



SOUTH BAY OCEAN OUTFALL MONTHLY RECEIVING WATERS MONITORING REPORT

SOUTH BAY WATER RECLAMATION PLANT

NPDES Permit No. CA0109045
SDRWQCB Order No. R9-2013-0006

MARCH 2018

Environmental Monitoring and Technical Services
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Public Utilities Department

Environmental Monitoring & Technical Services Division

April 30, 2018

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

Attention: POTW Compliance Unit

Dear Mr. Gibson:

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

This report includes raw ocean monitoring data and summaries of water quality parameters and ocean conditions measured during the month for the South Bay outfall region. Also included are summaries of compliance with the bacterial water-contact standards specified in the California Ocean Plan. These data are also presented in the monthly report submitted by the International Boundary and Water Commission, U.S. Section for discharge from the South Bay International Wastewater Treatment Plant (Order No. R9-2014-0009 as amended Order Nos. R9-2014-0094 and R9-2017-0024, NPDES Permit No. CA0108928).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Peter S. Vroom, Ph.D.
Deputy Director, Public Utilities Department

TS/rjg

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

INTRODUCTION

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

MATERIALS AND METHODS

Shore Stations

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

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

Kelp Bed Stations

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

Routine monitoring at each kelp site consisted 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 were also recorded at all stations.

Seawater samples at the kelp bed stations were collected using a CTD-integrated rosette sampler with Niskin bottles. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at the City's Marine Microbiology Laboratory. Water column profiles of the various physical/chemical parameters were taken using a CTD. The CTD collected these physical/chemical data at a rate ≥ 4 scans per second. The data were then internally averaged using the CTD proprietary software, Seasoft, to create water column profiles equivalent to one reading per meter. Additionally, CTD profile data for each water sample depth are presented with

the bacteriological data.

Offshore Stations

Quarterly offshore water quality sampling is typically conducted over three days during February, May, August, and November at 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 days of kelp bed water quality sampling. Monitoring at all sites included measurements of various physical/chemical parameters, including water temperature, salinity, density, dissolved oxygen, pH, chlorophyll *a*, transmissivity, and chromomorphic dissolved organic matter (CDOM). Visual observations of weather and water conditions were also recorded at all stations. Seawater samples for the analysis of indicator bacteria were collected at 28 of the stations.

At these offshore stations, water samples for bacteriological analyses were collected using a CTD-integrated 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 presented with the bacteriological data.

Bacteriological Reporting and Quality Assurance

Estimated values for bacteriological analyses are denoted by greater than (>), less than (<), or estimated (e) qualifiers and result from plates with colony counts above or below the permissible counting limits established in Bordner et al. (1978)^[1]. This document defines membrane filtration limits of 20–80 colonies per plate for total coliforms and 20–60 colonies per plate for fecal coliforms and *Enterococcus*. No Data (ND) is reported if plate counts from all dilutions have a total colony count of >200 per plate.

Results of the bacteriological analysis of seawater samples collected from each of the shore, kelp bed, and offshore stations located within State waters are assessed relative to the 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.

Single Sample Maximums:

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

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

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

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

SUMMARY OF RESULTS

➤ Shoreline Water Quality Sampling

- Because of site access restrictions in Mexico, the South Bay shoreline sampling is carried out on the same day each week (i.e., Tuesday) in order to coordinate sampling between the Mexican and USA based stations. Seawater samples at the three shore stations located south of the USA/Mexico border (i.e., stations S0, S2 and S3) are presently collected by the Comisión Internacional de Límites y Aguas (CILA) and transported to the IBWC for subsequent delivery to the City's Marine Microbiology Lab, while samples from the eight stations located in USA waters are sampled by City staff.
- During March, one of the eight shore stations located north of the border was out of compliance with various California Ocean Plan (Ocean Plan) water contact standards (see below); these standards do not apply to stations located in Mexican waters.
 - The 30-day geometric mean standard for total coliform bacteria was exceeded at station S5 on March 13.
 - The 30-day geometric mean standard for *Enterococcus* was exceeded at station S5 on March 13.
 - The single sample maximum (SSM) standards for total coliform, fecal coliform and *Enterococcus* bacteria were exceeded at station S5 on March 13.

- The SSM standard that states total coliform densities shall not exceed 1000 CFU/100 mL when the fecal:total ratio exceeds 0.1 was exceeded at station S5 on March 13.
 - Per permit requirements, a resample was collected in response to this SSM exceedance (see Table 2.8 for details).
- Although the Ocean Plan standards do not apply to this station, bacteria densities exceeded one or more benchmark levels (i.e., total coliforms >10,000 CFU/100mL; fecal coliforms >400 CFU/100 mL; *Enterococcus* >104 CFU/100 mL; total >1000 CFU/100 mL & F:T ratio >0.1) in seawater samples collected at station S0 on one or more days during the month.
- Historical analyses of Ocean Plan compliance rates for the South Bay outfall shore and kelp monitoring stations, combined with the results of satellite imagery data, suggest that outflows from the Tijuana River and Los Buenos Creek, as well as surface runoff during or after rain events (storms), are likely to be the cause of impacted water quality along the shore and in near shore recreational waters in the South Bay region. See the City of San Diego's most recent *South Bay Ocean Outfall Annual Receiving Waters Monitoring and Assessment Report* for details (<http://www.sandiego.gov/mwwd/environment/oceanmonitor/reports/index.shtml>).
- Nothing of sewage origin was observed at any of the shore stations.

➤ **Kelp Bed Water Quality Sampling**

- The seven kelp bed water quality stations (I19, I24, I25, I26, I32, I39, I40) were sampled four times during the month (i.e. March 5, 12, 19, 26).
- During March, one of the seven stations was out of compliance with various Ocean Plan water contact standards (see below).
 - The SSM standards for total and fecal coliform bacteria were exceeded at station I40 on March 12 at the 2 m depth.
- Water column temperatures ranged from 11.41 to 15.77°C. The difference between surface and bottom waters ranged from 0.63 to 3.00°C, indicating the water column was stratified at some of these sites during the month.
- Chlorophyll *a* concentrations ranged from 0.62 to 12.05 µg/L at the kelp bed 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 January at the offshore stations. The next quarterly sampling is scheduled for May 2018.



