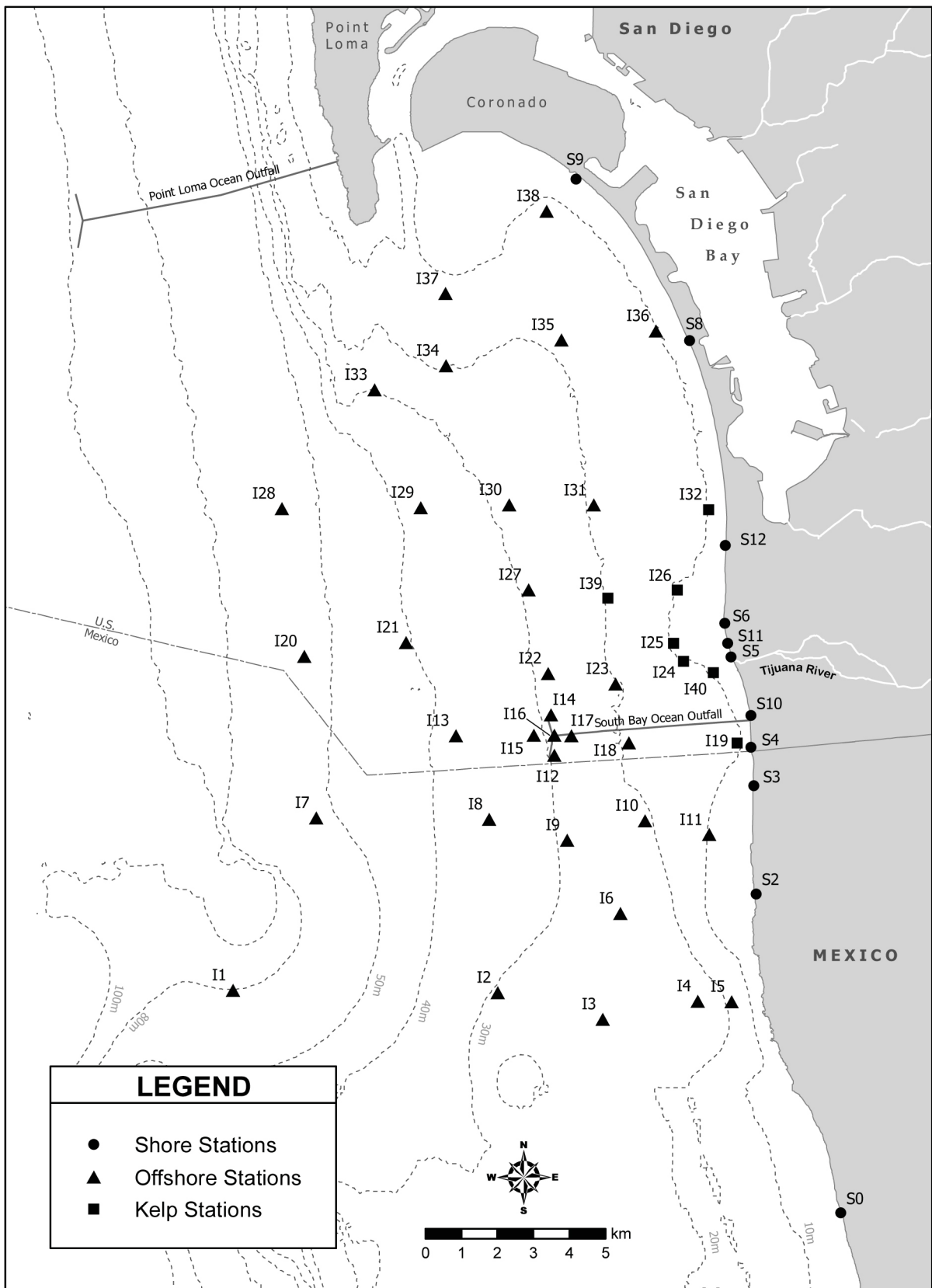


Figure 1.1 Station Map



# Shore Stations



**Table 2.1**

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Sep 2016	24*	11*	20*	11*	28*	20*	18*	16*
02 Sep 2016	24*	11*	20*	11*	28*	20*	18*	16*
03 Sep 2016	24*	11*	20*	11*	28*	20*	18*	16*
04 Sep 2016	24*	11*	20*	11*	28*	20*	18*	16*
05 Sep 2016	24*	11*	20*	11*	28*	20*	18*	16*
06 Sep 2016	23	11	20	8	26	23	12	17
07 Sep 2016	23	11	20	8	26	23	12	17
08 Sep 2016	42*	16*	20*	6*	24*	24*	11*	16*
09 Sep 2016	42*	16*	20*	6*	24*	24*	11*	16*
10 Sep 2016	42*	16*	20*	6*	24*	24*	11*	16*
11 Sep 2016	42*	16*	20*	6*	24*	24*	11*	16*
12 Sep 2016	42*	16*	20*	6*	24*	24*	11*	16*
13 Sep 2016	26	11	13	5	23	14	10	11
14 Sep 2016	26	11	13	5	23	14	10	11
15 Sep 2016	16*	9*	11*	4*	24*	13*	8*	9*
16 Sep 2016	16*	9*	11*	4*	24*	13*	8*	9*
17 Sep 2016	16*	9*	11*	4*	24*	13*	8*	9*
18 Sep 2016	16*	9*	11*	4*	24*	13*	8*	9*
19 Sep 2016	16*	9*	11*	4*	24*	13*	8*	9*
20 Sep 2016	32	11	8	5	23	9	6	11
21 Sep 2016	32	11	8	5	23	9	6	11
22 Sep 2016	31*	9*	6*	4*	20*	8*	5*	9*
23 Sep 2016	31*	9*	6*	4*	20*	8*	5*	9*
24 Sep 2016	31*	9*	6*	4*	20*	8*	5*	9*
25 Sep 2016	31*	9*	6*	4*	20*	8*	5*	9*
26 Sep 2016	31*	9*	6*	4*	20*	8*	5*	9*
27 Sep 2016	28	17	9	3	20	10	6	11
28 Sep 2016	28	17	9	3	20	10	6	11
29 Sep 2016	31*	16*	8*	4*	20*	8*	5*	11*
30 Sep 2016	31*	16*	8*	4*	20*	8*	5*	11*

\* 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 Sep 2016	4*	3*	3*	2*	6*	4*	2*	5*
02 Sep 2016	4*	3*	3*	2*	6*	4*	2*	5*
03 Sep 2016	4*	3*	3*	2*	6*	4*	2*	5*
04 Sep 2016	4*	3*	3*	2*	6*	4*	2*	5*
05 Sep 2016	4*	3*	3*	2*	6*	4*	2*	5*
06 Sep 2016	4	2	2	2	5	5	2	4
07 Sep 2016	4	2	2	2	5	5	2	4
08 Sep 2016	4*	3*	3*	2*	3*	6*	2*	4*
09 Sep 2016	4*	3*	3*	2*	3*	6*	2*	4*
10 Sep 2016	4*	3*	3*	2*	3*	6*	2*	4*
11 Sep 2016	4*	3*	3*	2*	3*	6*	2*	4*
12 Sep 2016	4*	3*	3*	2*	3*	6*	2*	4*
13 Sep 2016	4	2	2	3	3	5	2	3
14 Sep 2016	4	2	2	3	3	5	2	3
15 Sep 2016	3*	3*	3*	4*	3*	6*	2*	4*
16 Sep 2016	3*	3*	3*	4*	3*	6*	2*	4*
17 Sep 2016	3*	3*	3*	4*	3*	6*	2*	4*
18 Sep 2016	3*	3*	3*	4*	3*	6*	2*	4*
19 Sep 2016	3*	3*	3*	4*	3*	6*	2*	4*
20 Sep 2016	5	3	2	3	5	5	2	5
21 Sep 2016	5	3	2	3	5	5	2	5
22 Sep 2016	4*	3*	3*	4*	4*	4*	2*	5*
23 Sep 2016	4*	3*	3*	4*	4*	4*	2*	5*
24 Sep 2016	4*	3*	3*	4*	4*	4*	2*	5*
25 Sep 2016	4*	3*	3*	4*	4*	4*	2*	5*
26 Sep 2016	4*	3*	3*	4*	4*	4*	2*	5*
27 Sep 2016	4	4	2	3	4	3	2	5
28 Sep 2016	4	4	2	3	4	3	2	5
29 Sep 2016	4*	4*	2*	4*	4*	3*	2*	5*
30 Sep 2016	4*	4*	2*	4*	4*	3*	2*	5*

\* 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 Sep 2016	8*	3*	2*	2*	5*	5*	2*	2*
02 Sep 2016	8*	3*	2*	2*	5*	5*	2*	2*
03 Sep 2016	8*	3*	2*	2*	5*	5*	2*	2*
04 Sep 2016	8*	3*	2*	2*	5*	5*	2*	2*
05 Sep 2016	8*	3*	2*	2*	5*	5*	2*	2*
06 Sep 2016	6	3	2	2	4	7	2	2
07 Sep 2016	6	3	2	2	4	7	2	2
08 Sep 2016	8*	3*	2*	2*	3*	5*	2*	3*
09 Sep 2016	8*	3*	2*	2*	3*	5*	2*	3*
10 Sep 2016	8*	3*	2*	2*	3*	5*	2*	3*
11 Sep 2016	8*	3*	2*	2*	3*	5*	2*	3*
12 Sep 2016	8*	3*	2*	2*	3*	5*	2*	3*
13 Sep 2016	6	2	2	2	4	4	2	2
14 Sep 2016	6	2	2	2	4	4	2	2
15 Sep 2016	6*	2*	2*	2*	5*	5*	2*	3*
16 Sep 2016	6*	2*	2*	2*	5*	5*	2*	3*
17 Sep 2016	6*	2*	2*	2*	5*	5*	2*	3*
18 Sep 2016	6*	2*	2*	2*	5*	5*	2*	3*
19 Sep 2016	6*	2*	2*	2*	5*	5*	2*	3*
20 Sep 2016	10	2	2	2	5	4	2	3
21 Sep 2016	10	2	2	2	5	4	2	3
22 Sep 2016	11*	2*	2*	2*	4*	5*	2*	4*
23 Sep 2016	11*	2*	2*	2*	4*	5*	2*	4*
24 Sep 2016	11*	2*	2*	2*	4*	5*	2*	4*
25 Sep 2016	11*	2*	2*	2*	4*	5*	2*	4*
26 Sep 2016	11*	2*	2*	2*	4*	5*	2*	4*
27 Sep 2016	8	3	2	2	3	4	2	4
28 Sep 2016	8	3	2	2	3	4	2	4
29 Sep 2016	5*	3*	2*	2*	4*	3*	2*	5*
30 Sep 2016	5*	3*	2*	2*	4*	3*	2*	5*

\* 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>
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
13 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
27 Sep 2016	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>
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
13 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
27 Sep 2016	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>
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
13 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
27 Sep 2016	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>
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
13 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
20 Sep 2016	IC	IC	IC	IC	IC	IC	IC	IC
27 Sep 2016	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	06 Sep 2016	1346	500	16e	90	0.03
S0	13 Sep 2016	955	60e	6e	16e	0.10
S0	20 Sep 2016	1145	280e	54	100e	0.19
S0	27 Sep 2016	945	4800	120e	440	0.02
S2	06 Sep 2016	1125	20e	<2	<2	0.10
S2	13 Sep 2016	1055	2e	<2	<2	1.00
S2	20 Sep 2016	1300	3000e	180e	2400e	0.06
S2	27 Sep 2016	1040	<2	<2	2e	1.00
S3	06 Sep 2016	1020	2e	<2	<2	1.00
S3	13 Sep 2016	1150	<2	<2	<2	1.00
S3	20 Sep 2016	1245	>16000	5600	9600	0.35
S3	27 Sep 2016	1130	20e	<2	<2	0.10
S4	06 Sep 2016	1153	<20	<2	<2	0.10
S4	13 Sep 2016	1256	4e	<2	<2	0.50
S4	20 Sep 2016	1238	560	40	70	0.07
S4	27 Sep 2016	900	20e	<2	<2	0.10
S5	06 Sep 2016	1021	8e	<2	<2	0.25
S5	13 Sep 2016	1053	2e	<2	<2	1.00
S5	20 Sep 2016	1039	<20	6e	<2	0.30
S5	27 Sep 2016	1011	200e	8e	16e	0.04
S6	06 Sep 2016	1009	20e	<2	<2	0.10
S6	13 Sep 2016	1036	<2	<2	<2	1.00
S6	20 Sep 2016	1015	<2	<2	<2	1.00
S6	27 Sep 2016	1025	40e	2e	<2	0.05
S8	06 Sep 2016	927	<2	<2	<2	1.00
S8	13 Sep 2016	956	<2	<20	<2	10.00
S8	20 Sep 2016	935	<20	<2	<2	0.10
S8	27 Sep 2016	1206	<2	<2	2e	1.00
S9	06 Sep 2016	901	<20	<2	<2	0.10
S9	13 Sep 2016	933	<20	<2	10e	0.10
S9	20 Sep 2016	914	20e	20e	6e	1.00
S9	27 Sep 2016	1240	<20	4e	<2	0.20
S10	06 Sep 2016	1143	40e	12e	16e	0.30
S10	13 Sep 2016	1244	<2	<2	<2	1.00
S10	20 Sep 2016	1232	<2	2e	<2	1.00
S10	27 Sep 2016	854	28e	2e	<2	0.07
S11	06 Sep 2016	1014	2e	<2	<2	1.00
S11	13 Sep 2016	1042	6e	<2	<2	0.33
S11	20 Sep 2016	1021	<2	<2	2e	1.00
S11	27 Sep 2016	1020	20e	4e	2e	0.20

Station	Date	Time	Total	Fecal	Entero	F:T
S12	06 Sep 2016	957	<20	<2	6e	0.10
S12	13 Sep 2016	1024	<2	2e	<2	1.00
S12	20 Sep 2016	1001	<20	20e	10e	1.00
S12	27 Sep 2016	954	20e	10e	4e	0.50

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	06 Sep 2016	Arrive Time	1346
S0	06 Sep 2016	Weather	Sunny
S0	06 Sep 2016	Wind Speed (kts)	2.1
S0	06 Sep 2016	Wind Dir	N
S0	06 Sep 2016	Animal Life	5 Dogs; >20 Seagulls
S0	06 Sep 2016	Floatables	None
S0	06 Sep 2016	Water Color	Green
S0	06 Sep 2016	Current Direction	N
S0	06 Sep 2016	Water Temp (C)	19
S0	06 Sep 2016	Wave Height Low (ft)	2
S0	06 Sep 2016	High Tide (ft)	4.6
S0	06 Sep 2016	High Tide Time	1230
S0	06 Sep 2016	Low Tide (ft)	1.6
S0	06 Sep 2016	Low Tide Time	1921
S0	06 Sep 2016	Comments	Kelp; Water turbid; Flow from storm drain 1L/sec
S0	13 Sep 2016	Arrive Time	955
S0	13 Sep 2016	Weather	Cloudy
S0	13 Sep 2016	Wind Speed (kts)	0.3
S0	13 Sep 2016	Wind Dir	SE
S0	13 Sep 2016	Animal Life	2 Pelicans; 15 Seagulls
S0	13 Sep 2016	Floatables	None
S0	13 Sep 2016	Water Color	Green
S0	13 Sep 2016	Current Direction	N
S0	13 Sep 2016	Water Temp (C)	18
S0	13 Sep 2016	Wave Height Low (ft)	2
S0	13 Sep 2016	High Tide (ft)	4.4
S0	13 Sep 2016	High Tide Time	757
S0	13 Sep 2016	Low Tide (ft)	1.7
S0	13 Sep 2016	Low Tide Time	1329
S0	13 Sep 2016	Comments	Kelp; Seagrass; Algae; Water clear; No flow from storm drain
S0	20 Sep 2016	Arrive Time	1145
S0	20 Sep 2016	Weather	Moderate Rain
S0	20 Sep 2016	Wind Speed (kts)	0.5
S0	20 Sep 2016	Wind Dir	SE
S0	20 Sep 2016	Animal Life	>20 Shorebirds; 10 Pelicans
S0	20 Sep 2016	Floatables	None
S0	20 Sep 2016	Water Color	Green
S0	20 Sep 2016	Current Direction	N
S0	20 Sep 2016	Water Temp (C)	19
S0	20 Sep 2016	Wave Height Low (ft)	3
S0	20 Sep 2016	High Tide (ft)	5.7
S0	20 Sep 2016	High Tide Time	1204
S0	20 Sep 2016	Low Tide (ft)	1.2
S0	20 Sep 2016	Low Tide Time	552
S0	20 Sep 2016	Comments	Kelp; Seagrass; Algae; Water clear; Flow from storm drain 0.5L/sec
S0	27 Sep 2016	Arrive Time	945
S0	27 Sep 2016	Weather	Cloudy

Station	Date	Parameter	Value
S0	27 Sep 2016	Wind Speed (kts)	4.6
S0	27 Sep 2016	Wind Dir	SW
S0	27 Sep 2016	Animal Life	5 Shorebirds
S0	27 Sep 2016	Floatables	None
S0	27 Sep 2016	Water Color	Green
S0	27 Sep 2016	Current Direction	N
S0	27 Sep 2016	Water Temp (C)	17
S0	27 Sep 2016	Wave Height Low (ft)	3
S0	27 Sep 2016	High Tide (ft)	5.1
S0	27 Sep 2016	High Tide Time	832
S0	27 Sep 2016	Low Tide (ft)	1
S0	27 Sep 2016	Low Tide Time	1431
S0	27 Sep 2016	Comments	Kelp; Algae; 2 Persons; Water clear; Flow from storm drain 0.3 L/sec
S2	06 Sep 2016	Arrive Time	1125
S2	06 Sep 2016	Weather	Sunny
S2	06 Sep 2016	Wind Speed (kts)	2.8
S2	06 Sep 2016	Wind Dir	N
S2	06 Sep 2016	Animal Life	3 Dogs; >20 Seagulls
S2	06 Sep 2016	Floatables	None
S2	06 Sep 2016	Water Color	Green
S2	06 Sep 2016	Current Direction	N
S2	06 Sep 2016	Water Temp (C)	20
S2	06 Sep 2016	Wave Height Low (ft)	2
S2	06 Sep 2016	High Tide (ft)	4.6
S2	06 Sep 2016	High Tide Time	1230
S2	06 Sep 2016	Low Tide (ft)	1.7
S2	06 Sep 2016	Low Tide Time	611
S2	06 Sep 2016	Comments	Kelp; Water turbid; No flow from storm drain
S2	13 Sep 2016	Arrive Time	1055
S2	13 Sep 2016	Weather	Cloudy
S2	13 Sep 2016	Wind Speed (kts)	1.3
S2	13 Sep 2016	Wind Dir	SE
S2	13 Sep 2016	Animal Life	2 Dolphins; 5 Pelicans; 15 Seagulls
S2	13 Sep 2016	Floatables	None
S2	13 Sep 2016	Water Color	Green
S2	13 Sep 2016	Current Direction	N
S2	13 Sep 2016	Water Temp (C)	18
S2	13 Sep 2016	Wave Height Low (ft)	2
S2	13 Sep 2016	High Tide (ft)	4.4
S2	13 Sep 2016	High Tide Time	757
S2	13 Sep 2016	Low Tide (ft)	1.7
S2	13 Sep 2016	Low Tide Time	1329
S2	13 Sep 2016	Comments	Kelp; Seagrass; Algae; 8 Persons; Water clear; No flow from storm drain
S2	20 Sep 2016	Arrive Time	1300
S2	20 Sep 2016	Weather	Moderate Rain
S2	20 Sep 2016	Wind Speed (kts)	0.6
S2	20 Sep 2016	Wind Dir	SE
S2	20 Sep 2016	Animal Life	15 Shorebirds; 10 Pelicans
S2	20 Sep 2016	Floatables	None
S2	20 Sep 2016	Water Color	Green