TABLES AND FIGURES

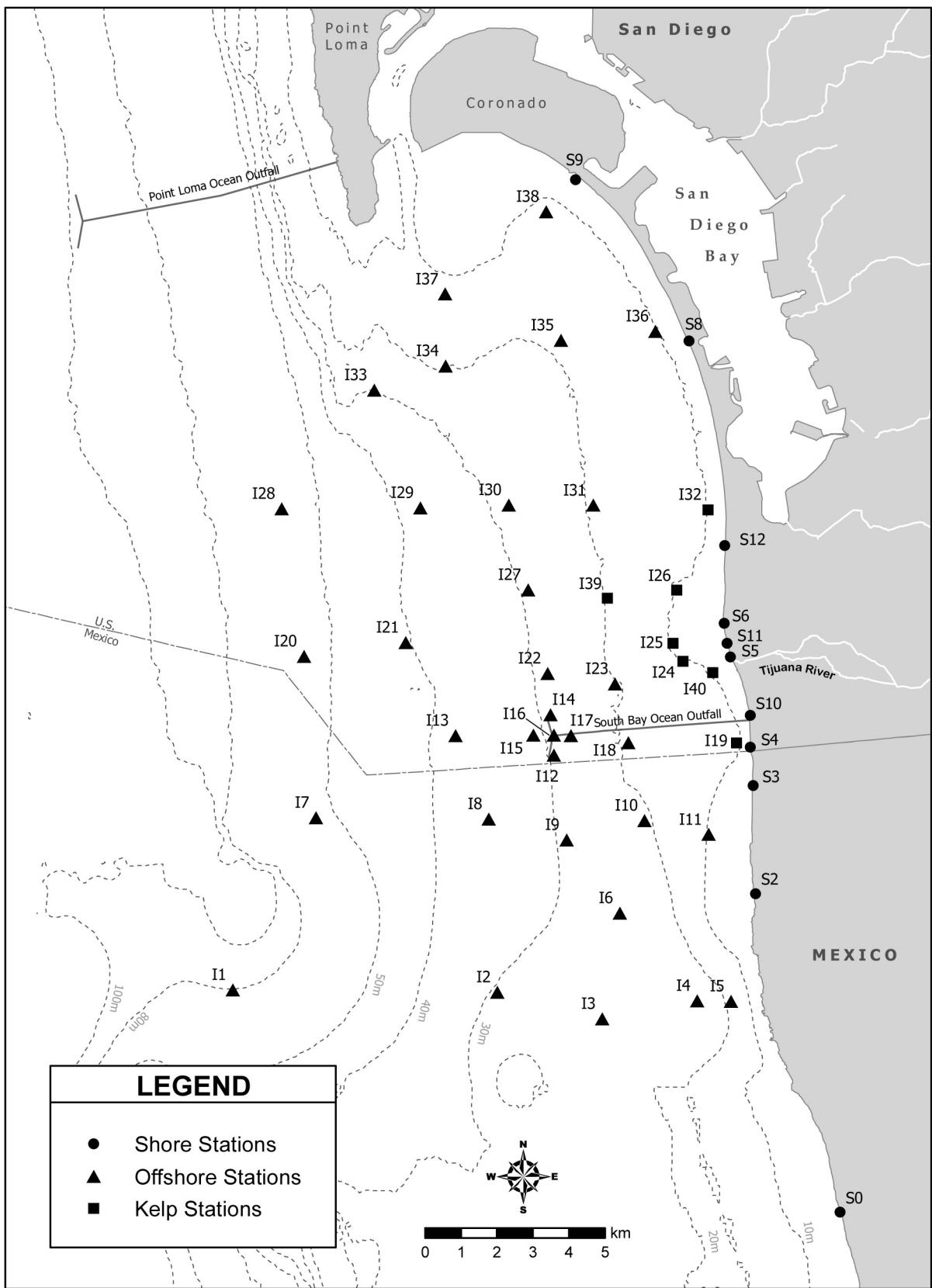


Figure 1.1 Station Map

Shore Stations

Table 2.1

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Mar 2018	6*	18*	6*	4*	4*	8*	10*	6*
02 Mar 2018	6*	18*	6*	4*	4*	8*	10*	6*
03 Mar 2018	6*	18*	6*	4*	4*	8*	10*	6*
04 Mar 2018	6*	18*	6*	4*	4*	8*	10*	6*
05 Mar 2018	6*	18*	6*	4*	4*	8*	10*	6*
06 Mar 2018	16	44	5	3	3	26	27	5
07 Mar 2018	16	44	5	3	3	26	27	5
08 Mar 2018	26*	44*	6*	4*	4*	48*	39*	6*
09 Mar 2018	26*	44*	6*	4*	4*	48*	39*	6*
10 Mar 2018	26*	44*	6*	4*	4*	48*	39*	6*
11 Mar 2018	26*	44*	6*	4*	4*	48*	39*	6*
12 Mar 2018	26*	44*	6*	4*	4*	48*	39*	6*
13 Mar 2018	76	144	10	3	5	114	82	7
14 Mar 2018	76	144	10	3	5	114	82	7
15 Mar 2018	116*	517	8*	4*	6*	264*	117*	6*
16 Mar 2018	116*	517	8*	4*	6*	264*	117*	6*
17 Mar 2018	116*	517	8*	4*	6*	264*	117*	6*
18 Mar 2018	116*	517	8*	4*	6*	264*	117*	6*
19 Mar 2018	116*	517	8*	4*	6*	264*	117*	6*
20 Mar 2018	112	610	6	3	5	245	245	5
21 Mar 2018	112	610	6	3	5	245	245	5
22 Mar 2018	308*	1209	8*	4*	6*	814*	684*	6*
23 Mar 2018	308*	1209	8*	4*	6*	814*	684*	6*
24 Mar 2018	308*	1209	8*	4*	6*	814*	684*	6*
25 Mar 2018	308*	1209	8*	4*	6*	814*	684*	6*
26 Mar 2018	308*	1209	8*	4*	6*	814*	684*	6*
27 Mar 2018	166	1050	6	3	5	388	281	5
28 Mar 2018	166	1050	6	3	5	388	281	5
29 Mar 2018	281*	2319	5*	2*	4*	428*	544*	4*
30 Mar 2018	281*	2319	5*	2*	4*	428*	544*	4*
31 Mar 2018	281*	2319	5*	2*	4*	428*	544*	4*

* 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 Mar 2018	3*	2*	2*	2*	2*	3*	2*	2*
02 Mar 2018	3*	2*	2*	2*	2*	3*	2*	2*
03 Mar 2018	3*	2*	2*	2*	2*	3*	2*	2*
04 Mar 2018	3*	2*	2*	2*	2*	3*	2*	2*
05 Mar 2018	3*	2*	2*	2*	2*	3*	2*	2*
06 Mar 2018	5	4	2	2	2	6	4	2
07 Mar 2018	5	4	2	2	2	6	4	2
08 Mar 2018	6*	4*	2*	2*	2*	8*	5*	2*
09 Mar 2018	6*	4*	2*	2*	2*	8*	5*	2*
10 Mar 2018	6*	4*	2*	2*	2*	8*	5*	2*
11 Mar 2018	6*	4*	2*	2*	2*	8*	5*	2*
12 Mar 2018	6*	4*	2*	2*	2*	8*	5*	2*
13 Mar 2018	13	21	3	2	2	17	9	2
14 Mar 2018	13	21	3	2	2	17	9	2
15 Mar 2018	20*	42	2*	2*	2*	28*	14*	2*
16 Mar 2018	20*	42	2*	2*	2*	28*	14*	2*
17 Mar 2018	20*	42	2*	2*	2*	28*	14*	2*
18 Mar 2018	20*	42	2*	2*	2*	28*	14*	2*
19 Mar 2018	20*	42	2*	2*	2*	28*	14*	2*
20 Mar 2018	13	48	2	2	2	24	19	2
21 Mar 2018	13	48	2	2	2	24	19	2
22 Mar 2018	20*	91	2*	2*	2*	44*	34*	2*
23 Mar 2018	20*	91	2*	2*	2*	44*	34*	2*
24 Mar 2018	20*	91	2*	2*	2*	44*	34*	2*
25 Mar 2018	20*	91	2*	2*	2*	44*	34*	2*
26 Mar 2018	20*	91	2*	2*	2*	44*	34*	2*
27 Mar 2018	13	58	2	2	2	24	24	2
28 Mar 2018	13	58	2	2	2	24	24	2
29 Mar 2018	15*	114	2*	2*	2*	28*	38*	2*
30 Mar 2018	15*	114	2*	2*	2*	28*	38*	2*
31 Mar 2018	15*	114	2*	2*	2*	28*	38*	2*

* Geometric mean calculated using n<5

Table 2.3

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
01 Mar 2018	5*	6*	5*	3*	3*	5*	3*	4*
02 Mar 2018	5*	6*	5*	3*	3*	5*	3*	4*
03 Mar 2018	5*	6*	5*	3*	3*	5*	3*	4*
04 Mar 2018	5*	6*	5*	3*	3*	5*	3*	4*
05 Mar 2018	5*	6*	5*	3*	3*	5*	3*	4*
06 Mar 2018	6	8	4	3	3	7	3	4
07 Mar 2018	6	8	4	3	3	7	3	4
08 Mar 2018	8*	7*	5*	3*	3*	10*	3*	4*
09 Mar 2018	8*	7*	5*	3*	3*	10*	3*	4*
10 Mar 2018	8*	7*	5*	3*	3*	10*	3*	4*
11 Mar 2018	8*	7*	5*	3*	3*	10*	3*	4*
12 Mar 2018	8*	7*	5*	3*	3*	10*	3*	4*
13 Mar 2018	8	30	4	3	3	7	3	4
14 Mar 2018	8	30	4	3	3	7	3	4
15 Mar 2018	7*	48	3*	3*	3*	10*	3*	3*
16 Mar 2018	7*	48	3*	3*	3*	10*	3*	3*
17 Mar 2018	7*	48	3*	3*	3*	10*	3*	3*
18 Mar 2018	7*	48	3*	3*	3*	10*	3*	3*
19 Mar 2018	7*	48	3*	3*	3*	10*	3*	3*
20 Mar 2018	5	32	2	3	3	7	4	3
21 Mar 2018	5	32	2	3	3	7	4	3
22 Mar 2018	7*	55	3*	3*	3*	10*	5*	3*
23 Mar 2018	7*	55	3*	3*	3*	10*	5*	3*
24 Mar 2018	7*	55	3*	3*	3*	10*	5*	3*
25 Mar 2018	7*	55	3*	3*	3*	10*	5*	3*
26 Mar 2018	7*	55	3*	3*	3*	10*	5*	3*
27 Mar 2018	5	36	2	3	3	7	4	3
28 Mar 2018	5	36	2	3	3	7	4	3
29 Mar 2018	4*	46	2*	2*	2*	4*	4*	2*
30 Mar 2018	4*	46	2*	2*	2*	4*	4*	2*
31 Mar 2018	4*	46	2*	2*	2*	4*	4*	2*

* Geometric mean calculated using n<5

Table 2.4

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
06 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
13 Mar 2018	IC	E	IC	IC	IC	IC	IC	IC
15 Mar 2018	ns	IC	ns	ns	ns	ns	ns	ns
20 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
27 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.5

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
06 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
13 Mar 2018	IC	E	IC	IC	IC	IC	IC	IC
15 Mar 2018	ns	IC	ns	ns	ns	ns	ns	ns
20 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
27 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.6

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
06 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
13 Mar 2018	IC	E	IC	IC	IC	IC	IC	IC
15 Mar 2018	ns	IC	ns	ns	ns	ns	ns	ns
20 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
27 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.7

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

Date	S4	S5	S6	S8	S9	S10	S11	S12
06 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
13 Mar 2018	IC	E	IC	IC	IC	IC	IC	IC
15 Mar 2018	ns	IC	ns	ns	ns	ns	ns	ns
20 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC
27 Mar 2018	IC	IC	IC	IC	IC	IC	IC	IC

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 2.8

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

Station	Date	Time	Total	Fecal	Enter	F:T
S0	06 Mar 2018	1005	24e	2e	12e	0.08
S0	13 Mar 2018	1039	6e	<2	6e	0.33
S0	20 Mar 2018	1223	>16000	3400e	1400e	0.21
S0	27 Mar 2018	1118	4400	46	440	0.01
S2	06 Mar 2018	1105	2e	<2	30e	1.00
S2	13 Mar 2018	1122	38e	<2	<2	0.05
S2	20 Mar 2018	1110	12e	<2	14e	0.17
S2	27 Mar 2018	1220	6e	<2	<2	0.33
S3	06 Mar 2018	1145	<2	<2	<2	1.00
S3	13 Mar 2018	1158	720	8e	2e	0.01
S3	20 Mar 2018	955	150	4e	<2	0.03
S3	27 Mar 2018	1255	30e	8e	8e	0.27
S4	06 Mar 2018	852	860	50	12e	0.06
S4	13 Mar 2018	852	5200	280e	6e	0.05
S4	20 Mar 2018	843	100e	<2	2e	0.02
S4	27 Mar 2018	835	14e	<2	2e	0.14
S5	06 Mar 2018	954	1600	44	16e	0.03
S5	13 Mar 2018	1003	>16000	>12000	12000	0.75
S5	15 Mar 2018	902	3600e	60e	66	0.02
S5	20 Mar 2018	948	1400e	100e	4e	0.07
S5	27 Mar 2018	1003	520	6e	4e	0.01
S6	06 Mar 2018	1005	2e	<2	<2	1.00
S6	13 Mar 2018	1013	60e	4e	<2	0.07
S6	20 Mar 2018	940	<2	<2	<2	1.00
S6	27 Mar 2018	1013	2e	2e	2e	1.00
S8	06 Mar 2018	1125	<2	<2	2e	1.00
S8	13 Mar 2018	1155	<2	<2	<2	1.00
S8	20 Mar 2018	1019	<2	<2	<2	1.00
S8	27 Mar 2018	1133	<2	<2	<2	1.00
S9	06 Mar 2018	1225	<2	<2	<2	1.00
S9	13 Mar 2018	1233	<20	<2	<2	0.10
S9	20 Mar 2018	1041	<2	<2	<2	1.00
S9	27 Mar 2018	1232	<2	<2	<2	1.00
S10	06 Mar 2018	845	2600e	80	44	0.03
S10	13 Mar 2018	848	3600e	320e	2e	0.09
S10	20 Mar 2018	840	180e	12e	2e	0.07
S10	27 Mar 2018	830	<20	2e	2e	0.10
S11	06 Mar 2018	959	1400e	38e	<2	0.03
S11	13 Mar 2018	1009	1700e	110	2e	0.06
S11	20 Mar 2018	944	4600	80e	20e	0.02