Station	Date	Parameter	Value
S2	20 Sep 2016	Current Direction	N
S2	20 Sep 2016	Water Temp (C)	19
S2	20 Sep 2016	Wave Height Low (ft)	3
S2	20 Sep 2016	High Tide (ft)	5.7
S2	20 Sep 2016	High Tide Time	1204
S2	20 Sep 2016	Low Tide (ft)	0.3
S2	20 Sep 2016	Low Tide Time	1858
S2	20 Sep 2016	Comments	Kelp; Seagrass; Algae; Water clear; Flow from storm drain 0.5L/sec
S2	27 Sep 2016	Arrive Time	1040
S2	27 Sep 2016	Weather	Cloudy
S2	27 Sep 2016	Wind Speed (kts)	3.9
S2	27 Sep 2016	Wind Dir	SW
S2	27 Sep 2016	Animal Life	5 Shorebirds; 1 Dog
S2	27 Sep 2016	Floatables	None
S2	27 Sep 2016	Water Color	Green
S2	27 Sep 2016	Current Direction	N
S2	27 Sep 2016	Water Temp (C)	17
S2	27 Sep 2016	Wave Height Low (ft)	3
S2	27 Sep 2016	High Tide (ft)	5.1
S2	27 Sep 2016	High Tide Time	832
S2	27 Sep 2016	Low Tide (ft)	1
S2	27 Sep 2016	Low Tide Time	1431
S2	27 Sep 2016	Comments	Kelp; Algae; 2 Persons; Water clear; No flow from storm drain
S3	06 Sep 2016	Arrive Time	1020
S3	06 Sep 2016	Weather	Sunny
S3	06 Sep 2016	Wind Speed (kts)	2.3
S3	06 Sep 2016	Wind Dir	N
S3	06 Sep 2016	Animal Life	2 Dogs; 5 Seagulls
S3	06 Sep 2016	Floatables	None
S3	06 Sep 2016	Water Color	Green
S3	06 Sep 2016	Current Direction	N
S3	06 Sep 2016	Water Temp (C)	19
S3	06 Sep 2016	Wave Height Low (ft)	2
S3	06 Sep 2016	High Tide (ft)	4.6
S3	06 Sep 2016	High Tide Time	1230
S3	06 Sep 2016	Low Tide (ft)	1.7
S3	06 Sep 2016	Low Tide Time	611
S3	06 Sep 2016	Comments	Kelp; Water turbid; No flow from storm drain
S3	13 Sep 2016	Arrive Time	1150
S3	13 Sep 2016	Weather	Cloudy
S3	13 Sep 2016	Wind Speed (kts)	0.4
S3	13 Sep 2016	Wind Dir	SE
S3	13 Sep 2016	Animal Life	10 Shorebirds; 2 Dogs; 5 Pigeons
S3	13 Sep 2016	Floatables	None
S3	13 Sep 2016	Water Color	Green
S3	13 Sep 2016	Current Direction	N
S3	13 Sep 2016	Water Temp (C)	18
S3	13 Sep 2016	Wave Height Low (ft)	2
S3	13 Sep 2016	High Tide (ft)	4.4
S3	13 Sep 2016	High Tide Time	757
S3	13 Sep 2016	Low Tide (ft)	1.7



Station	Date	Parameter	Value
S3	13 Sep 2016	Low Tide Time	1329
S3	13 Sep 2016	Comments	Kelp; Seagrass; Algae; 5 Persons; 2 Fishermen; Water clear; Flow from storm drain 0.2L/sec
S3	20 Sep 2016	Arrive Time	1245
S3	20 Sep 2016	Weather	Moderate Rain
S3	20 Sep 2016	Wind Speed (kts)	0.5
S3	20 Sep 2016	Wind Dir	SE
S3	20 Sep 2016	Animal Life	10 Shorebirds; 5 Dogs
S3	20 Sep 2016	Floatables	None
S3	20 Sep 2016	Water Color	Green
S3	20 Sep 2016	Current Direction	N
S3	20 Sep 2016	Water Temp (C)	19
S3	20 Sep 2016	Wave Height Low (ft)	3
S3	20 Sep 2016	High Tide (ft)	5.7
S3	20 Sep 2016	High Tide Time	1204
S3	20 Sep 2016	Low Tide (ft)	0.3
S3	20 Sep 2016	Low Tide Time	1858
S3	20 Sep 2016	Comments	Kelp; Seagrass; Algae; 3 Persons; 1 Surfer; Water clear; Flow from storm drain 0.5L/sec
S3	27 Sep 2016	Arrive Time	1130
S3	27 Sep 2016	Weather	Cloudy
S3	27 Sep 2016	Wind Speed (kts)	2.7
S3	27 Sep 2016	Wind Dir	SW
S3	27 Sep 2016	Animal Life	5 Shorebirds
S3	27 Sep 2016	Floatables	None
S3	27 Sep 2016	Water Color	Green
S3	27 Sep 2016	Current Direction	N
S3	27 Sep 2016	Water Temp (C)	17
S3	27 Sep 2016	Wave Height Low (ft)	3
S3	27 Sep 2016	High Tide (ft)	5.1
S3	27 Sep 2016	High Tide Time	832
S3	27 Sep 2016	Low Tide (ft)	1
S3	27 Sep 2016	Low Tide Time	1431
S3	27 Sep 2016	Comments	Kelp; Algae; 3 Persons; Water clear; No flow from storm drain
S4	06 Sep 2016	Arrive Time	1153
S4	06 Sep 2016	Weather	Sunny
S4	06 Sep 2016	Wind Speed (kts)	6
S4	06 Sep 2016	Wind Dir	W
S4	06 Sep 2016	Animal Life	None
S4	06 Sep 2016	Floatables	None
S4	06 Sep 2016	Water Color	Green
S4	06 Sep 2016	Current Direction	N
S4	06 Sep 2016	Water Temp (C)	20.6
S4	06 Sep 2016	Wave Height Low (ft)	3
S4	06 Sep 2016	High Tide (ft)	4.6
S4	06 Sep 2016	High Tide Time	1230
S4	06 Sep 2016	Low Tide (ft)	1.7
S4	06 Sep 2016	Low Tide Time	611
S4	06 Sep 2016	Comments	Water clear; Wrecked boat debris
S4	13 Sep 2016	Arrive Time	1256
S4	13 Sep 2016	Weather	Cloudy

Station	Date	Parameter	Value
S4	13 Sep 2016	Wind Speed (kts)	4.6
S4	13 Sep 2016	Wind Dir	SW
S4	13 Sep 2016	Animal Life	None
S4	13 Sep 2016	Floatables	None
S4	13 Sep 2016	Water Color	Green
S4	13 Sep 2016	Current Direction	N
S4	13 Sep 2016	Water Temp (C)	19
S4	13 Sep 2016	Wave Height Low (ft)	1
S4	13 Sep 2016	High Tide (ft)	4.4
S4	13 Sep 2016	High Tide Time	757
S4	13 Sep 2016	Low Tide (ft)	1.7
S4	13 Sep 2016	Low Tide Time	1329
S4	13 Sep 2016	Comments	Water clear
S4	20 Sep 2016	Arrive Time	1238
S4	20 Sep 2016	Weather	Drizzle
S4	20 Sep 2016	Wind Speed (kts)	0.9
S4	20 Sep 2016	Wind Dir	W
S4	20 Sep 2016	Animal Life	None
S4	20 Sep 2016	Floatables	None
S4	20 Sep 2016	Water Color	Green
S4	20 Sep 2016	Current Direction	N
S4	20 Sep 2016	Water Temp (C)	22.1
S4	20 Sep 2016	Wave Height Low (ft)	4
S4	20 Sep 2016	High Tide (ft)	5.7
S4	20 Sep 2016	High Tide Time	1204
S4	20 Sep 2016	Low Tide (ft)	0.3
S4	20 Sep 2016	Low Tide Time	1858
S4	20 Sep 2016	Comments	Water clear
S4	27 Sep 2016	Arrive Time	900
S4	27 Sep 2016	Weather	Sunny
S4	27 Sep 2016	Wind Speed (kts)	11.8
S4	27 Sep 2016	Wind Dir	E
S4	27 Sep 2016	Animal Life	None
S4	27 Sep 2016	Floatables	None
S4	27 Sep 2016	Water Color	Green
S4	27 Sep 2016	Current Direction	N
S4	27 Sep 2016	Water Temp (C)	18.8
S4	27 Sep 2016	Wave Height Low (ft)	2
S4	27 Sep 2016	High Tide (ft)	4.9
S4	27 Sep 2016	High Tide Time	804
S4	27 Sep 2016	Low Tide (ft)	1.3
S4	27 Sep 2016	Low Tide Time	1353
S4	27 Sep 2016	Comments	Water clear
S5	06 Sep 2016	Arrive Time	1021
S5	06 Sep 2016	Weather	Sunny
S5	06 Sep 2016	Wind Speed (kts)	6.4
S5	06 Sep 2016	Wind Dir	W
S5	06 Sep 2016	Animal Life	None
S5	06 Sep 2016	Floatables	None
S5	06 Sep 2016	Water Color	Green
S5	06 Sep 2016	Current Direction	N
S5	06 Sep 2016	Water Temp (C)	19.6

Station	Date	Parameter	Value
S5	06 Sep 2016	Wave Height Low (ft)	2
S5	06 Sep 2016	High Tide (ft)	4.6
S5	06 Sep 2016	High Tide Time	1230
S5	06 Sep 2016	Low Tide (ft)	1.7
S5	06 Sep 2016	Low Tide Time	611
S5	06 Sep 2016	Comments	Water clear
S5	13 Sep 2016	Arrive Time	1053
S5	13 Sep 2016	Weather	Cloudy
S5	13 Sep 2016	Wind Speed (kts)	1.5
S5	13 Sep 2016	Wind Dir	W
S5	13 Sep 2016	Animal Life	None
S5	13 Sep 2016	Floatables	None
S5	13 Sep 2016	Water Color	Green
S5	13 Sep 2016	Current Direction	N
S5	13 Sep 2016	Water Temp (C)	19.2
S5	13 Sep 2016	Wave Height Low (ft)	2
S5	13 Sep 2016	High Tide (ft)	4.4
S5	13 Sep 2016	High Tide Time	757
S5	13 Sep 2016	Low Tide (ft)	1.7
S5	13 Sep 2016	Low Tide Time	1329
S5	13 Sep 2016	Comments	Kelp; Seagrass; Water clear
S5	20 Sep 2016	Arrive Time	1039
S5	20 Sep 2016	Weather	Drizzle
S5	20 Sep 2016	Wind Speed (kts)	1.3
S5	20 Sep 2016	Wind Dir	W
S5	20 Sep 2016	Animal Life	None
S5	20 Sep 2016	Floatables	None
S5	20 Sep 2016	Water Color	Green
S5	20 Sep 2016	Current Direction	N
S5	20 Sep 2016	Water Temp (C)	19.7
S5	20 Sep 2016	Wave Height Low (ft)	4
S5	20 Sep 2016	High Tide (ft)	5.7
S5	20 Sep 2016	High Tide Time	1204
S5	20 Sep 2016	Low Tide (ft)	1.2
S5	20 Sep 2016	Low Tide Time	552
S5	20 Sep 2016	Comments	Water clear
S5	27 Sep 2016	Arrive Time	1011
S5	27 Sep 2016	Weather	Partly Cloudy
S5	27 Sep 2016	Wind Speed (kts)	9.1
S5	27 Sep 2016	Wind Dir	SW
S5	27 Sep 2016	Animal Life	None
S5	27 Sep 2016	Floatables	None
S5	27 Sep 2016	Water Color	Green
S5	27 Sep 2016	Current Direction	N
S5	27 Sep 2016	Water Temp (C)	18.4
S5	27 Sep 2016	Wave Height Low (ft)	1
S5	27 Sep 2016	High Tide (ft)	4.9
S5	27 Sep 2016	High Tide Time	804
S5	27 Sep 2016	Low Tide (ft)	1.3
S5	27 Sep 2016	Low Tide Time	1353
S5	27 Sep 2016	Comments	Kelp; Water clear

Station	Date	Parameter	Value
S6	06 Sep 2016	Arrive Time	1009
S6	06 Sep 2016	Weather	Sunny
S6	06 Sep 2016	Wind Speed (kts)	4.8
S6	06 Sep 2016	Wind Dir	W
S6	06 Sep 2016	Animal Life	None
S6	06 Sep 2016	Floatables	None
S6	06 Sep 2016	Water Color	Green
S6	06 Sep 2016	Current Direction	N
S6	06 Sep 2016	Water Temp (C)	22.8
S6	06 Sep 2016	Wave Height Low (ft)	3
S6	06 Sep 2016	High Tide (ft)	4.6
S6	06 Sep 2016	High Tide Time	1230
S6	06 Sep 2016	Low Tide (ft)	1.7
S6	06 Sep 2016	Low Tide Time	611
S6	06 Sep 2016	Comments	Water clear
S6	13 Sep 2016	Arrive Time	1036
S6	13 Sep 2016	Weather	Cloudy
S6	13 Sep 2016	Wind Speed (kts)	0.9
S6	13 Sep 2016	Wind Dir	SW
S6	13 Sep 2016	Animal Life	None
S6	13 Sep 2016	Floatables	None
S6	13 Sep 2016	Water Color	Green
S6	13 Sep 2016	Current Direction	N
S6	13 Sep 2016	Water Temp (C)	18.8
S6	13 Sep 2016	Wave Height Low (ft)	1
S6	13 Sep 2016	High Tide (ft)	4.4
S6	13 Sep 2016	High Tide Time	757
S6	13 Sep 2016	Low Tide (ft)	1.7
S6	13 Sep 2016	Low Tide Time	1329
S6	13 Sep 2016	Comments	Seagrass; 1 Person; Water clear
S6	20 Sep 2016	Arrive Time	1015
S6	20 Sep 2016	Weather	Overcast
S6	20 Sep 2016	Wind Speed (kts)	0.7
S6	20 Sep 2016	Wind Dir	W
S6	20 Sep 2016	Animal Life	None
S6	20 Sep 2016	Floatables	None
S6	20 Sep 2016	Water Color	Green
S6	20 Sep 2016	Current Direction	N
S6	20 Sep 2016	Water Temp (C)	20.2
S6	20 Sep 2016	Wave Height Low (ft)	4
S6	20 Sep 2016	High Tide (ft)	5.7
S6	20 Sep 2016	High Tide Time	1204
S6	20 Sep 2016	Low Tide (ft)	1.2
S6	20 Sep 2016	Low Tide Time	552
S6	20 Sep 2016	Comments	Water clear
S6	27 Sep 2016	Arrive Time	1025
S6	27 Sep 2016	Weather	Partly Cloudy
S6	27 Sep 2016	Wind Speed (kts)	8.1
S6	27 Sep 2016	Wind Dir	S
S6	27 Sep 2016	Animal Life	None
S6	27 Sep 2016	Floatables	None
S6	27 Sep 2016	Water Color	Green

Station	Date	Parameter	Value
S6	27 Sep 2016	Current Direction	N
S6	27 Sep 2016	Water Temp (C)	17
S6	27 Sep 2016	Wave Height Low (ft)	2
S6	27 Sep 2016	High Tide (ft)	4.9
S6	27 Sep 2016	High Tide Time	804
S6	27 Sep 2016	Low Tide (ft)	1.3
S6	27 Sep 2016	Low Tide Time	1353
S6	27 Sep 2016	Comments	Water clear
S8	06 Sep 2016	Arrive Time	927
S8	06 Sep 2016	Weather	Sunny
S8	06 Sep 2016	Wind Speed (kts)	0.9
S8	06 Sep 2016	Wind Dir	W
S8	06 Sep 2016	Animal Life	None
S8	06 Sep 2016	Floatables	None
S8	06 Sep 2016	Water Color	Green
S8	06 Sep 2016	Current Direction	N
S8	06 Sep 2016	Water Temp (C)	21
S8	06 Sep 2016	Wave Height Low (ft)	2
S8	06 Sep 2016	High Tide (ft)	4.6
S8	06 Sep 2016	High Tide Time	1230
S8	06 Sep 2016	Low Tide (ft)	1.7
S8	06 Sep 2016	Low Tide Time	611
S8	06 Sep 2016	Comments	Water clear
S8	13 Sep 2016	Arrive Time	956
S8	13 Sep 2016	Weather	Cloudy
S8	13 Sep 2016	Wind Speed (kts)	2.1
S8	13 Sep 2016	Wind Dir	W
S8	13 Sep 2016	Animal Life	None
S8	13 Sep 2016	Floatables	None
S8	13 Sep 2016	Water Color	Green
S8	13 Sep 2016	Current Direction	N
S8	13 Sep 2016	Water Temp (C)	18.6
S8	13 Sep 2016	Wave Height Low (ft)	1
S8	13 Sep 2016	High Tide (ft)	4.4
S8	13 Sep 2016	High Tide Time	757
S8	13 Sep 2016	Low Tide (ft)	1.7
S8	13 Sep 2016	Low Tide Time	1329
S8	13 Sep 2016	Comments	Kelp; Seagrass; 1 Person; Water clear
S8	20 Sep 2016	Arrive Time	935
S8	20 Sep 2016	Weather	Overcast
S8	20 Sep 2016	Wind Speed (kts)	1.5
S8	20 Sep 2016	Wind Dir	W
S8	20 Sep 2016	Animal Life	None
S8	20 Sep 2016	Floatables	None
S8	20 Sep 2016	Water Color	Green
S8	20 Sep 2016	Current Direction	N
S8	20 Sep 2016	Water Temp (C)	20.4
S8	20 Sep 2016	Wave Height Low (ft)	3
S8	20 Sep 2016	High Tide (ft)	5.7
S8	20 Sep 2016	High Tide Time	1204
S8	20 Sep 2016	Low Tide (ft)	1.2
S8	20 Sep 2016	Low Tide Time	552