Station	Date	Time	Total	Fecal	Enteric	F:T
S11	27 Mar 2018	1010	8e	6e	<2	0.75
S12	06 Mar 2018	1015	<2	<2	<2	1.00
S12	13 Mar 2018	1021	20e	<2	<2	0.10
S12	20 Mar 2018	932	2e	<2	2e	1.00
S12	27 Mar 2018	1023	2e	<2	4e	1.00

ns = not sampled

ND = no data

Comments

Station	Date	Depth	Parameter	Comments
S5	15 Mar 2018			Resample

Table 2.9

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

Station	Date	Parameter	Value
S0	06 Mar 2018	Arrive Time	1005
S0	06 Mar 2018	Weather	Sunny
S0	06 Mar 2018	Wind Speed (kts)	1.1
S0	06 Mar 2018	Wind Dir	SW
S0	06 Mar 2018	Animal Life	5 Birds; 5 Dogs
S0	06 Mar 2018	Floatables	None
S0	06 Mar 2018	Water Color	Green
S0	06 Mar 2018	Current Direction	S
S0	06 Mar 2018	Water Temp (C)	20
S0	06 Mar 2018	Wave Height Low (ft)	2
S0	06 Mar 2018	High Tide (ft)	3.5
S0	06 Mar 2018	High Tide Time	0
S0	06 Mar 2018	Low Tide (ft)	0.8
S0	06 Mar 2018	Low Tide Time	609
S0	06 Mar 2018	Comments	Water clear; 1.5L/sec water flowing from stormdrain
S0	13 Mar 2018	Arrive Time	1039
S0	13 Mar 2018	Weather	Cloudy
S0	13 Mar 2018	Wind Speed (kts)	5.2
S0	13 Mar 2018	Wind Dir	N
S0	13 Mar 2018	Animal Life	7 Shorebirds
S0	13 Mar 2018	Floatables	None
S0	13 Mar 2018	Water Color	Green
S0	13 Mar 2018	Current Direction	S
S0	13 Mar 2018	Water Temp (C)	14
S0	13 Mar 2018	Wave Height Low (ft)	2
S0	13 Mar 2018	High Tide (ft)	4.8
S0	13 Mar 2018	High Tide Time	725
S0	13 Mar 2018	Low Tide (ft)	-0.3
S0	13 Mar 2018	Low Tide Time	1424
S0	13 Mar 2018	Comments	Seagrass; Algae; 2 Persons; Water clear; 0.5L/sec water flowing from stromdrain
S0	20 Mar 2018	Arrive Time	1223
S0	20 Mar 2018	Weather	Cloudy
S0	20 Mar 2018	Wind Speed (kts)	4.6
S0	20 Mar 2018	Wind Dir	NW
S0	20 Mar 2018	Animal Life	None
S0	20 Mar 2018	Floatables	None
S0	20 Mar 2018	Water Color	Green
S0	20 Mar 2018	Current Direction	
S0	20 Mar 2018	Water Temp (C)	15
S0	20 Mar 2018	Wave Height Low (ft)	2
S0	20 Mar 2018	High Tide (ft)	4.2
S0	20 Mar 2018	High Tide Time	1138
S0	20 Mar 2018	Low Tide (ft)	0.7
S0	20 Mar 2018	Low Tide Time	1735
S0	20 Mar 2018	Comments	0.5L/sec water flowing from stormdrain; Water clarity and current not recorded
S0	27 Mar 2018	Arrive Time	1118

Station	Date	Parameter	Value
S0	27 Mar 2018	Weather	Sunny
S0	27 Mar 2018	Wind Speed (kts)	3.2
S0	27 Mar 2018	Wind Dir	NE
S0	27 Mar 2018	Animal Life	2 Birds
S0	27 Mar 2018	Floatables	None
S0	27 Mar 2018	Water Color	Green
S0	27 Mar 2018	Current Direction	N
S0	27 Mar 2018	Water Temp (C)	21
S0	27 Mar 2018	Wave Height Low (ft)	2
S0	27 Mar 2018	High Tide (ft)	5.2
S0	27 Mar 2018	High Tide Time	638
S0	27 Mar 2018	Low Tide (ft)	1.7
S0	27 Mar 2018	Low Tide Time	1246
S0	27 Mar 2018	Comments	6 Persons; Water clear; 2L /sec water flowing from stormdrain
S2	06 Mar 2018	Arrive Time	1105
S2	06 Mar 2018	Weather	Sunny
S2	06 Mar 2018	Wind Speed (kts)	0.7
S2	06 Mar 2018	Wind Dir	SW
S2	06 Mar 2018	Animal Life	15 Birds; 5 Dogs
S2	06 Mar 2018	Floatables	None
S2	06 Mar 2018	Water Color	Green
S2	06 Mar 2018	Current Direction	S
S2	06 Mar 2018	Water Temp (C)	20
S2	06 Mar 2018	Wave Height Low (ft)	2
S2	06 Mar 2018	High Tide (ft)	3.5
S2	06 Mar 2018	High Tide Time	0
S2	06 Mar 2018	Low Tide (ft)	0.8
S2	06 Mar 2018	Low Tide Time	609
S2	06 Mar 2018	Comments	Water clear; No flow from stormdrain
S2	13 Mar 2018	Arrive Time	1122
S2	13 Mar 2018	Weather	Cloudy
S2	13 Mar 2018	Wind Speed (kts)	7.2
S2	13 Mar 2018	Wind Dir	N
S2	13 Mar 2018	Animal Life	>20 Shorebirds
S2	13 Mar 2018	Floatables	None
S2	13 Mar 2018	Water Color	Green
S2	13 Mar 2018	Current Direction	S
S2	13 Mar 2018	Water Temp (C)	14
S2	13 Mar 2018	Wave Height Low (ft)	2
S2	13 Mar 2018	High Tide (ft)	4.8
S2	13 Mar 2018	High Tide Time	725
S2	13 Mar 2018	Low Tide (ft)	-0.3
S2	13 Mar 2018	Low Tide Time	1424
S2	13 Mar 2018	Comments	Seagrass; Algae; 10 Persons; Water clear; No flow from stormdrain
S2	20 Mar 2018	Arrive Time	1110
S2	20 Mar 2018	Weather	Sunny
S2	20 Mar 2018	Wind Speed (kts)	1.3
S2	20 Mar 2018	Wind Dir	NW
S2	20 Mar 2018	Animal Life	5 Shorebirds; 5 Dogs
S2	20 Mar 2018	Floatables	None
S2	20 Mar 2018	Water Color	Green
S2	20 Mar 2018	Current Direction	

Station	Date	Parameter	Value
S2	20 Mar 2018	Water Temp (C)	15
S2	20 Mar 2018	Wave Height Low (ft)	1
S2	20 Mar 2018	High Tide (ft)	4.2
S2	20 Mar 2018	High Tide Time	1138
S2	20 Mar 2018	Low Tide (ft)	0.2
S2	20 Mar 2018	Low Tide Time	541
S2	20 Mar 2018	Comments	No flow from stormdrain; Water clarity and current was not recorded
S2	27 Mar 2018	Arrive Time	1220
S2	27 Mar 2018	Weather	Sunny
S2	27 Mar 2018	Wind Speed (kts)	2.5
S2	27 Mar 2018	Wind Dir	NE
S2	27 Mar 2018	Animal Life	4 Birds
S2	27 Mar 2018	Floatables	None
S2	27 Mar 2018	Water Color	Green
S2	27 Mar 2018	Current Direction	N
S2	27 Mar 2018	Water Temp (C)	16
S2	27 Mar 2018	Wave Height Low (ft)	2
S2	27 Mar 2018	High Tide (ft)	5.2
S2	27 Mar 2018	High Tide Time	638
S2	27 Mar 2018	Low Tide (ft)	1.7
S2	27 Mar 2018	Low Tide Time	1246
S2	27 Mar 2018	Comments	Kelp; Seagrass; Algae; 6 Persons; Water clear; Seashell; No flow from storm drain
S3	06 Mar 2018	Arrive Time	1145
S3	06 Mar 2018	Weather	Sunny
S3	06 Mar 2018	Wind Speed (kts)	0.9
S3	06 Mar 2018	Wind Dir	SW
S3	06 Mar 2018	Animal Life	5 Birds; 5 Dolphins
S3	06 Mar 2018	Floatables	None
S3	06 Mar 2018	Water Color	Green
S3	06 Mar 2018	Current Direction	S
S3	06 Mar 2018	Water Temp (C)	20
S3	06 Mar 2018	Wave Height Low (ft)	2
S3	06 Mar 2018	High Tide (ft)	3.5
S3	06 Mar 2018	High Tide Time	0
S3	06 Mar 2018	Low Tide (ft)	0.8
S3	06 Mar 2018	Low Tide Time	609
S3	06 Mar 2018	Comments	Water clear; No flow from stormdrain
S3	13 Mar 2018	Arrive Time	1158
S3	13 Mar 2018	Weather	Cloudy
S3	13 Mar 2018	Wind Speed (kts)	5
S3	13 Mar 2018	Wind Dir	N
S3	13 Mar 2018	Animal Life	>20 Shorebirds
S3	13 Mar 2018	Floatables	None
S3	13 Mar 2018	Water Color	Green
S3	13 Mar 2018	Current Direction	S
S3	13 Mar 2018	Water Temp (C)	14
S3	13 Mar 2018	Wave Height Low (ft)	2
S3	13 Mar 2018	High Tide (ft)	4.8
S3	13 Mar 2018	High Tide Time	725
S3	13 Mar 2018	Low Tide (ft)	-0.3
S3	13 Mar 2018	Low Tide Time	1424

Station	Date	Parameter	Value
S3	13 Mar 2018	Comments	Seagrass; Algae; 10 Persons; Water clear; No flow from stormdrain
S3	20 Mar 2018	Arrive Time	955
S3	20 Mar 2018	Weather	Cloudy
S3	20 Mar 2018	Wind Speed (kts)	0.3
S3	20 Mar 2018	Wind Dir	NW
S3	20 Mar 2018	Animal Life	None
S3	20 Mar 2018	Floatables	None
S3	20 Mar 2018	Water Color	Green
S3	20 Mar 2018	Current Direction	
S3	20 Mar 2018	Water Temp (C)	14
S3	20 Mar 2018	Wave Height Low (ft)	1
S3	20 Mar 2018	High Tide (ft)	4.2
S3	20 Mar 2018	High Tide Time	1138
S3	20 Mar 2018	Low Tide (ft)	0.2
S3	20 Mar 2018	Low Tide Time	541
S3	20 Mar 2018	Comments	No flow from stormdrain; Water clarity and current was not recorded
S3	27 Mar 2018	Arrive Time	1255
S3	27 Mar 2018	Weather	Sunny
S3	27 Mar 2018	Wind Speed (kts)	3.1
S3	27 Mar 2018	Wind Dir	NE
S3	27 Mar 2018	Animal Life	15 Birds; 1 Dog
S3	27 Mar 2018	Floatables	None
S3	27 Mar 2018	Water Color	Green
S3	27 Mar 2018	Current Direction	N
S3	27 Mar 2018	Water Temp (C)	18
S3	27 Mar 2018	Wave Height Low (ft)	2
S3	27 Mar 2018	High Tide (ft)	5.2
S3	27 Mar 2018	High Tide Time	638
S3	27 Mar 2018	Low Tide (ft)	1.7
S3	27 Mar 2018	Low Tide Time	1246
S3	27 Mar 2018	Comments	Kelp; Seagrass; Algae; 50 Persons; Water clear; Seashells; No flow from storm drain
S4	06 Mar 2018	Arrive Time	852
S4	06 Mar 2018	Weather	Sunny
S4	06 Mar 2018	Wind Speed (kts)	2.1
S4	06 Mar 2018	Wind Dir	SW
S4	06 Mar 2018	Animal Life	23 Birds
S4	06 Mar 2018	Floatables	None
S4	06 Mar 2018	Water Color	Green
S4	06 Mar 2018	Current Direction	N
S4	06 Mar 2018	Water Temp (C)	15.2
S4	06 Mar 2018	Wave Height Low (ft)	3
S4	06 Mar 2018	High Tide (ft)	3.5
S4	06 Mar 2018	High Tide Time	0
S4	06 Mar 2018	Low Tide (ft)	0.8
S4	06 Mar 2018	Low Tide Time	609
S4	06 Mar 2018	Comments	Seagrass; Water clear
S4	13 Mar 2018	Arrive Time	852
S4	13 Mar 2018	Weather	Cloudy
S4	13 Mar 2018	Wind Speed (kts)	5
S4	13 Mar 2018	Wind Dir	NW