Station	Date	Parameter	Value
S8	20 Sep 2016	Comments	Water clear
S8	27 Sep 2016	Arrive Time	1206
S8	27 Sep 2016	Weather	Sunny
S8	27 Sep 2016	Wind Speed (kts)	3.6
S8	27 Sep 2016	Wind Dir	SW
S8	27 Sep 2016	Animal Life	None
S8	27 Sep 2016	Floatables	None
S8	27 Sep 2016	Water Color	Green
S8	27 Sep 2016	Current Direction	N
S8	27 Sep 2016	Water Temp (C)	19
S8	27 Sep 2016	Wave Height Low (ft)	1
S8	27 Sep 2016	High Tide (ft)	4.9
S8	27 Sep 2016	High Tide Time	804
S8	27 Sep 2016	Low Tide (ft)	1.3
S8	27 Sep 2016	Low Tide Time	1353
S8	27 Sep 2016	Comments	10 Persons; 5 Swimmers; Water clear
S9	06 Sep 2016	Arrive Time	901
S9	06 Sep 2016	Weather	Partly Cloudy
S9	06 Sep 2016	Wind Speed (kts)	1.3
S9	06 Sep 2016	Wind Dir	W
S9	06 Sep 2016	Animal Life	None
S9	06 Sep 2016	Floatables	None
S9	06 Sep 2016	Water Color	Green
S9	06 Sep 2016	Current Direction	N
S9	06 Sep 2016	Water Temp (C)	21.6
S9	06 Sep 2016	Wave Height Low (ft)	1
S9	06 Sep 2016	High Tide (ft)	4.6
S9	06 Sep 2016	High Tide Time	1230
S9	06 Sep 2016	Low Tide (ft)	1.7
S9	06 Sep 2016	Low Tide Time	611
S9	06 Sep 2016	Comments	Water clear
S9	13 Sep 2016	Arrive Time	933
S9	13 Sep 2016	Weather	Cloudy
S9	13 Sep 2016	Wind Speed (kts)	2.5
S9	13 Sep 2016	Wind Dir	NW
S9	13 Sep 2016	Animal Life	None
S9	13 Sep 2016	Floatables	None
S9	13 Sep 2016	Water Color	Green
S9	13 Sep 2016	Current Direction	N
S9	13 Sep 2016	Water Temp (C)	18.6
S9	13 Sep 2016	Wave Height Low (ft)	1
S9	13 Sep 2016	High Tide (ft)	4.4
S9	13 Sep 2016	High Tide Time	757
S9	13 Sep 2016	Low Tide (ft)	1.7
S9	13 Sep 2016	Low Tide Time	1329
S9	13 Sep 2016	Comments	Kelp; Seagrass; 2 Persons; 1 Tractor; Water clear
S9	20 Sep 2016	Arrive Time	914
S9	20 Sep 2016	Weather	Overcast
S9	20 Sep 2016	Wind Speed (kts)	1.9
S9	20 Sep 2016	Wind Dir	W
S9	20 Sep 2016	Animal Life	None

Station	Date	Parameter	Value
S9	20 Sep 2016	Floatables	None
S9	20 Sep 2016	Water Color	Green
S9	20 Sep 2016	Current Direction	N
S9	20 Sep 2016	Water Temp (C)	20
S9	20 Sep 2016	Wave Height Low (ft)	2
S9	20 Sep 2016	High Tide (ft)	5.7
S9	20 Sep 2016	High Tide Time	1204
S9	20 Sep 2016	Low Tide (ft)	1.2
S9	20 Sep 2016	Low Tide Time	552
S9	20 Sep 2016	Comments	Water clear
S9	27 Sep 2016	Arrive Time	1240
S9	27 Sep 2016	Weather	Sunny
S9	27 Sep 2016	Wind Speed (kts)	0.1
S9	27 Sep 2016	Wind Dir	W
S9	27 Sep 2016	Animal Life	2 Sand Pipers
S9	27 Sep 2016	Floatables	None
S9	27 Sep 2016	Water Color	Green
S9	27 Sep 2016	Current Direction	N
S9	27 Sep 2016	Water Temp (C)	23
S9	27 Sep 2016	Wave Height Low (ft)	1
S9	27 Sep 2016	High Tide (ft)	4.9
S9	27 Sep 2016	High Tide Time	804
S9	27 Sep 2016	Low Tide (ft)	1.3
S9	27 Sep 2016	Low Tide Time	1353
S9	27 Sep 2016	Comments	Kelp; Seagrass; Water clear
S10	06 Sep 2016	Arrive Time	1143
S10	06 Sep 2016	Weather	Sunny
S10	06 Sep 2016	Wind Speed (kts)	9.9
S10	06 Sep 2016	Wind Dir	W
S10	06 Sep 2016	Animal Life	None
S10	06 Sep 2016	Floatables	None
S10	06 Sep 2016	Water Color	Green
S10	06 Sep 2016	Current Direction	N
S10	06 Sep 2016	Water Temp (C)	23.2
S10	06 Sep 2016	Wave Height Low (ft)	3
S10	06 Sep 2016	High Tide (ft)	4.6
S10	06 Sep 2016	High Tide Time	1230
S10	06 Sep 2016	Low Tide (ft)	1.7
S10	06 Sep 2016	Low Tide Time	611
S10	06 Sep 2016	Comments	Water clear
S10	13 Sep 2016	Arrive Time	1244
S10	13 Sep 2016	Weather	Cloudy
S10	13 Sep 2016	Wind Speed (kts)	3.8
S10	13 Sep 2016	Wind Dir	SW
S10	13 Sep 2016	Animal Life	None
S10	13 Sep 2016	Floatables	None
S10	13 Sep 2016	Water Color	Green
S10	13 Sep 2016	Current Direction	N
S10	13 Sep 2016	Water Temp (C)	18.2
S10	13 Sep 2016	Wave Height Low (ft)	1
S10	13 Sep 2016	High Tide (ft)	4.4
S10	13 Sep 2016	High Tide Time	757

Station	Date	Parameter	Value
S10	13 Sep 2016	Low Tide (ft)	1.7
S10	13 Sep 2016	Low Tide Time	1329
S10	13 Sep 2016	Comments	Kelp; Water clear
S10	20 Sep 2016	Arrive Time	1232
S10	20 Sep 2016	Weather	Drizzle
S10	20 Sep 2016	Wind Speed (kts)	1.1
S10	20 Sep 2016	Wind Dir	W
S10	20 Sep 2016	Animal Life	None
S10	20 Sep 2016	Floatables	None
S10	20 Sep 2016	Water Color	Green
S10	20 Sep 2016	Current Direction	N
S10	20 Sep 2016	Water Temp (C)	20.1
S10	20 Sep 2016	Wave Height Low (ft)	4
S10	20 Sep 2016	High Tide (ft)	5.7
S10	20 Sep 2016	High Tide Time	1204
S10	20 Sep 2016	Low Tide (ft)	0.3
S10	20 Sep 2016	Low Tide Time	1858
S10	20 Sep 2016	Comments	Water clear
S10	27 Sep 2016	Arrive Time	854
S10	27 Sep 2016	Weather	Sunny
S10	27 Sep 2016	Wind Speed (kts)	10.1
S10	27 Sep 2016	Wind Dir	E
S10	27 Sep 2016	Animal Life	None
S10	27 Sep 2016	Floatables	None
S10	27 Sep 2016	Water Color	Green
S10	27 Sep 2016	Current Direction	N
S10	27 Sep 2016	Water Temp (C)	17.4
S10	27 Sep 2016	Wave Height Low (ft)	2
S10	27 Sep 2016	High Tide (ft)	4.9
S10	27 Sep 2016	High Tide Time	804
S10	27 Sep 2016	Low Tide (ft)	1.3
S10	27 Sep 2016	Low Tide Time	1353
S10	27 Sep 2016	Comments	Water clear
S11	06 Sep 2016	Arrive Time	1014
S11	06 Sep 2016	Weather	Sunny
S11	06 Sep 2016	Wind Speed (kts)	4.8
S11	06 Sep 2016	Wind Dir	W
S11	06 Sep 2016	Animal Life	None
S11	06 Sep 2016	Floatables	None
S11	06 Sep 2016	Water Color	Green
S11	06 Sep 2016	Current Direction	N
S11	06 Sep 2016	Water Temp (C)	18
S11	06 Sep 2016	Wave Height Low (ft)	3
S11	06 Sep 2016	High Tide (ft)	4.6
S11	06 Sep 2016	High Tide Time	1230
S11	06 Sep 2016	Low Tide (ft)	1.7
S11	06 Sep 2016	Low Tide Time	611
S11	06 Sep 2016	Comments	Water clear
S11	13 Sep 2016	Arrive Time	1042
S11	13 Sep 2016	Weather	Cloudy
S11	13 Sep 2016	Wind Speed (kts)	1.9



Station	Date	Parameter	Value
S11	13 Sep 2016	Wind Dir	SW
S11	13 Sep 2016	Animal Life	None
S11	13 Sep 2016	Floatables	None
S11	13 Sep 2016	Water Color	Green
S11	13 Sep 2016	Current Direction	N
S11	13 Sep 2016	Water Temp (C)	18.8
S11	13 Sep 2016	Wave Height Low (ft)	1
S11	13 Sep 2016	High Tide (ft)	4.4
S11	13 Sep 2016	High Tide Time	757
S11	13 Sep 2016	Low Tide (ft)	1.7
S11	13 Sep 2016	Low Tide Time	1329
S11	13 Sep 2016	Comments	Water clear
S11	20 Sep 2016	Arrive Time	1021
S11	20 Sep 2016	Weather	Overcast
S11	20 Sep 2016	Wind Speed (kts)	1.9
S11	20 Sep 2016	Wind Dir	W
S11	20 Sep 2016	Animal Life	None
S11	20 Sep 2016	Floatables	None
S11	20 Sep 2016	Water Color	Green
S11	20 Sep 2016	Current Direction	N
S11	20 Sep 2016	Water Temp (C)	21.4
S11	20 Sep 2016	Wave Height Low (ft)	4
S11	20 Sep 2016	High Tide (ft)	5.7
S11	20 Sep 2016	High Tide Time	1204
S11	20 Sep 2016	Low Tide (ft)	1.2
S11	20 Sep 2016	Low Tide Time	552
S11	20 Sep 2016	Comments	Water clear
S11	27 Sep 2016	Arrive Time	1020
S11	27 Sep 2016	Weather	Partly Cloudy
S11	27 Sep 2016	Wind Speed (kts)	10.8
S11	27 Sep 2016	Wind Dir	SW
S11	27 Sep 2016	Animal Life	None
S11	27 Sep 2016	Floatables	None
S11	27 Sep 2016	Water Color	Green
S11	27 Sep 2016	Current Direction	N
S11	27 Sep 2016	Water Temp (C)	16.8
S11	27 Sep 2016	Wave Height Low (ft)	2
S11	27 Sep 2016	High Tide (ft)	4.9
S11	27 Sep 2016	High Tide Time	804
S11	27 Sep 2016	Low Tide (ft)	1.3
S11	27 Sep 2016	Low Tide Time	1353
S11	27 Sep 2016	Comments	Seagrass; Water clear
S12	06 Sep 2016	Arrive Time	957
S12	06 Sep 2016	Weather	Sunny
S12	06 Sep 2016	Wind Speed (kts)	3.1
S12	06 Sep 2016	Wind Dir	W
S12	06 Sep 2016	Animal Life	None
S12	06 Sep 2016	Floatables	None
S12	06 Sep 2016	Water Color	Green
S12	06 Sep 2016	Current Direction	N
S12	06 Sep 2016	Water Temp (C)	20
S12	06 Sep 2016	Wave Height Low (ft)	2

Station	Date	Parameter	Value
S12	06 Sep 2016	High Tide (ft)	4.6
S12	06 Sep 2016	High Tide Time	1230
S12	06 Sep 2016	Low Tide (ft)	1.7
S12	06 Sep 2016	Low Tide Time	611
S12	06 Sep 2016	Comments	Water clear
S12	13 Sep 2016	Arrive Time	1024
S12	13 Sep 2016	Weather	Cloudy
S12	13 Sep 2016	Wind Speed (kts)	0.1
S12	13 Sep 2016	Wind Dir	NW
S12	13 Sep 2016	Animal Life	None
S12	13 Sep 2016	Floatables	None
S12	13 Sep 2016	Water Color	Green
S12	13 Sep 2016	Current Direction	N
S12	13 Sep 2016	Water Temp (C)	19.2
S12	13 Sep 2016	Wave Height Low (ft)	1
S12	13 Sep 2016	High Tide (ft)	4.4
S12	13 Sep 2016	High Tide Time	757
S12	13 Sep 2016	Low Tide (ft)	1.7
S12	13 Sep 2016	Low Tide Time	1329
S12	13 Sep 2016	Comments	Kelp; Seagrass; Water clear
S12	20 Sep 2016	Arrive Time	1001
S12	20 Sep 2016	Weather	Overcast
S12	20 Sep 2016	Wind Speed (kts)	2.5
S12	20 Sep 2016	Wind Dir	W
S12	20 Sep 2016	Animal Life	None
S12	20 Sep 2016	Floatables	None
S12	20 Sep 2016	Water Color	Green
S12	20 Sep 2016	Current Direction	N
S12	20 Sep 2016	Water Temp (C)	19
S12	20 Sep 2016	Wave Height Low (ft)	3
S12	20 Sep 2016	High Tide (ft)	5.7
S12	20 Sep 2016	High Tide Time	1204
S12	20 Sep 2016	Low Tide (ft)	1.2
S12	20 Sep 2016	Low Tide Time	552
S12	20 Sep 2016	Comments	Water clear
S12	27 Sep 2016	Arrive Time	954
S12	27 Sep 2016	Weather	Sunny
S12	27 Sep 2016	Wind Speed (kts)	2.5
S12	27 Sep 2016	Wind Dir	E
S12	27 Sep 2016	Animal Life	None
S12	27 Sep 2016	Floatables	None
S12	27 Sep 2016	Water Color	Green
S12	27 Sep 2016	Current Direction	N
S12	27 Sep 2016	Water Temp (C)	19
S12	27 Sep 2016	Wave Height Low (ft)	2
S12	27 Sep 2016	High Tide (ft)	4.9
S12	27 Sep 2016	High Tide Time	804
S12	27 Sep 2016	Low Tide (ft)	1.3
S12	27 Sep 2016	Low Tide Time	1353
S12	27 Sep 2016	Comments	4 Persons; 7 Surfers; Water clear

# Kelp Stations



**Table 3.1**

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

Date	I19	I24	I25	I26	I32	I39	I40
01 Sep 2016	5	2	2	2	3	2	3
02 Sep 2016	5	2	2	2	2	2	3
03 Sep 2016	4	2	2	2	2	2	3
04 Sep 2016	4	2	2	2	2	2	3
05 Sep 2016	4	2	2	2	2	2	3
06 Sep 2016	4	2	2	2	2	2	3
07 Sep 2016	4	2	2	2	2	2	3
08 Sep 2016	4	2	2	2	2	2	3
09 Sep 2016	4	2	2	2	2	2	3
10 Sep 2016	5	2	2	2	2	2	3
11 Sep 2016	5	2	2	2	2	2	3
12 Sep 2016	5	2	2	2	2	2	3
13 Sep 2016	5	2	2	2	2	2	3
14 Sep 2016	4	2	2	2	2	2	3
15 Sep 2016	4	2	2	2	2	2	3
16 Sep 2016	4	2	2	2	2	2	3
17 Sep 2016	4	2	2	2	2	2	3
18 Sep 2016	4	2	2	2	2	2	3
19 Sep 2016	4	2	2	2	2	2	3
20 Sep 2016	4	2	2	2	2	2	3
21 Sep 2016	4	2	2	2	2	2	3
22 Sep 2016	4	2	2	2	2	2	3
23 Sep 2016	4	3	2	2	2	2	3
24 Sep 2016	4	3	2	2	2	2	3
25 Sep 2016	5	2	2	3	3	2	4
26 Sep 2016	5	3	2	3	3	2	4
27 Sep 2016	5	3	2	3	3	2	4
28 Sep 2016	5	3	2	3	3	2	4
29 Sep 2016	5	3	3	3	3	2	3
30 Sep 2016	5	3	3	3	3	2	3