Station	Date	Parameter	Value
S4	13 Mar 2018	Animal Life	None
S4	13 Mar 2018	Floatables	None
S4	13 Mar 2018	Water Color	Green
S4	13 Mar 2018	Current Direction	N
S4	13 Mar 2018	Water Temp (C)	11.5
S4	13 Mar 2018	Wave Height Low (ft)	3
S4	13 Mar 2018	High Tide (ft)	4.8
S4	13 Mar 2018	High Tide Time	725
S4	13 Mar 2018	Low Tide (ft)	-0.3
S4	13 Mar 2018	Low Tide Time	1424
S4	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S4	20 Mar 2018	Arrive Time	843
S4	20 Mar 2018	Weather	Sunny
S4	20 Mar 2018	Wind Speed (kts)	2.4
S4	20 Mar 2018	Wind Dir	W
S4	20 Mar 2018	Animal Life	35 Birds
S4	20 Mar 2018	Floatables	None
S4	20 Mar 2018	Water Color	Green
S4	20 Mar 2018	Current Direction	N
S4	20 Mar 2018	Water Temp (C)	13.8
S4	20 Mar 2018	Wave Height Low (ft)	2
S4	20 Mar 2018	High Tide (ft)	4.2
S4	20 Mar 2018	High Tide Time	1138
S4	20 Mar 2018	Low Tide (ft)	0.2
S4	20 Mar 2018	Low Tide Time	541
S4	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S4	27 Mar 2018	Arrive Time	835
S4	27 Mar 2018	Weather	Sunny
S4	27 Mar 2018	Wind Speed (kts)	3.4
S4	27 Mar 2018	Wind Dir	NE
S4	27 Mar 2018	Animal Life	4 Birds
S4	27 Mar 2018	Floatables	None
S4	27 Mar 2018	Water Color	Green
S4	27 Mar 2018	Current Direction	NE
S4	27 Mar 2018	Water Temp (C)	13.4
S4	27 Mar 2018	Wave Height Low (ft)	2
S4	27 Mar 2018	High Tide (ft)	5.2
S4	27 Mar 2018	High Tide Time	638
S4	27 Mar 2018	Low Tide (ft)	1.7
S4	27 Mar 2018	Low Tide Time	1246
S4	27 Mar 2018	Comments	Water clear
S5	06 Mar 2018	Arrive Time	954
S5	06 Mar 2018	Weather	Sunny
S5	06 Mar 2018	Wind Speed (kts)	5.1
S5	06 Mar 2018	Wind Dir	NW
S5	06 Mar 2018	Animal Life	2 Dogs
S5	06 Mar 2018	Floatables	None
S5	06 Mar 2018	Water Color	Green
S5	06 Mar 2018	Current Direction	N
S5	06 Mar 2018	Water Temp (C)	17.2
S5	06 Mar 2018	Wave Height Low (ft)	1
S5	06 Mar 2018	High Tide (ft)	3.5

Station	Date	Parameter	Value
S5	06 Mar 2018	High Tide Time	0
S5	06 Mar 2018	Low Tide (ft)	0.8
S5	06 Mar 2018	Low Tide Time	609
S5	06 Mar 2018	Comments	3 Persons; Water clear
S5	13 Mar 2018	Arrive Time	1003
S5	13 Mar 2018	Weather	Cloudy
S5	13 Mar 2018	Wind Speed (kts)	5.4
S5	13 Mar 2018	Wind Dir	NW
S5	13 Mar 2018	Animal Life	None
S5	13 Mar 2018	Floatables	None
S5	13 Mar 2018	Water Color	Green
S5	13 Mar 2018	Current Direction	N
S5	13 Mar 2018	Water Temp (C)	12.2
S5	13 Mar 2018	Wave Height Low (ft)	3
S5	13 Mar 2018	High Tide (ft)	4.8
S5	13 Mar 2018	High Tide Time	725
S5	13 Mar 2018	Low Tide (ft)	-0.3
S5	13 Mar 2018	Low Tide Time	1424
S5	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S5	15 Mar 2018	Arrive Time	902
S5	15 Mar 2018	Weather	Overcast
S5	15 Mar 2018	Wind Speed (kts)	10.1
S5	15 Mar 2018	Wind Dir	NW
S5	15 Mar 2018	Animal Life	None
S5	15 Mar 2018	Floatables	None
S5	15 Mar 2018	Water Color	Green
S5	15 Mar 2018	Current Direction	N
S5	15 Mar 2018	Water Temp (C)	15.5
S5	15 Mar 2018	Wave Height Low (ft)	3
S5	15 Mar 2018	High Tide (ft)	5.2
S5	15 Mar 2018	High Tide Time	835
S5	15 Mar 2018	Low Tide (ft)	1.1
S5	15 Mar 2018	Low Tide Time	238
S5	15 Mar 2018	Comments	Seagrass; Water clear; Resample
S5	20 Mar 2018	Arrive Time	948
S5	20 Mar 2018	Weather	Sunny
S5	20 Mar 2018	Wind Speed (kts)	5
S5	20 Mar 2018	Wind Dir	NW
S5	20 Mar 2018	Animal Life	None
S5	20 Mar 2018	Floatables	None
S5	20 Mar 2018	Water Color	Green
S5	20 Mar 2018	Current Direction	N
S5	20 Mar 2018	Water Temp (C)	14.1
S5	20 Mar 2018	Wave Height Low (ft)	2
S5	20 Mar 2018	High Tide (ft)	4.2
S5	20 Mar 2018	High Tide Time	1138
S5	20 Mar 2018	Low Tide (ft)	0.2
S5	20 Mar 2018	Low Tide Time	541
S5	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S5	27 Mar 2018	Arrive Time	1003
S5	27 Mar 2018	Weather	Sunny

Station	Date	Parameter	Value
S5	27 Mar 2018	Wind Speed (kts)	4.5
S5	27 Mar 2018	Wind Dir	N
S5	27 Mar 2018	Animal Life	8 Birds
S5	27 Mar 2018	Floatables	None
S5	27 Mar 2018	Water Color	Green
S5	27 Mar 2018	Current Direction	N
S5	27 Mar 2018	Water Temp (C)	14.6
S5	27 Mar 2018	Wave Height Low (ft)	2
S5	27 Mar 2018	High Tide (ft)	5.2
S5	27 Mar 2018	High Tide Time	638
S5	27 Mar 2018	Low Tide (ft)	1.7
S5	27 Mar 2018	Low Tide Time	1246
S5	27 Mar 2018	Comments	Kelp; Water clear
S6	06 Mar 2018	Arrive Time	1005
S6	06 Mar 2018	Weather	Sunny
S6	06 Mar 2018	Wind Speed (kts)	5.6
S6	06 Mar 2018	Wind Dir	W
S6	06 Mar 2018	Animal Life	None
S6	06 Mar 2018	Floatables	None
S6	06 Mar 2018	Water Color	Green
S6	06 Mar 2018	Current Direction	N
S6	06 Mar 2018	Water Temp (C)	16
S6	06 Mar 2018	Wave Height Low (ft)	2
S6	06 Mar 2018	High Tide (ft)	3.5
S6	06 Mar 2018	High Tide Time	0
S6	06 Mar 2018	Low Tide (ft)	0.8
S6	06 Mar 2018	Low Tide Time	609
S6	06 Mar 2018	Comments	4 Persons; Water clear
S6	13 Mar 2018	Arrive Time	1013
S6	13 Mar 2018	Weather	Cloudy
S6	13 Mar 2018	Wind Speed (kts)	4.4
S6	13 Mar 2018	Wind Dir	NW
S6	13 Mar 2018	Animal Life	None
S6	13 Mar 2018	Floatables	None
S6	13 Mar 2018	Water Color	Green
S6	13 Mar 2018	Current Direction	N
S6	13 Mar 2018	Water Temp (C)	11.8
S6	13 Mar 2018	Wave Height Low (ft)	4
S6	13 Mar 2018	High Tide (ft)	4.8
S6	13 Mar 2018	High Tide Time	725
S6	13 Mar 2018	Low Tide (ft)	-0.3
S6	13 Mar 2018	Low Tide Time	1424
S6	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S6	20 Mar 2018	Arrive Time	940
S6	20 Mar 2018	Weather	Partly Cloudy
S6	20 Mar 2018	Wind Speed (kts)	4.2
S6	20 Mar 2018	Wind Dir	W
S6	20 Mar 2018	Animal Life	None
S6	20 Mar 2018	Floatables	None
S6	20 Mar 2018	Water Color	Green
S6	20 Mar 2018	Current Direction	N
S6	20 Mar 2018	Water Temp (C)	13.4

Station	Date	Parameter	Value
S6	20 Mar 2018	Wave Height Low (ft)	3
S6	20 Mar 2018	High Tide (ft)	4.2
S6	20 Mar 2018	High Tide Time	1138
S6	20 Mar 2018	Low Tide (ft)	0.2
S6	20 Mar 2018	Low Tide Time	541
S6	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S6	27 Mar 2018	Arrive Time	1013
S6	27 Mar 2018	Weather	Sunny
S6	27 Mar 2018	Wind Speed (kts)	5.6
S6	27 Mar 2018	Wind Dir	NW
S6	27 Mar 2018	Animal Life	3 Dogs
S6	27 Mar 2018	Floatables	None
S6	27 Mar 2018	Water Color	Green
S6	27 Mar 2018	Current Direction	N
S6	27 Mar 2018	Water Temp (C)	13.6
S6	27 Mar 2018	Wave Height Low (ft)	2
S6	27 Mar 2018	High Tide (ft)	5.2
S6	27 Mar 2018	High Tide Time	638
S6	27 Mar 2018	Low Tide (ft)	1.7
S6	27 Mar 2018	Low Tide Time	1246
S6	27 Mar 2018	Comments	7 Persons; Water clear
S8	06 Mar 2018	Arrive Time	1125
S8	06 Mar 2018	Weather	Sunny
S8	06 Mar 2018	Wind Speed (kts)	5.6
S8	06 Mar 2018	Wind Dir	NW
S8	06 Mar 2018	Animal Life	None
S8	06 Mar 2018	Floatables	None
S8	06 Mar 2018	Water Color	Green
S8	06 Mar 2018	Current Direction	N
S8	06 Mar 2018	Water Temp (C)	16.8
S8	06 Mar 2018	Wave Height Low (ft)	2
S8	06 Mar 2018	High Tide (ft)	3.5
S8	06 Mar 2018	High Tide Time	0
S8	06 Mar 2018	Low Tide (ft)	0.8
S8	06 Mar 2018	Low Tide Time	609
S8	06 Mar 2018	Comments	Seagrass; Water clear
S8	13 Mar 2018	Arrive Time	1155
S8	13 Mar 2018	Weather	Overcast
S8	13 Mar 2018	Wind Speed (kts)	2.9
S8	13 Mar 2018	Wind Dir	NW
S8	13 Mar 2018	Animal Life	None
S8	13 Mar 2018	Floatables	None
S8	13 Mar 2018	Water Color	Green
S8	13 Mar 2018	Current Direction	N
S8	13 Mar 2018	Water Temp (C)	12.6
S8	13 Mar 2018	Wave Height Low (ft)	3
S8	13 Mar 2018	High Tide (ft)	4.8
S8	13 Mar 2018	High Tide Time	725
S8	13 Mar 2018	Low Tide (ft)	-0.3
S8	13 Mar 2018	Low Tide Time	1424
S8	13 Mar 2018	Comments	2 Persons; Water clear

Station	Date	Parameter	Value
S8	20 Mar 2018	Arrive Time	1019
S8	20 Mar 2018	Weather	Sunny
S8	20 Mar 2018	Wind Speed (kts)	3.3
S8	20 Mar 2018	Wind Dir	W
S8	20 Mar 2018	Animal Life	None
S8	20 Mar 2018	Floatables	None
S8	20 Mar 2018	Water Color	Green
S8	20 Mar 2018	Current Direction	N
S8	20 Mar 2018	Water Temp (C)	16.3
S8	20 Mar 2018	Wave Height Low (ft)	3
S8	20 Mar 2018	High Tide (ft)	4.2
S8	20 Mar 2018	High Tide Time	1138
S8	20 Mar 2018	Low Tide (ft)	0.2
S8	20 Mar 2018	Low Tide Time	541
S8	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S8	27 Mar 2018	Arrive Time	1133
S8	27 Mar 2018	Weather	Sunny
S8	27 Mar 2018	Wind Speed (kts)	4.6
S8	27 Mar 2018	Wind Dir	SW
S8	27 Mar 2018	Animal Life	None
S8	27 Mar 2018	Floatables	None
S8	27 Mar 2018	Water Color	Green
S8	27 Mar 2018	Current Direction	N
S8	27 Mar 2018	Water Temp (C)	15.3
S8	27 Mar 2018	Wave Height Low (ft)	2
S8	27 Mar 2018	High Tide (ft)	5.2
S8	27 Mar 2018	High Tide Time	638
S8	27 Mar 2018	Low Tide (ft)	1.7
S8	27 Mar 2018	Low Tide Time	1246
S8	27 Mar 2018	Comments	Kelp; Seagrass; 30 Persons; 6 Swimmers; Water clear
S9	06 Mar 2018	Arrive Time	1225
S9	06 Mar 2018	Weather	Sunny
S9	06 Mar 2018	Wind Speed (kts)	10.3
S9	06 Mar 2018	Wind Dir	N
S9	06 Mar 2018	Animal Life	None
S9	06 Mar 2018	Floatables	None
S9	06 Mar 2018	Water Color	Green
S9	06 Mar 2018	Current Direction	N
S9	06 Mar 2018	Water Temp (C)	18.7
S9	06 Mar 2018	Wave Height Low (ft)	1
S9	06 Mar 2018	High Tide (ft)	3.5
S9	06 Mar 2018	High Tide Time	0
S9	06 Mar 2018	Low Tide (ft)	1.3
S9	06 Mar 2018	Low Tide Time	1751
S9	06 Mar 2018	Comments	10 Persons; Water clear
S9	13 Mar 2018	Arrive Time	1233
S9	13 Mar 2018	Weather	Overcast
S9	13 Mar 2018	Wind Speed (kts)	4.2
S9	13 Mar 2018	Wind Dir	NW
S9	13 Mar 2018	Animal Life	None
S9	13 Mar 2018	Floatables	None
S9	13 Mar 2018	Water Color	Green