\* 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 Sep 2016	2	2	2	2	2	2	2
02 Sep 2016	2	2	2	2	2	2	2
03 Sep 2016	2	2	2	2	2	2	2
04 Sep 2016	2	2	2	2	2	2	2
05 Sep 2016	2	2	2	2	2	2	2
06 Sep 2016	2	2	2	2	2	2	2
07 Sep 2016	2	2	2	2	2	2	2
08 Sep 2016	2	2	2	2	2	2	2
09 Sep 2016	2	2	2	2	2	2	2
10 Sep 2016	2	2	2	2	2	2	2
11 Sep 2016	2	2	2	2	2	2	2
12 Sep 2016	2	2	2	2	2	2	2
13 Sep 2016	2	2	2	2	2	2	2
14 Sep 2016	2	2	2	2	2	2	2
15 Sep 2016	2	2	2	2	2	2	2
16 Sep 2016	2	2	2	2	2	2	2
17 Sep 2016	2	2	2	2	2	2	2
18 Sep 2016	2	2	2	2	2	2	2
19 Sep 2016	2	2	2	2	2	2	2
20 Sep 2016	2	2	2	2	2	2	2
21 Sep 2016	2	2	2	2	2	2	2
22 Sep 2016	2	2	2	2	2	2	2
23 Sep 2016	2	2	2	2	2	2	2
24 Sep 2016	2	2	2	2	2	2	2
25 Sep 2016	2	2	2	2	3	2	2
26 Sep 2016	2	2	2	2	2	2	2
27 Sep 2016	2	2	2	2	2	2	2
28 Sep 2016	2	2	2	2	2	2	2
29 Sep 2016	2	2	2	2	2	2	2
30 Sep 2016	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 Sep 2016	2	2	2	2	2	2	2
02 Sep 2016	2	2	2	2	2	2	2
03 Sep 2016	2	2	2	2	2	2	2
04 Sep 2016	2	2	2	2	2	2	2
05 Sep 2016	2	2	2	2	2	2	2
06 Sep 2016	2	2	2	2	2	2	2
07 Sep 2016	2	2	2	2	2	2	2
08 Sep 2016	2	2	2	2	2	2	2
09 Sep 2016	2	2	2	2	2	2	2
10 Sep 2016	2	2	2	2	2	2	2
11 Sep 2016	2	2	2	2	2	2	2
12 Sep 2016	2	2	2	2	2	2	2
13 Sep 2016	2	2	2	2	2	2	2
14 Sep 2016	2	2	2	2	2	2	2
15 Sep 2016	2	2	2	2	2	2	2
16 Sep 2016	2	2	2	2	2	2	2
17 Sep 2016	2	2	2	2	2	2	2
18 Sep 2016	2	2	2	2	2	2	2
19 Sep 2016	2	2	2	2	2	2	2
20 Sep 2016	2	2	2	2	2	2	2
21 Sep 2016	2	2	2	2	2	2	2
22 Sep 2016	2	2	2	2	2	2	2
23 Sep 2016	2	2	2	2	2	2	2
24 Sep 2016	2	2	2	2	2	2	2
25 Sep 2016	2	2	2	2	2	2	2
26 Sep 2016	2	2	2	2	2	2	2
27 Sep 2016	2	2	2	2	2	2	2
28 Sep 2016	2	2	2	2	2	2	2
29 Sep 2016	2	2	2	2	2	2	2
30 Sep 2016	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>
01 Sep 2016	IC	IC	IC	IC	IC	IC	IC
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC
14 Sep 2016	IC	IC	IC	IC	IC	IC	IC
19 Sep 2016	IC	IC	IC	IC	IC	IC	IC
25 Sep 2016	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>
01 Sep 2016	IC	IC	IC	IC	IC	IC	IC
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC
14 Sep 2016	IC	IC	IC	IC	IC	IC	IC
19 Sep 2016	IC	IC	IC	IC	IC	IC	IC
25 Sep 2016	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>
01 Sep 2016	IC	IC	IC	IC	IC	IC	IC
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC
14 Sep 2016	IC	IC	IC	IC	IC	IC	IC
19 Sep 2016	IC	IC	IC	IC	IC	IC	IC
25 Sep 2016	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>
01 Sep 2016	IC	IC	IC	IC	IC	IC	IC
06 Sep 2016	IC	IC	IC	IC	IC	IC	IC
14 Sep 2016	IC	IC	IC	IC	IC	IC	IC
19 Sep 2016	IC	IC	IC	IC	IC	IC	IC
25 Sep 2016	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
I19	01 Sep 2016	1122	2	<2	<2	<2	1.00	19.7	73.98	6.8	33.44	8.2	ns	ns
I19	01 Sep 2016	1122	6	<20	<2	2e	0.10	18.2	60.79	5.6	33.64	8.1	ns	ns
I19	01 Sep 2016	1122	11	<20	<2	<2	0.10	15.0	61.96	6.2	33.31	8.1	ns	ns
I19	06 Sep 2016	1232	2	<2	<2	<2	1.00	20.2	72.94	7.0	33.37	8.2	ns	ns
I19	06 Sep 2016	1232	6	<2	<2	<2	1.00	16.6	66.85	7.5	33.25	8.1	ns	ns
I19	06 Sep 2016	1232	11	<20	<2	<2	0.10	15.9	61.42	7.6	33.25	8.1	ns	ns
I19	14 Sep 2016	1051	2	<2	<2	<2	1.00	18.1	74.01	7.2	33.37	8.2	ns	ns
I19	14 Sep 2016	1051	6	<2	<2	<2	1.00	15.2	68.72	6.6	33.24	8.1	ns	ns
I19	14 Sep 2016	1051	11	<2	<2	<2	1.00	14.5	62.91	6.6	33.26	8.1	ns	ns
I19	19 Sep 2016	1153	2	<2	<2	<2	1.00	16.5	76.56	8.1	33.32	8.1	ns	ns
I19	19 Sep 2016	1153	6	<2	<2	<2	1.00	15.7	74.23	8.2	33.30	8.1	ns	ns
I19	19 Sep 2016	1153	11	<2	<2	<2	1.00	14.5	63.52	5.9	33.27	8.0	ns	ns
I19	25 Sep 2016	1123	2	<2	<2	<2	1.00	17.3	62.26	8.1	33.22	8.2	ns	ns
I19	25 Sep 2016	1123	6	12e	<2	6e	0.17	15.9	67.52	8.3	33.25	8.2	ns	ns
I19	25 Sep 2016	1123	11	18e	<2	2e	0.11	15.5	59.85	8.0	33.26	8.1	ns	ns
I24	01 Sep 2016	1150	2	<2	<2	<2	1.00	19.8	80.25	7.5	33.38	8.2	ns	ns
I24	01 Sep 2016	1150	6	<2	<2	<2	1.00	18.6	76.67	5.4	33.28	8.2	ns	ns
I24	01 Sep 2016	1150	11	<2	<2	<2	1.00	14.7	62.56	6.5	33.24	8.1	ns	ns
I24	06 Sep 2016	1300	2	<2	<2	<2	1.00	20.3	76.78	8.0	33.42	8.2	ns	ns
I24	06 Sep 2016	1300	6	<2	<2	<2	1.00	19.9	75.95	7.4	33.33	8.2	ns	ns
I24	06 Sep 2016	1300	11	<2	<2	<2	1.00	15.8	76.55	8.1	33.23	8.1	ns	ns
I24	14 Sep 2016	1115	2	<2	<2	<2	1.00	18.4	79.92	8.5	33.39	8.2	ns	ns
I24	14 Sep 2016	1115	6	<2	<2	<2	1.00	17.2	74.44	7.9	33.31	8.2	ns	ns
I24	14 Sep 2016	1115	11	<2	<2	<2	1.00	14.4	69.42	7.7	33.27	8.1	ns	ns
I24	19 Sep 2016	1215	2	<2	<2	<2	1.00	16.6	80.18	8.4	33.33	8.1	ns	ns
I24	19 Sep 2016	1215	6	<2	<2	<2	1.00	15.4	77.19	6.6	33.28	8.1	ns	ns
I24	19 Sep 2016	1215	11	<20	<2	<2	0.10	14.2	63.70	6.1	33.28	7.9	ns	ns
I24	25 Sep 2016	1148	2	<2	<2	<2	1.00	17.8	69.05	7.8	33.23	8.2	ns	ns
I24	25 Sep 2016	1148	6	2e	<2	<2	1.00	16.8	70.87	7.6	33.22	8.1	ns	ns
I24	25 Sep 2016	1148	11	2e	<2	2e	1.00	15.2	54.38	7.9	33.26	8.1	ns	ns
I25	01 Sep 2016	1208	2	<2	<2	<2	1.00	19.6	79.52	7.7	33.38	8.2	ns	ns
I25	01 Sep 2016	1208	6	<2	<2	<2	1.00	18.7	77.76	5.5	33.27	8.2	ns	ns
I25	01 Sep 2016	1208	9	<2	<2	<2	1.00	15.0	71.34	7.4	33.26	8.1	ns	ns
I25	06 Sep 2016	1309	2	<2	<2	<2	1.00	20.4	76.77	7.8	33.42	8.2	ns	ns
I25	06 Sep 2016	1309	6	<2	<2	<2	1.00	18.4	75.42	7.6	33.32	8.1	ns	ns

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH	OG	SUSO
I25	06 Sep 2016	1309	9	<2	<2	<2	1.00	16.2	77.76	8.3	33.29	8.1	ns	ns
I25	14 Sep 2016	1123	2	<2	<2	<2	1.00	18.4	80.24	8.6	33.39	8.2	ns	ns
I25	14 Sep 2016	1123	6	<2	<2	<2	1.00	17.8	78.64	7.9	33.34	8.2	ns	ns
I25	14 Sep 2016	1123	9	<2	<2	<2	1.00	14.8	72.32	7.7	33.28	8.1	ns	ns
I25	19 Sep 2016	1223	2	<2	<2	<2	1.00	17.5	81.00	8.0	33.34	8.1	ns	ns
I25	19 Sep 2016	1223	6	<2	<2	<2	1.00	15.2	77.91	7.4	33.25	8.1	ns	ns
I25	19 Sep 2016	1223	9	<2	<2	<2	1.00	14.6	77.15	7.5	33.26	8.1	ns	ns
I25	25 Sep 2016	1200	2	<2	<2	<2	1.00	18.9	68.74	8.6	33.22	8.2	ns	ns
I25	25 Sep 2016	1200	6	10e	<2	<2	0.20	16.6	66.98	7.1	33.22	8.1	ns	ns
I25	25 Sep 2016	1200	9	8e	<2	<2	0.25	16.0	65.17	7.8	33.24	8.1	ns	ns
I26	01 Sep 2016	1217	2	<2	<2	<2	1.00	19.3	81.71	7.4	33.38	8.2	ns	ns
I26	01 Sep 2016	1217	6	<2	<2	<2	1.00	18.5	77.57	5.7	33.35	8.2	ns	ns
I26	01 Sep 2016	1217	9	<2	2e	<2	1.00	15.7	72.95	7.0	33.19	8.1	ns	ns
I26	06 Sep 2016	1327	2	<2	<2	<2	1.00	20.4	73.36	7.6	33.39	8.2	ns	ns
I26	06 Sep 2016	1327	6	<2	<2	<2	1.00	17.7	73.01	7.5	33.22	8.2	ns	ns
I26	06 Sep 2016	1327	9	<2	<2	<2	1.00	16.2	77.00	8.0	33.25	8.1	ns	ns
I26	14 Sep 2016	1136	2	<2	<2	<2	1.00	18.4	77.96	8.3	33.38	8.2	ns	ns
I26	14 Sep 2016	1136	6	<2	<2	<2	1.00	15.6	73.63	7.6	33.27	8.2	ns	ns
I26	14 Sep 2016	1136	9	<2	<2	<2	1.00	15.0	69.84	7.7	33.27	8.1	ns	ns
I26	19 Sep 2016	1233	2	<2	<2	<2	1.00	17.1	79.51	8.0	33.36	8.1	ns	ns
I26	19 Sep 2016	1233	6	<2	<2	<2	1.00	15.4	78.78	8.0	33.29	8.1	ns	ns
I26	19 Sep 2016	1233	9	<2	<2	<2	1.00	14.6	77.55	7.4	33.27	8.1	ns	ns
I26	25 Sep 2016	1210	2	<2	<2	<2	1.00	18.6	64.41	9.0	33.18	8.2	ns	ns
I26	25 Sep 2016	1210	6	12e	<2	<2	0.17	16.4	73.18	7.6	33.20	8.2	ns	ns
I26	25 Sep 2016	1210	9	30e	<2	<2	0.07	15.7	69.17	7.7	33.24	8.1	ns	ns
I32	01 Sep 2016	1230	2	<2	<2	<2	1.00	19.7	78.68	8.0	33.40	8.2	ns	ns
I32	01 Sep 2016	1230	6	<2	<2	<2	1.00	19.6	78.51	6.5	33.40	8.2	ns	ns
I32	01 Sep 2016	1230	9	<2	<2	<2	1.00	19.4	78.46	7.8	33.25	8.2	ns	ns
I32	06 Sep 2016	1338	2	<2	<2	<2	1.00	20.6	64.70	7.8	33.39	8.2	ns	ns
I32	06 Sep 2016	1338	6	4e	<2	<2	0.50	20.5	64.13	5.4	33.38	8.2	ns	ns
I32	06 Sep 2016	1338	9	2e	<2	<2	1.00	16.3	61.02	7.3	33.22	8.1	ns	ns
I32	14 Sep 2016	1148	2	<2	<2	<2	1.00	18.0	71.48	8.4	33.37	8.2	ns	ns
I32	14 Sep 2016	1148	6	<2	<2	<2	1.00	17.0	69.04	7.3	33.25	8.2	ns	ns
I32	14 Sep 2016	1148	9	2e	<2	<2	1.00	14.7	67.32	6.4	33.28	8.1	ns	ns
I32	19 Sep 2016	1246	2	<2	<2	<2	1.00	17.4	79.11	8.0	33.35	8.1	ns	ns
I32	19 Sep 2016	1246	6	<2	<2	<2	1.00	16.5	74.54	8.0	33.33	8.1	ns	ns
I32	19 Sep 2016	1246	9	<2	<2	<2	1.00	15.9	75.82	6.7	33.27	8.1	ns	ns
I32	25 Sep 2016	1225	2	<2	<2	<2	1.00	18.5	61.78	8.1	33.16	8.2	ns	ns
I32	25 Sep 2016	1225	6	40e	14e	<2	0.35	16.7	60.04	6.8	33.18	8.2	ns	ns
I32	25 Sep 2016	1225	9	20e	2e	<2	0.10	15.7	60.03	6.3	33.22	8.1	ns	ns
I39	01 Sep 2016	1101	2	<2	<2	<2	1.00	19.4	82.32	7.7	33.41	8.2	ns	ns

Station	Date	Time	Depth	Total	Fecal	Entero	F:T	Temp	XMS	DO	Sal	pH	OG	SUSO
I39	01 Sep 2016	1101	12	<2	<2	<2	1.00	16.0	79.03	5.6	33.29	8.2	ns	ns
I39	01 Sep 2016	1101	18	<2	<2	<2	1.00	14.3	78.64	7.0	33.25	8.1	ns	ns
I39	06 Sep 2016	1212	2	<2	<2	<2	1.00	19.8	73.53	8.8	33.39	8.2	ns	ns
I39	06 Sep 2016	1212	12	<2	<2	<2	1.00	16.0	80.25	6.9	33.20	8.1	ns	ns
I39	06 Sep 2016	1212	18	2e	<2	<2	1.00	14.7	80.26	7.3	33.24	8.1	ns	ns
I39	14 Sep 2016	1027	2	<2	4e	<2	2.00	18.4	83.15	8.5	33.41	8.2	ns	ns
I39	14 Sep 2016	1027	12	<2	<2	<2	1.00	17.5	79.21	8.6	33.35	8.2	ns	ns
I39	14 Sep 2016	1027	18	2e	<2	<2	1.00	14.6	76.49	7.6	33.27	8.1	ns	ns
I39	19 Sep 2016	1129	2	<2	<2	<2	1.00	17.4	79.25	7.8	33.38	8.1	ns	ns
I39	19 Sep 2016	1129	12	<2	<2	<2	1.00	14.3	84.28	7.6	33.25	8.1	ns	ns
I39	19 Sep 2016	1129	18	<2	<2	<2	1.00	13.5	82.21	6.4	33.29	8.0	ns	ns
I39	25 Sep 2016	1059	2	<2	<2	<2	1.00	18.0	74.98	8.9	33.21	8.2	ns	ns
I39	25 Sep 2016	1059	12	8e	<2	<2	0.25	16.3	74.57	8.6	33.24	8.2	ns	ns
I39	25 Sep 2016	1059	18	<2	<2	<2	1.00	15.2	73.51	8.1	33.26	8.1	ns	ns
I40	01 Sep 2016	1143	2	<2	<2	<2	1.00	20.4	78.68	6.9	33.40	8.2	ns	ns
I40	01 Sep 2016	1143	6	<20	<2	<2	0.10	18.5	70.11	5.8	33.21	8.2	ns	ns
I40	01 Sep 2016	1143	9	<2	<2	<2	1.00	15.0	54.18	6.7	33.23	8.1	ns	ns
I40	06 Sep 2016	1245	2	<2	<2	<2	1.00	20.2	70.66	7.6	33.40	8.2	ns	ns
I40	06 Sep 2016	1245	6	<2	<2	<2	1.00	17.8	71.02	7.8	33.16	8.1	ns	ns
I40	06 Sep 2016	1245	9	<2	<2	<2	1.00	15.9	74.51	7.9	33.23	8.1	ns	ns
I40	14 Sep 2016	1105	2	<2	<2	<2	1.00	17.9	75.70	7.6	33.34	8.2	ns	ns
I40	14 Sep 2016	1105	6	<2	<2	<2	1.00	14.8	65.08	6.4	33.26	8.1	ns	ns
I40	14 Sep 2016	1105	9	2e	<2	<2	1.00	14.5	61.45	6.5	33.27	8.1	ns	ns
I40	19 Sep 2016	1206	2	<2	<2	2e	1.00	16.7	76.92	6.9	33.31	8.1	ns	ns
I40	19 Sep 2016	1206	6	<2	<2	2e	1.00	14.9	57.89	7.3	33.28	8.0	ns	ns
I40	19 Sep 2016	1206	9	<2	<2	<2	1.00	14.4	60.10	5.8	33.28	8.0	ns	ns
I40	25 Sep 2016	1136	2	4e	<2	<2	0.50	17.5	59.56	8.1	33.20	8.2	ns	ns
I40	25 Sep 2016	1136	6	8e	<2	<2	0.25	16.2	55.03	7.8	33.22	8.2	ns	ns
I40	25 Sep 2016	1136	9	8e	<2	<2	0.25	15.3	48.94	8.0	33.26	8.1	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	01 Sep 2016	Depth (m)	11
I19	01 Sep 2016	Arrive Time	1122
I19	01 Sep 2016	Depart Time	1137
I19	01 Sep 2016	Air Temp (C)	20
I19	01 Sep 2016	Weather	Cloudy
I19	01 Sep 2016	Visibility (mi)	4
I19	01 Sep 2016	Wind Speed (kts)	7
I19	01 Sep 2016	Wind Dir	S
I19	01 Sep 2016	Water Color	Green
I19	01 Sep 2016	Wave Ht Low (ft)	4
I19	01 Sep 2016	Wave Period (sec)	13
I19	01 Sep 2016	Sea State	Light chop
I19	01 Sep 2016	High Tide (ft)	4.94
I19	01 Sep 2016	High Tide Time	1002
I19	01 Sep 2016	Low Tide (ft)	1
I19	01 Sep 2016	Low Tide Time	1553
I19	01 Sep 2016	Comments	
I19	06 Sep 2016	Depth (m)	11
I19	06 Sep 2016	Arrive Time	1232
I19	06 Sep 2016	Depart Time	1235
I19	06 Sep 2016	Air Temp (C)	20
I19	06 Sep 2016	Weather	Clear
I19	06 Sep 2016	Visibility (mi)	7
I19	06 Sep 2016	Wind Speed (kts)	6
I19	06 Sep 2016	Wind Dir	S
I19	06 Sep 2016	Water Color	Green
I19	06 Sep 2016	Wave Ht Low (ft)	4
I19	06 Sep 2016	Wave Period (sec)	13
I19	06 Sep 2016	Sea State	Wind ripples
I19	06 Sep 2016	High Tide (ft)	4.58
I19	06 Sep 2016	High Tide Time	1230
I19	06 Sep 2016	Low Tide (ft)	1.71
I19	06 Sep 2016	Low Tide Time	611
I19	06 Sep 2016	Comments	
I19	14 Sep 2016	Depth (m)	10
I19	14 Sep 2016	Arrive Time	1051
I19	14 Sep 2016	Depart Time	1103
I19	14 Sep 2016	Air Temp (C)	18
I19	14 Sep 2016	Weather	Clear
I19	14 Sep 2016	Visibility (mi)	11
I19	14 Sep 2016	Wind Speed (kts)	11
I19	14 Sep 2016	Wind Dir	NE
I19	14 Sep 2016	Water Color	Green
I19	14 Sep 2016	Wave Ht Low (ft)	3
I19	14 Sep 2016	Wave Period (sec)	9
I19	14 Sep 2016	Sea State	Calm
I19	14 Sep 2016	High Tide (ft)	4.75
I19	14 Sep 2016	High Tide Time	825
I19	14 Sep 2016	Low Tide (ft)	1.25

Station	Date	Parameter	Value
I19	14 Sep 2016	Low Tide Time	1409
I19	14 Sep 2016	Comments	
I19	19 Sep 2016	Depth (m)	11
I19	19 Sep 2016	Arrive Time	1153
I19	19 Sep 2016	Depart Time	1155
I19	19 Sep 2016	Air Temp (C)	19
I19	19 Sep 2016	Weather	Continuous layer of clouds
I19	19 Sep 2016	Visibility (mi)	5
I19	19 Sep 2016	Wind Speed (kts)	8
I19	19 Sep 2016	Wind Dir	W
I19	19 Sep 2016	Water Color	Green
I19	19 Sep 2016	Wave Ht Low (ft)	3
I19	19 Sep 2016	Wave Period (sec)	13
I19	19 Sep 2016	Sea State	Light chop
I19	19 Sep 2016	High Tide (ft)	5.86
I19	19 Sep 2016	High Tide Time	1119
I19	19 Sep 2016	Low Tide (ft)	0.62
I19	19 Sep 2016	Low Tide Time	511
I19	19 Sep 2016	Comments	
I19	25 Sep 2016	Depth (m)	10
I19	25 Sep 2016	Arrive Time	1123
I19	25 Sep 2016	Depart Time	1126
I19	25 Sep 2016	Air Temp (C)	20
I19	25 Sep 2016	Weather	Clear
I19	25 Sep 2016	Visibility (mi)	12
I19	25 Sep 2016	Wind Speed (kts)	0
I19	25 Sep 2016	Wind Dir	
I19	25 Sep 2016	Water Color	Green
I19	25 Sep 2016	Wave Ht Low (ft)	3
I19	25 Sep 2016	Wave Period (sec)	9
I19	25 Sep 2016	Sea State	Calm
I19	25 Sep 2016	High Tide (ft)	4.26
I19	25 Sep 2016	High Tide Time	653
I19	25 Sep 2016	Low Tide (ft)	2.16
I19	25 Sep 2016	Low Tide Time	1215
I19	25 Sep 2016	Comments	
I24	01 Sep 2016	Depth (m)	11
I24	01 Sep 2016	Arrive Time	1150
I24	01 Sep 2016	Depart Time	1204
I24	01 Sep 2016	Air Temp (C)	20
I24	01 Sep 2016	Weather	Cloudy
I24	01 Sep 2016	Visibility (mi)	4
I24	01 Sep 2016	Wind Speed (kts)	7
I24	01 Sep 2016	Wind Dir	SW
I24	01 Sep 2016	Water Color	Green
I24	01 Sep 2016	Wave Ht Low (ft)	4
I24	01 Sep 2016	Wave Period (sec)	13
I24	01 Sep 2016	Sea State	Light chop
I24	01 Sep 2016	High Tide (ft)	4.94
I24	01 Sep 2016	High Tide Time	1002
I24	01 Sep 2016	Low Tide (ft)	1
I24	01 Sep 2016	Low Tide Time	1553



Station	Date	Parameter	Value
I24	01 Sep 2016	Comments	
I24	06 Sep 2016	Depth (m)	11
I24	06 Sep 2016	Arrive Time	1300
I24	06 Sep 2016	Depart Time	1303
I24	06 Sep 2016	Air Temp (C)	20
I24	06 Sep 2016	Weather	Clear
I24	06 Sep 2016	Visibility (mi)	7
I24	06 Sep 2016	Wind Speed (kts)	9
I24	06 Sep 2016	Wind Dir	NW
I24	06 Sep 2016	Water Color	Green
I24	06 Sep 2016	Wave Ht Low (ft)	4
I24	06 Sep 2016	Wave Period (sec)	13
I24	06 Sep 2016	Sea State	Wind ripples
I24	06 Sep 2016	High Tide (ft)	4.58
I24	06 Sep 2016	High Tide Time	1230
I24	06 Sep 2016	Low Tide (ft)	1.71
I24	06 Sep 2016	Low Tide Time	611
I24	06 Sep 2016	Comments	
I24	14 Sep 2016	Depth (m)	10
I24	14 Sep 2016	Arrive Time	1115
I24	14 Sep 2016	Depart Time	1119
I24	14 Sep 2016	Air Temp (C)	18
I24	14 Sep 2016	Weather	Clear
I24	14 Sep 2016	Visibility (mi)	11
I24	14 Sep 2016	Wind Speed (kts)	11
I24	14 Sep 2016	Wind Dir	S
I24	14 Sep 2016	Water Color	Green
I24	14 Sep 2016	Wave Ht Low (ft)	3
I24	14 Sep 2016	Wave Period (sec)	9
I24	14 Sep 2016	Sea State	Calm
I24	14 Sep 2016	High Tide (ft)	4.75
I24	14 Sep 2016	High Tide Time	825
I24	14 Sep 2016	Low Tide (ft)	1.25
I24	14 Sep 2016	Low Tide Time	1409
I24	14 Sep 2016	Comments	
I24	19 Sep 2016	Depth (m)	10
I24	19 Sep 2016	Arrive Time	1215
I24	19 Sep 2016	Depart Time	1217
I24	19 Sep 2016	Air Temp (C)	18
I24	19 Sep 2016	Weather	Continuous layer of clouds
I24	19 Sep 2016	Visibility (mi)	5
I24	19 Sep 2016	Wind Speed (kts)	8
I24	19 Sep 2016	Wind Dir	S
I24	19 Sep 2016	Water Color	Greenish-Brown
I24	19 Sep 2016	Wave Ht Low (ft)	3
I24	19 Sep 2016	Wave Period (sec)	13
I24	19 Sep 2016	Sea State	Light chop
I24	19 Sep 2016	High Tide (ft)	5.86
I24	19 Sep 2016	High Tide Time	1119
I24	19 Sep 2016	Low Tide (ft)	0.62
I24	19 Sep 2016	Low Tide Time	511
I24	19 Sep 2016	Comments	

Station	Date	Parameter	Value
I24	25 Sep 2016	Depth (m)	9
I24	25 Sep 2016	Arrive Time	1148
I24	25 Sep 2016	Depart Time	1157
I24	25 Sep 2016	Air Temp (C)	20
I24	25 Sep 2016	Weather	Clear
I24	25 Sep 2016	Visibility (mi)	12
I24	25 Sep 2016	Wind Speed (kts)	8
I24	25 Sep 2016	Wind Dir	S
I24	25 Sep 2016	Water Color	Green
I24	25 Sep 2016	Wave Ht Low (ft)	3
I24	25 Sep 2016	Wave Period (sec)	9
I24	25 Sep 2016	Sea State	Calm
I24	25 Sep 2016	High Tide (ft)	4.26
I24	25 Sep 2016	High Tide Time	653
I24	25 Sep 2016	Low Tide (ft)	2.16
I24	25 Sep 2016	Low Tide Time	1215
I24	25 Sep 2016	Comments	
I25	01 Sep 2016	Depth (m)	9
I25	01 Sep 2016	Arrive Time	1208
I25	01 Sep 2016	Depart Time	1211
I25	01 Sep 2016	Air Temp (C)	20
I25	01 Sep 2016	Weather	Cloudy
I25	01 Sep 2016	Visibility (mi)	4
I25	01 Sep 2016	Wind Speed (kts)	7
I25	01 Sep 2016	Wind Dir	E
I25	01 Sep 2016	Water Color	Green
I25	01 Sep 2016	Wave Ht Low (ft)	4
I25	01 Sep 2016	Wave Period (sec)	13
I25	01 Sep 2016	Sea State	Light chop
I25	01 Sep 2016	High Tide (ft)	4.94
I25	01 Sep 2016	High Tide Time	1002
I25	01 Sep 2016	Low Tide (ft)	1
I25	01 Sep 2016	Low Tide Time	1553
I25	01 Sep 2016	Comments	
I25	06 Sep 2016	Depth (m)	10
I25	06 Sep 2016	Arrive Time	1309
I25	06 Sep 2016	Depart Time	1318
I25	06 Sep 2016	Air Temp (C)	20
I25	06 Sep 2016	Weather	Clear
I25	06 Sep 2016	Visibility (mi)	7
I25	06 Sep 2016	Wind Speed (kts)	9
I25	06 Sep 2016	Wind Dir	SE
I25	06 Sep 2016	Water Color	Green
I25	06 Sep 2016	Wave Ht Low (ft)	4
I25	06 Sep 2016	Wave Period (sec)	13
I25	06 Sep 2016	Sea State	Wind ripples
I25	06 Sep 2016	High Tide (ft)	4.58
I25	06 Sep 2016	High Tide Time	1230
I25	06 Sep 2016	Low Tide (ft)	1.71
I25	06 Sep 2016	Low Tide Time	611
I25	06 Sep 2016	Comments	

Station	Date	Parameter	Value
I25	14 Sep 2016	Depth (m)	9
I25	14 Sep 2016	Arrive Time	1123
I25	14 Sep 2016	Depart Time	1126
I25	14 Sep 2016	Air Temp (C)	18
I25	14 Sep 2016	Weather	Clear
I25	14 Sep 2016	Visibility (mi)	11
I25	14 Sep 2016	Wind Speed (kts)	12
I25	14 Sep 2016	Wind Dir	E
I25	14 Sep 2016	Water Color	Green
I25	14 Sep 2016	Wave Ht Low (ft)	3
I25	14 Sep 2016	Wave Period (sec)	9
I25	14 Sep 2016	Sea State	Calm
I25	14 Sep 2016	High Tide (ft)	4.75
I25	14 Sep 2016	High Tide Time	825
I25	14 Sep 2016	Low Tide (ft)	1.25
I25	14 Sep 2016	Low Tide Time	1409
I25	14 Sep 2016	Comments	
I25	19 Sep 2016	Depth (m)	9
I25	19 Sep 2016	Arrive Time	1223
I25	19 Sep 2016	Depart Time	1225
I25	19 Sep 2016	Air Temp (C)	18
I25	19 Sep 2016	Weather	Continuous layer of clouds
I25	19 Sep 2016	Visibility (mi)	5
I25	19 Sep 2016	Wind Speed (kts)	4
I25	19 Sep 2016	Wind Dir	SE
I25	19 Sep 2016	Water Color	Green
I25	19 Sep 2016	Wave Ht Low (ft)	3
I25	19 Sep 2016	Wave Period (sec)	13
I25	19 Sep 2016	Sea State	Light chop
I25	19 Sep 2016	High Tide (ft)	5.86
I25	19 Sep 2016	High Tide Time	1119
I25	19 Sep 2016	Low Tide (ft)	0.62
I25	19 Sep 2016	Low Tide Time	511
I25	19 Sep 2016	Comments	Kelp
I25	25 Sep 2016	Depth (m)	10
I25	25 Sep 2016	Arrive Time	1200
I25	25 Sep 2016	Depart Time	1205
I25	25 Sep 2016	Air Temp (C)	21
I25	25 Sep 2016	Weather	Clear
I25	25 Sep 2016	Visibility (mi)	12
I25	25 Sep 2016	Wind Speed (kts)	10
I25	25 Sep 2016	Wind Dir	E
I25	25 Sep 2016	Water Color	Green
I25	25 Sep 2016	Wave Ht Low (ft)	3
I25	25 Sep 2016	Wave Period (sec)	9
I25	25 Sep 2016	Sea State	Calm
I25	25 Sep 2016	High Tide (ft)	4.26
I25	25 Sep 2016	High Tide Time	653
I25	25 Sep 2016	Low Tide (ft)	2.16
I25	25 Sep 2016	Low Tide Time	1215
I25	25 Sep 2016	Comments	
I26	01 Sep 2016	Depth (m)	9

Station	Date	Parameter	Value
I26	01 Sep 2016	Arrive Time	1217
I26	01 Sep 2016	Depart Time	1223
I26	01 Sep 2016	Air Temp (C)	20
I26	01 Sep 2016	Weather	Cloudy
I26	01 Sep 2016	Visibility (mi)	4
I26	01 Sep 2016	Wind Speed (kts)	2
I26	01 Sep 2016	Wind Dir	S
I26	01 Sep 2016	Water Color	Green
I26	01 Sep 2016	Wave Ht Low (ft)	4
I26	01 Sep 2016	Wave Period (sec)	13
I26	01 Sep 2016	Sea State	Light chop
I26	01 Sep 2016	High Tide (ft)	4.94
I26	01 Sep 2016	High Tide Time	1002
I26	01 Sep 2016	Low Tide (ft)	1
I26	01 Sep 2016	Low Tide Time	1553
I26	01 Sep 2016	Comments	
I26	06 Sep 2016	Depth (m)	9
I26	06 Sep 2016	Arrive Time	1327
I26	06 Sep 2016	Depart Time	1329
I26	06 Sep 2016	Air Temp (C)	20
I26	06 Sep 2016	Weather	Clear
I26	06 Sep 2016	Visibility (mi)	7
I26	06 Sep 2016	Wind Speed (kts)	10
I26	06 Sep 2016	Wind Dir	NE
I26	06 Sep 2016	Water Color	Green
I26	06 Sep 2016	Wave Ht Low (ft)	4
I26	06 Sep 2016	Wave Period (sec)	13
I26	06 Sep 2016	Sea State	Wind ripples
I26	06 Sep 2016	High Tide (ft)	4.58
I26	06 Sep 2016	High Tide Time	1230
I26	06 Sep 2016	Low Tide (ft)	1.71
I26	06 Sep 2016	Low Tide Time	611
I26	06 Sep 2016	Comments	
I26	14 Sep 2016	Depth (m)	9
I26	14 Sep 2016	Arrive Time	1136
I26	14 Sep 2016	Depart Time	1138
I26	14 Sep 2016	Air Temp (C)	18
I26	14 Sep 2016	Weather	Clear
I26	14 Sep 2016	Visibility (mi)	11
I26	14 Sep 2016	Wind Speed (kts)	12
I26	14 Sep 2016	Wind Dir	E
I26	14 Sep 2016	Water Color	Green
I26	14 Sep 2016	Wave Ht Low (ft)	3
I26	14 Sep 2016	Wave Period (sec)	9
I26	14 Sep 2016	Sea State	Light chop
I26	14 Sep 2016	High Tide (ft)	4.75
I26	14 Sep 2016	High Tide Time	825
I26	14 Sep 2016	Low Tide (ft)	1.25
I26	14 Sep 2016	Low Tide Time	1409
I26	14 Sep 2016	Comments	
I26	19 Sep 2016	Depth (m)	10
I26	19 Sep 2016	Arrive Time	1233

Station	Date	Parameter	Value
I26	19 Sep 2016	Depart Time	1236
I26	19 Sep 2016	Air Temp (C)	18
I26	19 Sep 2016	Weather	Continuous layer of clouds
I26	19 Sep 2016	Visibility (mi)	5
I26	19 Sep 2016	Wind Speed (kts)	4
I26	19 Sep 2016	Wind Dir	W
I26	19 Sep 2016	Water Color	Green
I26	19 Sep 2016	Wave Ht Low (ft)	3
I26	19 Sep 2016	Wave Period (sec)	13
I26	19 Sep 2016	Sea State	Light chop
I26	19 Sep 2016	High Tide (ft)	5.86
I26	19 Sep 2016	High Tide Time	1119
I26	19 Sep 2016	Low Tide (ft)	0.62
I26	19 Sep 2016	Low Tide Time	511
I26	19 Sep 2016	Comments	
I26	25 Sep 2016	Depth (m)	9
I26	25 Sep 2016	Arrive Time	1210
I26	25 Sep 2016	Depart Time	1214
I26	25 Sep 2016	Air Temp (C)	21
I26	25 Sep 2016	Weather	Clear
I26	25 Sep 2016	Visibility (mi)	12
I26	25 Sep 2016	Wind Speed (kts)	4
I26	25 Sep 2016	Wind Dir	S
I26	25 Sep 2016	Water Color	Green
I26	25 Sep 2016	Wave Ht Low (ft)	3
I26	25 Sep 2016	Wave Period (sec)	9
I26	25 Sep 2016	Sea State	Calm
I26	25 Sep 2016	High Tide (ft)	4.26
I26	25 Sep 2016	High Tide Time	653
I26	25 Sep 2016	Low Tide (ft)	2.16
I26	25 Sep 2016	Low Tide Time	1215
I26	25 Sep 2016	Comments	
I32	01 Sep 2016	Depth (m)	9
I32	01 Sep 2016	Arrive Time	1230
I32	01 Sep 2016	Depart Time	1237
I32	01 Sep 2016	Air Temp (C)	20
I32	01 Sep 2016	Weather	Cloudy
I32	01 Sep 2016	Visibility (mi)	5
I32	01 Sep 2016	Wind Speed (kts)	6
I32	01 Sep 2016	Wind Dir	NE
I32	01 Sep 2016	Water Color	Green
I32	01 Sep 2016	Wave Ht Low (ft)	4
I32	01 Sep 2016	Wave Period (sec)	13
I32	01 Sep 2016	Sea State	Light chop
I32	01 Sep 2016	High Tide (ft)	4.94
I32	01 Sep 2016	High Tide Time	1002
I32	01 Sep 2016	Low Tide (ft)	1
I32	01 Sep 2016	Low Tide Time	1553
I32	01 Sep 2016	Comments	
I32	06 Sep 2016	Depth (m)	9
I32	06 Sep 2016	Arrive Time	1338
I32	06 Sep 2016	Depart Time	1402