Station	Date	Parameter	Value
S9	13 Mar 2018	Current Direction	N
S9	13 Mar 2018	Water Temp (C)	12.6
S9	13 Mar 2018	Wave Height Low (ft)	4
S9	13 Mar 2018	High Tide (ft)	4.8
S9	13 Mar 2018	High Tide Time	725
S9	13 Mar 2018	Low Tide (ft)	-0.3
S9	13 Mar 2018	Low Tide Time	1424
S9	13 Mar 2018	Comments	Kelp; Seagrass; 10 Persons; Water clear
S9	20 Mar 2018	Arrive Time	1041
S9	20 Mar 2018	Weather	Sunny
S9	20 Mar 2018	Wind Speed (kts)	1.2
S9	20 Mar 2018	Wind Dir	W
S9	20 Mar 2018	Animal Life	None
S9	20 Mar 2018	Floatables	None
S9	20 Mar 2018	Water Color	Green
S9	20 Mar 2018	Current Direction	N
S9	20 Mar 2018	Water Temp (C)	16.2
S9	20 Mar 2018	Wave Height Low (ft)	2
S9	20 Mar 2018	High Tide (ft)	4.2
S9	20 Mar 2018	High Tide Time	1138
S9	20 Mar 2018	Low Tide (ft)	0.2
S9	20 Mar 2018	Low Tide Time	541
S9	20 Mar 2018	Comments	Kelp; Seagrass; 15 Persons; 3 Swimmers; Water clear
S9	27 Mar 2018	Arrive Time	1232
S9	27 Mar 2018	Weather	Sunny
S9	27 Mar 2018	Wind Speed (kts)	5.8
S9	27 Mar 2018	Wind Dir	W
S9	27 Mar 2018	Animal Life	None
S9	27 Mar 2018	Floatables	None
S9	27 Mar 2018	Water Color	Green
S9	27 Mar 2018	Current Direction	N
S9	27 Mar 2018	Water Temp (C)	19
S9	27 Mar 2018	Wave Height Low (ft)	2
S9	27 Mar 2018	High Tide (ft)	5.2
S9	27 Mar 2018	High Tide Time	638
S9	27 Mar 2018	Low Tide (ft)	1.7
S9	27 Mar 2018	Low Tide Time	1246
S9	27 Mar 2018	Comments	55 Persons; 3 Surfers; 6 Swimmers; Water clear
S10	06 Mar 2018	Arrive Time	845
S10	06 Mar 2018	Weather	Sunny
S10	06 Mar 2018	Wind Speed (kts)	5.4
S10	06 Mar 2018	Wind Dir	SW
S10	06 Mar 2018	Animal Life	None
S10	06 Mar 2018	Floatables	None
S10	06 Mar 2018	Water Color	Green
S10	06 Mar 2018	Current Direction	SW
S10	06 Mar 2018	Water Temp (C)	16.2
S10	06 Mar 2018	Wave Height Low (ft)	2
S10	06 Mar 2018	High Tide (ft)	3.5
S10	06 Mar 2018	High Tide Time	0
S10	06 Mar 2018	Low Tide (ft)	0.8
S10	06 Mar 2018	Low Tide Time	609

Station	Date	Parameter	Value
S10	06 Mar 2018	Comments	Seagrass; Water clear
S10	13 Mar 2018	Arrive Time	848
S10	13 Mar 2018	Weather	Cloudy
S10	13 Mar 2018	Wind Speed (kts)	5.2
S10	13 Mar 2018	Wind Dir	NW
S10	13 Mar 2018	Animal Life	None
S10	13 Mar 2018	Floatables	None
S10	13 Mar 2018	Water Color	Green
S10	13 Mar 2018	Current Direction	N
S10	13 Mar 2018	Water Temp (C)	10.2
S10	13 Mar 2018	Wave Height Low (ft)	3
S10	13 Mar 2018	High Tide (ft)	4.8
S10	13 Mar 2018	High Tide Time	725
S10	13 Mar 2018	Low Tide (ft)	-0.3
S10	13 Mar 2018	Low Tide Time	1424
S10	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S10	20 Mar 2018	Arrive Time	840
S10	20 Mar 2018	Weather	Sunny
S10	20 Mar 2018	Wind Speed (kts)	2.2
S10	20 Mar 2018	Wind Dir	W
S10	20 Mar 2018	Animal Life	None
S10	20 Mar 2018	Floatables	None
S10	20 Mar 2018	Water Color	Green
S10	20 Mar 2018	Current Direction	N
S10	20 Mar 2018	Water Temp (C)	14.1
S10	20 Mar 2018	Wave Height Low (ft)	3
S10	20 Mar 2018	High Tide (ft)	4.2
S10	20 Mar 2018	High Tide Time	1138
S10	20 Mar 2018	Low Tide (ft)	0.2
S10	20 Mar 2018	Low Tide Time	541
S10	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S10	27 Mar 2018	Arrive Time	830
S10	27 Mar 2018	Weather	Sunny
S10	27 Mar 2018	Wind Speed (kts)	4.2
S10	27 Mar 2018	Wind Dir	E
S10	27 Mar 2018	Animal Life	None
S10	27 Mar 2018	Floatables	None
S10	27 Mar 2018	Water Color	Green
S10	27 Mar 2018	Current Direction	N
S10	27 