Station	Date	Parameter	Value
I32	06 Sep 2016	Air Temp (C)	20
I32	06 Sep 2016	Weather	Clear
I32	06 Sep 2016	Visibility (mi)	7
I32	06 Sep 2016	Wind Speed (kts)	10
I32	06 Sep 2016	Wind Dir	E
I32	06 Sep 2016	Water Color	Green
I32	06 Sep 2016	Wave Ht Low (ft)	4
I32	06 Sep 2016	Wave Period (sec)	13
I32	06 Sep 2016	Sea State	Wind ripples
I32	06 Sep 2016	High Tide (ft)	4.58
I32	06 Sep 2016	High Tide Time	1230
I32	06 Sep 2016	Low Tide (ft)	1.71
I32	06 Sep 2016	Low Tide Time	611
I32	06 Sep 2016	Comments	
I32	14 Sep 2016	Depth (m)	9
I32	14 Sep 2016	Arrive Time	1148
I32	14 Sep 2016	Depart Time	1154
I32	14 Sep 2016	Air Temp (C)	18
I32	14 Sep 2016	Weather	Clear
I32	14 Sep 2016	Visibility (mi)	11
I32	14 Sep 2016	Wind Speed (kts)	11
I32	14 Sep 2016	Wind Dir	SE
I32	14 Sep 2016	Water Color	Green
I32	14 Sep 2016	Wave Ht Low (ft)	3
I32	14 Sep 2016	Wave Period (sec)	9
I32	14 Sep 2016	Sea State	Light chop
I32	14 Sep 2016	High Tide (ft)	4.75
I32	14 Sep 2016	High Tide Time	825
I32	14 Sep 2016	Low Tide (ft)	1.25
I32	14 Sep 2016	Low Tide Time	1409
I32	14 Sep 2016	Comments	
I32	19 Sep 2016	Depth (m)	9
I32	19 Sep 2016	Arrive Time	1246
I32	19 Sep 2016	Depart Time	1248
I32	19 Sep 2016	Air Temp (C)	19
I32	19 Sep 2016	Weather	Continuous layer of clouds
I32	19 Sep 2016	Visibility (mi)	5
I32	19 Sep 2016	Wind Speed (kts)	6
I32	19 Sep 2016	Wind Dir	W
I32	19 Sep 2016	Water Color	Green
I32	19 Sep 2016	Wave Ht Low (ft)	3
I32	19 Sep 2016	Wave Period (sec)	13
I32	19 Sep 2016	Sea State	Light chop
I32	19 Sep 2016	High Tide (ft)	5.86
I32	19 Sep 2016	High Tide Time	1119
I32	19 Sep 2016	Low Tide (ft)	0.62
I32	19 Sep 2016	Low Tide Time	511
I32	19 Sep 2016	Comments	
I32	25 Sep 2016	Depth (m)	10
I32	25 Sep 2016	Arrive Time	1225
I32	25 Sep 2016	Depart Time	1230
I32	25 Sep 2016	Air Temp (C)	21

Station	Date	Parameter	Value
I32	25 Sep 2016	Weather	Clear
I32	25 Sep 2016	Visibility (mi)	12
I32	25 Sep 2016	Wind Speed (kts)	7
I32	25 Sep 2016	Wind Dir	E
I32	25 Sep 2016	Water Color	Green
I32	25 Sep 2016	Wave Ht Low (ft)	3
I32	25 Sep 2016	Wave Period (sec)	9
I32	25 Sep 2016	Sea State	Calm
I32	25 Sep 2016	High Tide (ft)	4.26
I32	25 Sep 2016	High Tide Time	653
I32	25 Sep 2016	Low Tide (ft)	2.16
I32	25 Sep 2016	Low Tide Time	1215
I32	25 Sep 2016	Comments	
I39	01 Sep 2016	Depth (m)	18
I39	01 Sep 2016	Arrive Time	1101
I39	01 Sep 2016	Depart Time	1110
I39	01 Sep 2016	Air Temp (C)	20
I39	01 Sep 2016	Weather	Cloudy
I39	01 Sep 2016	Visibility (mi)	4
I39	01 Sep 2016	Wind Speed (kts)	8
I39	01 Sep 2016	Wind Dir	E
I39	01 Sep 2016	Water Color	Green
I39	01 Sep 2016	Wave Ht Low (ft)	4
I39	01 Sep 2016	Wave Period (sec)	13
I39	01 Sep 2016	Sea State	Light chop
I39	01 Sep 2016	High Tide (ft)	4.94
I39	01 Sep 2016	High Tide Time	1002
I39	01 Sep 2016	Low Tide (ft)	1
I39	01 Sep 2016	Low Tide Time	1553
I39	01 Sep 2016	Comments	
I39	06 Sep 2016	Depth (m)	19
I39	06 Sep 2016	Arrive Time	1212
I39	06 Sep 2016	Depart Time	1214
I39	06 Sep 2016	Air Temp (C)	20
I39	06 Sep 2016	Weather	Clear
I39	06 Sep 2016	Visibility (mi)	7
I39	06 Sep 2016	Wind Speed (kts)	9
I39	06 Sep 2016	Wind Dir	S
I39	06 Sep 2016	Water Color	Bluish-Green
I39	06 Sep 2016	Wave Ht Low (ft)	4
I39	06 Sep 2016	Wave Period (sec)	13
I39	06 Sep 2016	Sea State	Wind ripples
I39	06 Sep 2016	High Tide (ft)	4.58
I39	06 Sep 2016	High Tide Time	1230
I39	06 Sep 2016	Low Tide (ft)	1.71
I39	06 Sep 2016	Low Tide Time	611
I39	06 Sep 2016	Comments	
I39	14 Sep 2016	Depth (m)	18
I39	14 Sep 2016	Arrive Time	1027
I39	14 Sep 2016	Depart Time	1032
I39	14 Sep 2016	Air Temp (C)	19
I39	14 Sep 2016	Weather	Clear

Station	Date	Parameter	Value
I39	14 Sep 2016	Visibility (mi)	8
I39	14 Sep 2016	Wind Speed (kts)	6
I39	14 Sep 2016	Wind Dir	W
I39	14 Sep 2016	Water Color	Green
I39	14 Sep 2016	Wave Ht Low (ft)	3
I39	14 Sep 2016	Wave Period (sec)	9
I39	14 Sep 2016	Sea State	Calm
I39	14 Sep 2016	High Tide (ft)	4.75
I39	14 Sep 2016	High Tide Time	825
I39	14 Sep 2016	Low Tide (ft)	1.25
I39	14 Sep 2016	Low Tide Time	1409
I39	14 Sep 2016	Comments	Kelp debris
I39	19 Sep 2016	Depth (m)	19
I39	19 Sep 2016	Arrive Time	1129
I39	19 Sep 2016	Depart Time	1133
I39	19 Sep 2016	Air Temp (C)	19
I39	19 Sep 2016	Weather	Partly Cloudy
I39	19 Sep 2016	Visibility (mi)	5
I39	19 Sep 2016	Wind Speed (kts)	5
I39	19 Sep 2016	Wind Dir	SW
I39	19 Sep 2016	Water Color	Green
I39	19 Sep 2016	Wave Ht Low (ft)	3
I39	19 Sep 2016	Wave Period (sec)	13
I39	19 Sep 2016	Sea State	Light chop
I39	19 Sep 2016	High Tide (ft)	5.86
I39	19 Sep 2016	High Tide Time	1119
I39	19 Sep 2016	Low Tide (ft)	0.62
I39	19 Sep 2016	Low Tide Time	511
I39	19 Sep 2016	Comments	
I39	25 Sep 2016	Depth (m)	19
I39	25 Sep 2016	Arrive Time	1059
I39	25 Sep 2016	Depart Time	1103
I39	25 Sep 2016	Air Temp (C)	20
I39	25 Sep 2016	Weather	Clear
I39	25 Sep 2016	Visibility (mi)	12
I39	25 Sep 2016	Wind Speed (kts)	7
I39	25 Sep 2016	Wind Dir	NE
I39	25 Sep 2016	Water Color	Green
I39	25 Sep 2016	Wave Ht Low (ft)	3
I39	25 Sep 2016	Wave Period (sec)	9
I39	25 Sep 2016	Sea State	Calm
I39	25 Sep 2016	High Tide (ft)	4.26
I39	25 Sep 2016	High Tide Time	653
I39	25 Sep 2016	Low Tide (ft)	2.16
I39	25 Sep 2016	Low Tide Time	1215
I39	25 Sep 2016	Comments	
I40	01 Sep 2016	Depth (m)	9
I40	01 Sep 2016	Arrive Time	1143
I40	01 Sep 2016	Depart Time	1145
I40	01 Sep 2016	Air Temp (C)	20
I40	01 Sep 2016	Weather	Cloudy
I40	01 Sep 2016	Visibility (mi)	4



Station	Date	Parameter	Value
I40	01 Sep 2016	Wind Speed (kts)	6
I40	01 Sep 2016	Wind Dir	W
I40	01 Sep 2016	Water Color	Green
I40	01 Sep 2016	Wave Ht Low (ft)	4
I40	01 Sep 2016	Wave Period (sec)	13
I40	01 Sep 2016	Sea State	Light chop
I40	01 Sep 2016	High Tide (ft)	4.94
I40	01 Sep 2016	High Tide Time	1002
I40	01 Sep 2016	Low Tide (ft)	1
I40	01 Sep 2016	Low Tide Time	1553
I40	01 Sep 2016	Comments	
I40	06 Sep 2016	Depth (m)	9
I40	06 Sep 2016	Arrive Time	1245
I40	06 Sep 2016	Depart Time	1251
I40	06 Sep 2016	Air Temp (C)	20
I40	06 Sep 2016	Weather	Clear
I40	06 Sep 2016	Visibility (mi)	7
I40	06 Sep 2016	Wind Speed (kts)	10
I40	06 Sep 2016	Wind Dir	E
I40	06 Sep 2016	Water Color	Green
I40	06 Sep 2016	Wave Ht Low (ft)	4
I40	06 Sep 2016	Wave Period (sec)	13
I40	06 Sep 2016	Sea State	Wind ripples
I40	06 Sep 2016	High Tide (ft)	4.58
I40	06 Sep 2016	High Tide Time	1230
I40	06 Sep 2016	Low Tide (ft)	1.71
I40	06 Sep 2016	Low Tide Time	611
I40	06 Sep 2016	Comments	
I40	14 Sep 2016	Depth (m)	10
I40	14 Sep 2016	Arrive Time	1105
I40	14 Sep 2016	Depart Time	1109
I40	14 Sep 2016	Air Temp (C)	18
I40	14 Sep 2016	Weather	Clear
I40	14 Sep 2016	Visibility (mi)	11
I40	14 Sep 2016	Wind Speed (kts)	10
I40	14 Sep 2016	Wind Dir	NW
I40	14 Sep 2016	Water Color	Green
I40	14 Sep 2016	Wave Ht Low (ft)	3
I40	14 Sep 2016	Wave Period (sec)	9
I40	14 Sep 2016	Sea State	Calm
I40	14 Sep 2016	High Tide (ft)	4.75
I40	14 Sep 2016	High Tide Time	825
I40	14 Sep 2016	Low Tide (ft)	1.25
I40	14 Sep 2016	Low Tide Time	1409
I40	14 Sep 2016	Comments	
I40	19 Sep 2016	Depth (m)	10
I40	19 Sep 2016	Arrive Time	1206
I40	19 Sep 2016	Depart Time	1208
I40	19 Sep 2016	Air Temp (C)	19
I40	19 Sep 2016	Weather	Continuous layer of clouds
I40	19 Sep 2016	Visibility (mi)	5
I40	19 Sep 2016	Wind Speed (kts)	5

Station	Date	Parameter	Value
I40	19 Sep 2016	Wind Dir	S
I40	19 Sep 2016	Water Color	Greenish-Brown
I40	19 Sep 2016	Wave Ht Low (ft)	3
I40	19 Sep 2016	Wave Period (sec)	13
I40	19 Sep 2016	Sea State	Light chop
I40	19 Sep 2016	High Tide (ft)	5.86
I40	19 Sep 2016	High Tide Time	1119
I40	19 Sep 2016	Low Tide (ft)	0.62
I40	19 Sep 2016	Low Tide Time	511
I40	19 Sep 2016	Comments	
I40	25 Sep 2016	Depth (m)	9
I40	25 Sep 2016	Arrive Time	1136
I40	25 Sep 2016	Depart Time	1141
I40	25 Sep 2016	Air Temp (C)	20
I40	25 Sep 2016	Weather	Clear
I40	25 Sep 2016	Visibility (mi)	12
I40	25 Sep 2016	Wind Speed (kts)	8
I40	25 Sep 2016	Wind Dir	NE
I40	25 Sep 2016	Water Color	Green
I40	25 Sep 2016	Wave Ht Low (ft)	3
I40	25 Sep 2016	Wave Period (sec)	9
I40	25 Sep 2016	Sea State	Calm
I40	25 Sep 2016	High Tide (ft)	4.26
I40	25 Sep 2016	High Tide Time	653
I40	25 Sep 2016	Low Tide (ft)	2.16
I40	25 Sep 2016	Low Tide Time	1215
I40	25 Sep 2016	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	01 Sep 2016	1	19.83	73.94	7.4	33.46	8.2	23.6	1.92
I19	01 Sep 2016	2	19.70	73.98	6.8	33.44	8.2	23.7	2.79
I19	01 Sep 2016	3	19.38	72.85	7.0	33.40	8.2	23.7	3.86
I19	01 Sep 2016	4	18.82	69.43	7.0	33.41	8.2	23.9	4.31
I19	01 Sep 2016	5	18.57	62.72	6.3	33.56	8.2	24.0	4.86
I19	01 Sep 2016	6	18.21	60.79	5.6	33.64	8.1	24.2	5.03
I19	01 Sep 2016	7	17.68	59.31	5.4	33.58	8.1	24.3	5.06
I19	01 Sep 2016	8	16.37	65.48	5.5	33.46	8.1	24.5	5.08
I19	01 Sep 2016	9	15.17	67.03	5.9	33.40	8.1	24.7	5.10
I19	01 Sep 2016	10	14.98	61.96	6.2	33.31	8.1	24.7	5.36
I19	06 Sep 2016	1	20.20	73.26	7.3	33.39	8.2	23.5	3.84
I19	06 Sep 2016	2	20.17	72.94	7.0	33.37	8.2	23.5	4.36
I19	06 Sep 2016	3	19.48	71.43	7.0	33.27	8.2	23.6	4.29
I19	06 Sep 2016	4	18.46	68.82	7.2	33.21	8.2	23.8	4.16
I19	06 Sep 2016	5	17.31	69.42	7.4	33.21	8.1	24.1	4.19
I19	06 Sep 2016	6	16.58	66.85	7.5	33.25	8.1	24.3	4.26
I19	06 Sep 2016	7	16.29	66.52	7.5	33.25	8.1	24.3	4.25
I19	06 Sep 2016	8	16.13	66.01	7.6	33.26	8.1	24.4	4.16
I19	06 Sep 2016	9	16.03	63.47	7.6	33.25	8.1	24.4	4.10
I19	06 Sep 2016	10	15.92	61.42	7.6	33.25	8.1	24.4	4.05
I19	14 Sep 2016	1	18.08	74.11	8.0	33.37	8.2	24.0	3.34
I19	14 Sep 2016	2	18.06	74.01	7.2	33.37	8.2	24.0	4.87
I19	14 Sep 2016	3	17.64	72.73	6.8	33.29	8.2	24.1	5.97
I19	14 Sep 2016	4	16.28	68.73	6.7	33.25	8.2	24.3	6.99
I19	14 Sep 2016	5	15.54	66.94	6.6	33.29	8.2	24.5	7.70
I19	14 Sep 2016	6	15.15	68.72	6.6	33.24	8.1	24.6	8.20
I19	14 Sep 2016	7	14.72	69.65	6.6	33.26	8.1	24.7	8.86
I19	14 Sep 2016	8	14.60	68.83	6.5	33.27	8.1	24.7	9.21
I19	14 Sep 2016	9	14.57	67.51	6.5	33.26	8.1	24.7	8.88
I19	14 Sep 2016	10	14.48	62.91	6.6	33.26	8.1	24.7	8.57
I19	19 Sep 2016	1	16.90	76.49	8.1	33.33	8.1	24.3	3.02
I19	19 Sep 2016	2	16.49	76.56	8.1	33.32	8.1	24.3	3.63
I19	19 Sep 2016	3	16.02	76.14	8.1	33.30	8.1	24.4	4.11
I19	19 Sep 2016	4	15.82	74.89	8.2	33.30	8.1	24.5	4.31
I19	19 Sep 2016	5	15.69	74.41	8.2	33.30	8.1	24.5	4.44
I19	19 Sep 2016	6	15.66	74.23	8.2	33.30	8.1	24.5	4.54
I19	19 Sep 2016	7	15.57	73.86	8.0	33.30	8.1	24.5	5.74
I19	19 Sep 2016	8	15.54	73.48	7.1	33.30	8.1	24.5	9.01
I19	19 Sep 2016	9	15.33	72.77	5.9	33.28	8.1	24.6	10.57
I19	19 Sep 2016	10	14.54	63.52	5.9	33.27	8.0	24.7	10.62
I19	25 Sep 2016	1	17.39	63.08	8.2	33.24	8.2	24.1	1.96
I19	25 Sep 2016	2	17.29	62.26	8.1	33.22	8.2	24.1	2.79
I19	25 Sep 2016	3	16.84	60.46	8.2	33.24	8.2	24.2	3.69
I19	25 Sep 2016	4	16.40	60.32	8.3	33.22	8.2	24.3	3.50
I19	25 Sep 2016	5	16.00	66.51	8.3	33.26	8.2	24.4	3.37
I19	25 Sep 2016	6	15.94	67.52	8.3	33.25	8.2	24.4	3.33
I19	25 Sep 2016	7	15.77	69.49	8.2	33.25	8.2	24.5	3.43

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I19	25 Sep 2016	8	15.67	70.40	7.9	33.26	8.2	24.5	3.45
I19	25 Sep 2016	9	15.56	70.43	7.8	33.26	8.2	24.5	3.41
I19	25 Sep 2016	10	15.47	59.85	8.0	33.26	8.1	24.5	3.38
I24	01 Sep 2016	1	19.91	80.68	7.8	33.40	8.2	23.6	2.97
I24	01 Sep 2016	2	19.80	80.25	7.5	33.38	8.2	23.6	3.87
I24	01 Sep 2016	3	19.64	78.85	6.9	33.39	8.2	23.6	4.10
I24	01 Sep 2016	4	19.44	76.69	6.2	33.32	8.2	23.6	3.65
I24	01 Sep 2016	5	18.79	76.40	5.6	33.32	8.2	23.8	3.80
I24	01 Sep 2016	6	18.55	76.67	5.4	33.28	8.2	23.8	3.79
I24	01 Sep 2016	7	17.64	75.29	5.7	33.21	8.2	24.0	3.58
I24	01 Sep 2016	8	16.29	72.70	6.1	33.02	8.1	24.2	3.46
I24	01 Sep 2016	9	15.02	69.73	6.4	33.23	8.1	24.6	3.51
I24	01 Sep 2016	10	14.77	68.40	6.6	33.21	8.1	24.6	3.76
I24	01 Sep 2016	11	14.71	62.56	6.5	33.24	8.1	24.7	3.66
I24	06 Sep 2016	1	20.38	76.78	8.4	33.42	8.2	23.5	1.89
I24	06 Sep 2016	2	20.34	76.78	8.0	33.42	8.2	23.5	2.44
I24	06 Sep 2016	3	20.35	76.70	7.5	33.43	8.2	23.5	2.50
I24	06 Sep 2016	4	20.36	76.95	7.3	33.42	8.2	23.5	2.41
I24	06 Sep 2016	5	20.28	76.67	7.3	33.39	8.2	23.5	2.32
I24	06 Sep 2016	6	19.86	75.95	7.4	33.33	8.2	23.5	2.15
I24	06 Sep 2016	7	19.42	75.11	7.5	33.30	8.2	23.6	2.11
I24	06 Sep 2016	8	17.77	75.42	7.7	33.03	8.2	23.8	2.24
I24	06 Sep 2016	9	16.35	77.47	7.9	33.20	8.1	24.3	2.34
I24	06 Sep 2016	10	15.93	77.95	8.0	33.26	8.1	24.4	2.57
I24	06 Sep 2016	11	15.83	76.55	8.1	33.23	8.1	24.4	2.58
I24	14 Sep 2016	1	18.45	79.84	8.5	33.39	8.2	23.9	1.22
I24	14 Sep 2016	2	18.44	79.92	8.5	33.39	8.2	23.9	1.67
I24	14 Sep 2016	3	18.35	79.82	8.5	33.38	8.2	23.9	2.66
I24	14 Sep 2016	4	18.23	79.08	8.5	33.38	8.2	24.0	3.40
I24	14 Sep 2016	5	17.96	78.25	8.5	33.34	8.2	24.0	4.95
I24	14 Sep 2016	6	17.23	74.44	7.9	33.31	8.2	24.2	6.45
I24	14 Sep 2016	7	16.64	73.52	7.0	33.28	8.2	24.3	7.21
I24	14 Sep 2016	8	15.39	71.62	6.4	33.21	8.2	24.5	7.01
I24	14 Sep 2016	9	14.61	68.64	6.3	33.27	8.2	24.7	6.74
I24	14 Sep 2016	10	14.48	69.50	7.0	33.26	8.1	24.7	6.65
I24	14 Sep 2016	11	14.45	69.42	7.7	33.27	8.1	24.8	6.50
I24	19 Sep 2016	1	17.08	80.39	8.3	33.34	8.1	24.2	2.98
I24	19 Sep 2016	2	16.57	80.18	8.4	33.33	8.1	24.3	3.43
I24	19 Sep 2016	3	16.33	79.95	8.3	33.33	8.1	24.4	4.11
I24	19 Sep 2016	4	16.10	79.09	8.0	33.31	8.1	24.4	4.94
I24	19 Sep 2016	5	15.69	78.65	7.4	33.28	8.1	24.5	5.97
I24	19 Sep 2016	6	15.40	77.19	6.6	33.28	8.1	24.6	6.53
I24	19 Sep 2016	7	14.98	74.19	6.2	33.26	8.1	24.6	7.91
I24	19 Sep 2016	8	14.55	68.88	6.0	33.27	8.0	24.7	7.92
I24	19 Sep 2016	9	14.44	65.65	5.8	33.26	8.0	24.8	5.98
I24	19 Sep 2016	10	14.21	63.75	5.9	33.28	8.0	24.8	6.05
I24	19 Sep 2016	11	14.17	63.70	6.1	33.28	7.9	24.8	5.19
I24	25 Sep 2016	1	17.94	69.02	8.3	33.23	8.2	23.9	1.48
I24	25 Sep 2016	2	17.83	69.05	7.8	33.23	8.2	24.0	1.66
I24	25 Sep 2016	3	17.46	70.39	7.4	33.22	8.2	24.0	1.79

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I24	25 Sep 2016	4	17.11	68.52	7.8	33.22	8.1	24.1	2.49
I24	25 Sep 2016	5	16.97	68.74	7.8	33.23	8.1	24.2	2.38
I24	25 Sep 2016	6	16.78	70.87	7.6	33.22	8.1	24.2	2.17
I24	25 Sep 2016	7	16.35	69.65	7.6	33.22	8.1	24.3	2.11
I24	25 Sep 2016	8	15.65	68.09	7.7	33.24	8.1	24.5	2.10
I24	25 Sep 2016	9	15.26	65.72	7.8	33.26	8.1	24.6	2.09
I24	25 Sep 2016	10	15.22	61.93	7.9	33.26	8.1	24.6	2.16
I24	25 Sep 2016	11	15.22	54.38	7.9	33.26	8.1	24.6	2.11
I25	01 Sep 2016	1	19.68	78.44	8.0	33.40	8.2	23.6	3.04
I25	01 Sep 2016	2	19.55	79.52	7.7	33.38	8.2	23.6	3.42
I25	01 Sep 2016	3	19.44	79.46	7.0	33.39	8.2	23.7	3.07
I25	01 Sep 2016	4	19.39	79.32	6.2	33.39	8.2	23.7	3.03
I25	01 Sep 2016	5	19.28	79.18	5.5	33.34	8.2	23.7	2.87
I25	01 Sep 2016	6	18.68	77.76	5.5	33.27	8.2	23.8	2.77
I25	01 Sep 2016	7	18.38	76.92	6.0	33.29	8.2	23.9	2.93
I25	01 Sep 2016	8	16.16	71.22	6.6	33.02	8.2	24.2	3.24
I25	01 Sep 2016	9	15.03	71.34	7.4	33.26	8.1	24.6	2.96
I25	06 Sep 2016	1	20.42	75.62	8.9	33.39	8.2	23.4	1.49
I25	06 Sep 2016	2	20.41	76.77	7.8	33.42	8.2	23.4	1.94
I25	06 Sep 2016	3	20.36	76.81	7.0	33.42	8.2	23.5	2.01
I25	06 Sep 2016	4	20.25	76.98	7.1	33.42	8.2	23.5	1.68
I25	06 Sep 2016	5	19.79	77.07	7.5	33.32	8.2	23.5	1.69
I25	06 Sep 2016	6	18.39	75.42	7.6	33.32	8.1	23.9	1.58
I25	06 Sep 2016	7	17.22	76.89	7.6	33.25	8.1	24.1	1.58
I25	06 Sep 2016	8	16.28	78.05	8.0	33.28	8.1	24.4	1.74
I25	06 Sep 2016	9	16.21	77.76	8.3	33.29	8.1	24.4	1.85
I25	14 Sep 2016	1	18.35	79.93	8.6	33.39	8.2	23.9	0.90
I25	14 Sep 2016	2	18.35	80.24	8.6	33.39	8.2	24.0	1.14
I25	14 Sep 2016	3	18.38	80.83	8.6	33.39	8.2	23.9	1.48
I25	14 Sep 2016	4	18.26	80.12	8.5	33.38	8.2	24.0	1.74
I25	14 Sep 2016	5	18.11	79.25	8.4	33.38	8.2	24.0	2.13
I25	14 Sep 2016	6	17.80	78.64	7.9	33.34	8.2	24.1	2.68
I25	14 Sep 2016	7	16.66	77.40	6.4	33.30	8.2	24.3	2.87
I25	14 Sep 2016	8	15.39	73.37	6.4	33.24	8.2	24.5	2.67
I25	14 Sep 2016	9	14.79	72.32	7.7	33.28	8.1	24.7	2.63
I25	19 Sep 2016	1	17.56	81.09	7.9	33.37	8.1	24.1	2.99
I25	19 Sep 2016	2	17.53	81.00	8.0	33.34	8.1	24.1	3.79
I25	19 Sep 2016	3	16.44	80.84	8.2	33.31	8.1	24.3	4.38
I25	19 Sep 2016	4	15.84	79.95	7.9	33.30	8.1	24.5	4.77
I25	19 Sep 2016	5	15.62	79.15	7.5	33.28	8.1	24.5	4.67
I25	19 Sep 2016	6	15.22	77.91	7.4	33.25	8.1	24.6	3.96
I25	19 Sep 2016	7	14.69	76.39	7.5	33.26	8.1	24.7	3.23
I25	19 Sep 2016	8	14.59	75.97	7.5	33.26	8.1	24.7	3.03
I25	19 Sep 2016	9	14.55	77.15	7.5	33.26	8.1	24.7	3.09
I25	25 Sep 2016	1	18.87	68.79	8.4	33.23	8.2	23.7	1.70
I25	25 Sep 2016	2	18.85	68.74	8.6	33.22	8.2	23.7	2.00
I25	25 Sep 2016	3	18.02	69.03	8.4	33.16	8.2	23.9	2.13
I25	25 Sep 2016	4	17.33	72.81	7.4	33.23	8.2	24.1	2.28
I25	25 Sep 2016	5	17.00	72.20	6.9	33.19	8.2	24.1	2.21
I25	25 Sep 2016	6	16.59	66.98	7.1	33.22	8.1	24.2	2.15

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I25	25 Sep 2016	7	16.34	62.97	7.5	33.21	8.1	24.3	2.07
I25	25 Sep 2016	8	16.02	63.71	7.8	33.24	8.1	24.4	2.09
I25	25 Sep 2016	9	15.99	65.17	7.8	33.24	8.1	24.4	2.06
I26	01 Sep 2016	1	19.30	80.40	7.9	33.39	8.2	23.7	2.23
I26	01 Sep 2016	2	19.27	81.71	7.4	33.38	8.2	23.7	2.19
I26	01 Sep 2016	3	19.05	81.47	6.9	33.35	8.2	23.8	2.02
I26	01 Sep 2016	4	18.77	79.37	6.0	33.37	8.2	23.8	1.90
I26	01 Sep 2016	5	18.68	78.20	5.6	33.36	8.2	23.8	1.89
I26	01 Sep 2016	6	18.53	77.57	5.7	33.35	8.2	23.9	1.90
I26	01 Sep 2016	7	18.15	76.35	6.0	33.16	8.2	23.8	1.90
I26	01 Sep 2016	8	16.24	72.71	6.5	33.29	8.1	24.4	1.95
I26	01 Sep 2016	9	15.67	72.95	7.0	33.19	8.1	24.4	2.06
I26	06 Sep 2016	1	20.45	69.43	8.4	33.40	8.2	23.4	4.65
I26	06 Sep 2016	2	20.42	73.36	7.6	33.39	8.2	23.4	5.03
I26	06 Sep 2016	3	20.24	73.66	7.5	33.36	8.2	23.5	4.82
I26	06 Sep 2016	4	19.83	72.53	7.8	33.31	8.2	23.5	2.70
I26	06 Sep 2016	5	18.93	70.95	7.7	33.24	8.2	23.7	2.63
I26	06 Sep 2016	6	17.69	73.01	7.5	33.22	8.2	24.0	3.42
I26	06 Sep 2016	7	17.16	73.80	7.7	33.27	8.2	24.1	3.30
I26	06 Sep 2016	8	16.67	73.98	7.9	33.21	8.1	24.2	2.39
I26	06 Sep 2016	9	16.23	77.00	8.0	33.25	8.1	24.3	2.22
I26	14 Sep 2016	1	18.41	76.67	8.4	33.39	8.2	23.9	1.37
I26	14 Sep 2016	2	18.40	77.96	8.3	33.38	8.2	23.9	2.19
I26	14 Sep 2016	3	18.18	79.61	8.2	33.34	8.2	24.0	3.12
I26	14 Sep 2016	4	16.52	77.29	8.2	33.27	8.2	24.3	3.80
I26	14 Sep 2016	5	15.79	74.04	8.0	33.28	8.2	24.5	4.76
I26	14 Sep 2016	6	15.55	73.63	7.6	33.27	8.2	24.5	6.62
I26	14 Sep 2016	7	15.32	74.33	7.1	33.26	8.2	24.6	7.43
I26	14 Sep 2016	8	15.11	74.04	7.0	33.27	8.2	24.6	6.61
I26	14 Sep 2016	9	14.98	69.84	7.7	33.27	8.1	24.6	5.60
I26	19 Sep 2016	1	17.08	79.20	8.1	33.35	8.1	24.2	2.18
I26	19 Sep 2016	2	17.06	79.51	8.0	33.36	8.1	24.2	3.03
I26	19 Sep 2016	3	16.38	80.05	8.2	33.32	8.1	24.4	3.89
I26	19 Sep 2016	4	15.96	79.35	8.2	33.32	8.1	24.5	4.36
I26	19 Sep 2016	5	15.64	78.82	8.2	33.30	8.1	24.5	4.65
I26	19 Sep 2016	6	15.42	78.78	8.0	33.29	8.1	24.6	4.64
I26	19 Sep 2016	7	15.31	78.23	7.6	33.29	8.1	24.6	3.99
I26	19 Sep 2016	8	15.05	77.39	7.3	33.27	8.1	24.6	3.26
I26	19 Sep 2016	9	14.58	77.55	7.4	33.27	8.1	24.7	3.25
I26	25 Sep 2016	1	18.85	64.83	8.8	33.20	8.2	23.7	3.52
I26	25 Sep 2016	2	18.63	64.41	9.0	33.18	8.2	23.7	3.89
I26	25 Sep 2016	3	17.74	63.04	8.7	33.18	8.2	23.9	4.34
I26	25 Sep 2016	4	17.43	68.01	8.2	33.17	8.2	24.0	4.64
I26	25 Sep 2016	5	16.87	70.64	7.9	33.19	8.2	24.2	4.59
I26	25 Sep 2016	6	16.44	73.18	7.6	33.20	8.2	24.3	4.33
I26	25 Sep 2016	7	16.22	72.69	7.5	33.20	8.2	24.3	4.16
I26	25 Sep 2016	8	15.79	71.54	7.7	33.22	8.1	24.4	3.50
I26	25 Sep 2016	9	15.72	69.17	7.7	33.24	8.1	24.5	2.66
I32	01 Sep 2016	1	19.68	78.66	8.0	33.40	8.2	23.6	2.05

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I32	01 Sep 2016	2	19.67	78.68	8.0	33.40	8.2	23.6	2.04
I32	01 Sep 2016	3	19.66	78.68	8.0	33.40	8.2	23.6	2.69
I32	01 Sep 2016	4	19.66	78.54	7.8	33.40	8.2	23.6	3.80
I32	01 Sep 2016	5	19.65	78.47	7.2	33.40	8.2	23.6	3.87
I32	01 Sep 2016	6	19.63	78.51	6.5	33.40	8.2	23.6	3.30
I32	01 Sep 2016	7	19.62	78.34	5.9	33.39	8.2	23.6	2.46
I32	01 Sep 2016	8	19.60	78.37	6.3	33.39	8.2	23.6	2.07
I32	01 Sep 2016	9	19.41	78.46	7.8	33.25	8.2	23.6	1.97
I32	01 Sep 2016	10	16.89	71.93	9.3	33.14	8.2	24.1	1.90
I32	06 Sep 2016	1	20.65	65.02	9.0	33.39	8.2	23.4	7.18
I32	06 Sep 2016	2	20.64	64.70	7.8	33.39	8.2	23.4	4.42
I32	06 Sep 2016	3	20.60	65.20	6.3	33.39	8.2	23.4	3.47
I32	06 Sep 2016	4	20.57	64.97	4.9	33.39	8.2	23.4	4.72
I32	06 Sep 2016	5	20.53	64.38	4.6	33.39	8.2	23.4	5.33
I32	06 Sep 2016	6	20.48	64.13	5.4	33.38	8.2	23.4	5.16
I32	06 Sep 2016	7	19.97	63.28	6.2	33.12	8.2	23.3	4.84
I32	06 Sep 2016	8	17.72	56.82	7.2	33.06	8.2	23.9	3.77
I32	06 Sep 2016	9	16.32	61.02	7.3	33.22	8.1	24.3	3.87
I32	06 Sep 2016	10	16.56	55.85	6.5	33.34	8.0	24.3	6.38
I32	14 Sep 2016	1	18.02	71.49	8.5	33.37	8.2	24.0	2.43
I32	14 Sep 2016	2	18.03	71.48	8.4	33.37	8.2	24.0	2.78
I32	14 Sep 2016	3	18.01	71.45	8.1	33.36	8.2	24.0	3.77
I32	14 Sep 2016	4	17.91	71.34	7.9	33.36	8.2	24.0	5.19
I32	14 Sep 2016	5	17.83	70.84	7.7	33.36	8.2	24.1	6.16
I32	14 Sep 2016	6	16.98	69.04	7.3	33.25	8.2	24.2	6.75
I32	14 Sep 2016	7	15.71	71.80	6.2	33.30	8.2	24.5	7.34
I32	14 Sep 2016	8	15.26	67.54	5.8	33.26	8.2	24.6	7.57
I32	14 Sep 2016	9	14.70	67.32	6.4	33.28	8.1	24.7	7.10
I32	14 Sep 2016	10	14.66	65.32	6.9	33.28	8.1	24.7	6.97
I32	19 Sep 2016	1	17.54	78.65	8.0	33.37	8.1	24.1	2.53
I32	19 Sep 2016	2	17.44	79.11	8.0	33.35	8.1	24.1	3.13
I32	19 Sep 2016	3	16.92	77.91	8.0	33.34	8.1	24.3	3.60
I32	19 Sep 2016	4	16.74	76.31	8.0	33.34	8.1	24.3	3.76
I32	19 Sep 2016	5	16.58	74.78	8.1	33.33	8.1	24.3	3.91
I32	19 Sep 2016	6	16.47	74.54	8.0	33.33	8.1	24.4	4.27
I32	19 Sep 2016	7	16.34	75.22	7.6	33.33	8.1	24.4	5.79
I32	19 Sep 2016	8	16.26	75.45	6.9	33.32	8.1	24.4	6.88
I32	19 Sep 2016	9	15.86	75.82	6.7	33.27	8.1	24.5	6.65
I32	19 Sep 2016	10	14.70	66.31	7.6	33.27	8.0	24.7	5.55
I32	25 Sep 2016	1	18.90	62.14	8.2	33.19	8.2	23.7	4.22
I32	25 Sep 2016	2	18.52	61.78	8.1	33.16	8.2	23.7	5.49
I32	25 Sep 2016	3	17.72	59.11	8.0	33.17	8.2	23.9	4.95
I32	25 Sep 2016	4	17.47	55.23	7.6	33.16	8.2	24.0	4.20
I32	25 Sep 2016	5	17.03	56.87	7.2	33.18	8.2	24.1	3.27
I32	25 Sep 2016	6	16.73	60.04	6.8	33.18	8.2	24.2	2.97
I32	25 Sep 2016	7	16.26	61.90	6.7	33.21	8.1	24.3	3.20
I32	25 Sep 2016	8	15.91	61.20	6.4	33.23	8.1	24.4	3.66
I32	25 Sep 2016	9	15.68	60.03	6.3	33.22	8.1	24.5	3.70
I32	25 Sep 2016	10	15.38	50.89	6.6	33.24	8.1	24.5	3.64
I39	01 Sep 2016	1	19.54	82.41	7.9	33.40	8.2	23.7	1.73

Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I39	01 Sep 2016	2	19.43	82.32	7.7	33.41	8.2	23.7	2.67
I39	01 Sep 2016	3	19.03	81.86	7.8	33.42	8.2	23.8	3.08
I39	01 Sep 2016	4	18.31	81.27	7.8	33.46	8.2	24.0	3.31
I39	01 Sep 2016	5	17.70	80.71	7.8	33.41	8.2	24.1	3.67
I39	01 Sep 2016	6	17.21	80.66	7.7	33.30	8.2	24.2	3.86
I39	01 Sep 2016	7	16.51	80.29	7.5	33.32	8.2	24.3	3.71
I39	01 Sep 2016	8	16.29	79.82	7.1	33.32	8.2	24.4	3.72
I39	01 Sep 2016	9	16.23	79.42	6.5	33.30	8.2	24.4	3.67
I39	01 Sep 2016	10	16.07	79.15	5.9	33.28	8.2	24.4	3.62
I39	01 Sep 2016	11	15.97	79.14	5.6	33.30	8.2	24.4	3.52
I39	01 Sep 2016	12	15.97	79.03	5.6	33.29	8.2	24.4	3.46
I39	01 Sep 2016	13	15.86	78.78	6.0	33.25	8.1	24.4	3.57
I39	01 Sep 2016	14	15.44	78.16	6.3	33.15	8.1	24.5	3.53
I39	01 Sep 2016	15	14.57	78.22	6.6	33.20	8.1	24.7	3.57
I39	01 Sep 2016	16	14.30	78.83	6.7	33.25	8.1	24.8	3.58
I39	01 Sep 2016	17	14.28	78.82	6.8	33.25	8.1	24.8	3.76
I39	01 Sep 2016	18	14.28	78.64	7.0	33.25	8.1	24.8	3.69
I39	06 Sep 2016	1	19.82	73.56	8.7	33.40	8.2	23.6	3.44
I39	06 Sep 2016	2	19.78	73.53	8.8	33.39	8.2	23.6	3.59
I39	06 Sep 2016	3	19.67	73.30	8.8	33.36	8.2	23.6	3.57
I39	06 Sep 2016	4	19.14	75.09	8.8	33.29	8.2	23.7	3.36
I39	06 Sep 2016	5	18.43	74.77	8.8	33.33	8.2	23.9	3.12
I39	06 Sep 2016	6	18.20	74.35	8.7	33.24	8.2	23.9	3.08
I39	06 Sep 2016	7	17.66	75.70	8.5	33.31	8.2	24.1	2.99
I39	06 Sep 2016	8	17.62	77.15	8.1	33.29	8.2	24.1	2.70
I39	06 Sep 2016	9	17.38	77.97	7.1	33.25	8.2	24.1	2.11
I39	06 Sep 2016	10	16.87	78.67	6.2	33.27	8.2	24.2	1.90
I39	06 Sep 2016	11	16.68	79.91	6.2	33.20	8.2	24.2	1.95
I39	06 Sep 2016	12	15.99	80.25	6.9	33.20	8.1	24.4	1.92
I39	06 Sep 2016	13	15.25	79.79	7.3	33.21	8.1	24.5	1.91
I39	06 Sep 2016	14	15.00	79.04	7.3	33.22	8.1	24.6	1.86
I39	06 Sep 2016	15	14.78	79.85	7.3	33.25	8.1	24.7	1.89
I39	06 Sep 2016	16	14.84	80.06	7.3	33.23	8.1	24.6	1.89
I39	06 Sep 2016	17	14.72	80.12	7.3	33.24	8.1	24.7	1.83
I39	06 Sep 2016	18	14.70	80.26	7.3	33.24	8.1	24.7	1.83
I39	14 Sep 2016	1	18.45	83.19	8.5	33.41	8.2	23.9	1.02
I39	14 Sep 2016	2	18.42	83.15	8.5	33.41	8.2	23.9	1.16
I39	14 Sep 2016	3	18.37	82.91	8.5	33.40	8.2	24.0	1.41
I39	14 Sep 2016	4	18.34	82.65	8.5	33.40	8.2	24.0	1.62
I39	14 Sep 2016	5	18.28	82.18	8.5	33.40	8.2	24.0	1.90
I39	14 Sep 2016	6	18.23	82.26	8.5	33.40	8.2	24.0	2.10
I39	14 Sep 2016	7	18.20	82.35	8.5	33.40	8.2	24.0	2.43
I39	14 Sep 2016	8	18.18	82.21	8.5	33.40	8.2	24.0	3.09
I39	14 Sep 2016	9	18.17	82.17	8.5	33.39	8.2	24.0	4.18
I39	14 Sep 2016	10	18.14	81.88	8.6	33.39	8.2	24.0	5.00
I39	14 Sep 2016	11	17.98	80.95	8.6	33.37	8.2	24.0	5.46
I39	14 Sep 2016	12	17.52	79.21	8.6	33.35	8.2	24.1	5.77
I39	14 Sep 2016	13	17.23	78.11	8.4	33.34	8.2	24.2	5.84
I39	14 Sep 2016	14	16.72	77.45	7.9	33.30	8.2	24.3	5.75
I39	14 Sep 2016	15	16.22	76.98	7.1	33.30	8.2	24.4	5.71
I39	14 Sep 2016	16	15.13	76.28	7.0	33.23	8.2	24.6	5.63
I39	14 Sep 2016	17	14.57	76.44	7.3	33.27	8.1	24.7	5.62
I39	14 Sep 2016	18	14.56	76.49	7.6	33.27	8.1	24.7	5.58



Station	Date	Depth (m)	Temp (°C)	XMS (‰)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
I39	19 Sep 2016	1	17.36	79.36	7.9	33.38	8.1	24.2	2.34
I39	19 Sep 2016	2	17.35	79.25	7.8	33.38	8.1	24.2	2.99
I39	19 Sep 2016	3	17.09	78.95	7.8	33.36	8.1	24.2	3.83
I39	19 Sep 2016	4	16.66	77.94	7.8	33.35	8.1	24.3	3.91
I39	19 Sep 2016	5	16.16	76.82	7.9	33.33	8.1	24.4	3.69
I39	19 Sep 2016	6	15.88	76.80	7.9	33.31	8.1	24.5	3.45
I39	19 Sep 2016	7	15.24	79.70	7.9	33.28	8.1	24.6	2.94
I39	19 Sep 2016	8	14.92	81.75	7.8	33.26	8.1	24.6	2.88
I39	19 Sep 2016	9	14.48	83.57	8.0	33.25	8.1	24.7	2.90
I39	19 Sep 2016	10	14.39	84.12	8.0	33.25	8.1	24.8	2.95
I39	19 Sep 2016	11	14.31	84.25	7.9	33.25	8.1	24.8	2.96
I39	19 Sep 2016	12	14.31	84.28	7.6	33.25	8.1	24.8	3.09
I39	19 Sep 2016	13	14.21	84.32	7.0	33.25	8.1	24.8	3.26
I39	19 Sep 2016	14	13.88	83.89	6.4	33.26	8.0	24.9	2.79
I39	19 Sep 2016	15	13.73	82.45	6.1	33.27	8.0	24.9	2.40
I39	19 Sep 2016	16	13.54	81.77	6.3	33.29	8.0	25.0	2.17
I39	19 Sep 2016	17	13.53	82.10	6.4	33.29	8.0	25.0	2.07
I39	19 Sep 2016	18	13.52	82.21	6.4	33.29	8.0	25.0	2.09
I39	25 Sep 2016	1	18.09	74.39	8.8	33.22	8.2	23.9	1.43
I39	25 Sep 2016	2	18.01	74.98	8.9	33.21	8.2	23.9	1.68
I39	25 Sep 2016	3	17.59	76.57	9.0	33.22	8.2	24.0	2.39
I39	25 Sep 2016	4	17.41	77.20	8.9	33.23	8.2	24.1	2.75
I39	25 Sep 2016	5	17.26	77.47	8.9	33.22	8.2	24.1	3.17
I39	25 Sep 2016	6	16.99	76.01	8.9	33.22	8.2	24.2	3.47
I39	25 Sep 2016	7	16.78	75.38	8.8	33.23	8.2	24.2	3.58
I39	25 Sep 2016	8	16.66	75.58	8.8	33.23	8.2	24.2	3.66
I39	25 Sep 2016	9	16.51	75.34	8.8	33.24	8.2	24.3	3.80
I39	25 Sep 2016	10	16.42	74.84	8.8	33.24	8.2	24.3	4.08
I39	25 Sep 2016	11	16.34	74.43	8.7	33.24	8.2	24.3	4.43
I39	25 Sep 2016	12	16.29	74.57	8.6	33.24	8.2	24.3	4.59
I39	25 Sep 2016	13	16.24	74.50	8.4	33.24	8.2	24.3	4.04
I39	25 Sep 2016	14	16.11	74.69	8.1	33.24	8.2	24.4	3.53
I39	25 Sep 2016	15	15.91	75.39	7.9	33.23	8.2	24.4	3.25
I39	25 Sep 2016	16	15.32	75.96	8.0	33.25	8.2	24.6	3.15
I39	25 Sep 2016	17	15.21	75.44	8.1	33.26	8.1	24.6	3.25
I39	25 Sep 2016	18	15.19	73.51	8.1	33.26	8.1	24.6	3.28
I40	01 Sep 2016	1	20.43	78.31	7.6	33.41	8.2	23.4	3.16
I40	01 Sep 2016	2	20.41	78.68	6.9	33.40	8.2	23.4	4.13
I40	01 Sep 2016	3	20.29	78.90	6.3	33.35	8.2	23.4	4.31
I40	01 Sep 2016	4	19.82	75.71	5.8	33.35	8.2	23.6	4.23
I40	01 Sep 2016	5	19.49	73.36	5.5	33.30	8.2	23.6	4.15
I40	01 Sep 2016	6	18.48	70.11	5.8	33.21	8.2	23.8	4.06
I40	01 Sep 2016	7	18.16	67.76	6.2	33.18	8.1	23.8	4.00
I40	01 Sep 2016	8	15.96	64.69	6.8	33.05	8.1	24.3	4.07
I40	01 Sep 2016	9	14.97	54.18	6.7	33.23	8.1	24.6	4.06
I40	01 Sep 2016	10	15.07	45.57	6.5	33.28	8.1	24.6	3.51
I40	06 Sep 2016	1	20.25	69.35	7.8	33.28	8.2	23.4	2.47
I40	06 Sep 2016	2	20.25	70.66	7.6	33.40	8.2	23.5	3.44
I40	06 Sep 2016	3	20.20	70.53	7.8	33.39	8.2	23.5	3.90
I40	06 Sep 2016	4	19.71	68.56	8.0	33.31	8.2	23.6	3.69
I40	06 Sep 2016	5	18.41	69.41	8.1	33.34	8.2	23.9	3.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ( $\sigma$ -t)	Chlor ( $\mu$ g/L)
140	06 Sep 2016	6	17.79	71.02	7.8	33.16	8.1	23.9	2.79
140	06 Sep 2016	7	16.77	73.91	7.5	33.28	8.1	24.2	2.62
140	06 Sep 2016	8	16.86	75.19	7.6	33.25	8.1	24.2	2.76
140	06 Sep 2016	9	15.92	74.51	7.9	33.23	8.1	24.4	2.96
140	06 Sep 2016	10	15.70	73.06	8.1	33.25	8.1	24.5	3.02
140	14 Sep 2016	1	17.99	76.05	8.1	33.37	8.2	24.0	2.31
140	14 Sep 2016	2	17.86	75.70	7.6	33.34	8.2	24.0	3.83
140	14 Sep 2016	3	16.75	71.96	7.0	33.28	8.2	24.3	5.80
140	14 Sep 2016	4	15.54	65.73	7.0	33.28	8.2	24.5	8.18
140	14 Sep 2016	5	15.18	64.99	6.8	33.27	8.1	24.6	9.15
140	14 Sep 2016	6	14.76	65.08	6.4	33.26	8.1	24.7	9.21
140	14 Sep 2016	7	14.61	63.23	6.2	33.27	8.1	24.7	9.06
140	14 Sep 2016	8	14.53	61.51	6.3	33.27	8.1	24.7	9.00
140	14 Sep 2016	9	14.50	61.45	6.5	33.27	8.1	24.7	8.83
140	14 Sep 2016	10	14.51	61.82	6.5	33.27	8.1	24.7	8.46
140	19 Sep 2016	1	17.16	77.67	7.3	33.36	8.1	24.2	4.11
140	19 Sep 2016	2	16.72	76.92	6.9	33.31	8.1	24.3	5.97
140	19 Sep 2016	3	15.95	72.43	6.6	33.31	8.1	24.5	6.90
140	19 Sep 2016	4	15.47	63.85	6.7	33.27	8.0	24.5	6.65
140	19 Sep 2016	5	15.10	57.66	7.1	33.29	8.0	24.6	7.91
140	19 Sep 2016	6	14.95	57.89	7.3	33.28	8.0	24.7	10.83
140	19 Sep 2016	7	14.68	64.46	6.8	33.28	8.0	24.7	12.12
140	19 Sep 2016	8	14.56	65.75	6.0	33.28	8.0	24.7	10.69
140	19 Sep 2016	9	14.41	60.10	5.8	33.28	8.0	24.8	10.10
140	19 Sep 2016	10	14.32	54.18	5.9	33.28	8.0	24.8	10.07
140	25 Sep 2016	1	17.83	60.98	8.0	33.21	8.1	23.9	2.79
140	25 Sep 2016	2	17.50	59.56	8.1	33.20	8.2	24.0	3.46
140	25 Sep 2016	3	16.80	56.40	8.1	33.23	8.2	24.2	3.84
140	25 Sep 2016	4	16.56	53.71	8.0	33.24	8.2	24.3	4.25
140	25 Sep 2016	5	16.46	53.93	7.8	33.24	8.2	24.3	3.74
140	25 Sep 2016	6	16.19	55.03	7.8	33.22	8.2	24.3	3.16
140	25 Sep 2016	7	15.64	57.06	7.7	33.25	8.2	24.5	3.02
140	25 Sep 2016	8	15.36	61.12	7.8	33.26	8.1	24.6	3.06
140	25 Sep 2016	9	15.32	48.94	8.0	33.26	8.1	24.6	3.22
140	25 Sep 2016	10	15.34	39.95	8.1	33.26	8.1	24.6	3.04

NA = not available

APPENDIX A

Quality Assurance



**Table A.1**

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
I19	01 Sep 2016	6	AR	LAB DUPLICATE	<20	<2	2e
I19	06 Sep 2016	6	SR	LAB DUPLICATE	ns	ns	<2
I19	06 Sep 2016	6	ZV	LAB DUPLICATE	<2	<2	ns
I19	14 Sep 2016	6	AR	LAB DUPLICATE	<2	<2	<2
I19	19 Sep 2016	6	JT	LAB DUPLICATE	<2	<2	<2
I19	25 Sep 2016	6	ZV	LAB DUPLICATE	12e	<2	2e
I40	01 Sep 2016	6	AR	LAB DUPLICATE	<20	<2	<2
I40	06 Sep 2016	6	SR	LAB DUPLICATE	ns	ns	<2
I40	06 Sep 2016	6	ZV	LAB DUPLICATE	2e	<2	ns
I40	14 Sep 2016	6	JT	LAB DUPLICATE	<2	<2	<2
I40	19 Sep 2016	6	JT	LAB DUPLICATE	<2	<2	<2
I40	25 Sep 2016	6	ZV	LAB DUPLICATE	10e	2e	2e
S12	06 Sep 2016		LMA	FIELD DUPLICATE	<20	<2	2e
S12	06 Sep 2016		LMA	LAB DUPLICATE	<2	<2	2e
S12	13 Sep 2016		JT	FIELD DUPLICATE	8e	<2	2e
S12	13 Sep 2016		JT	LAB DUPLICATE	4e	<2	<2
S12	20 Sep 2016		JT	FIELD DUPLICATE	18e	4e	4e
S12	20 Sep 2016		JT	LAB DUPLICATE	16e	<20	2e
S12	27 Sep 2016		AR	FIELD DUPLICATE	40e	12e	<2
S12	27 Sep 2016		AR	LAB DUPLICATE	40e	<2	<2

ns = not sampled

ND = no data

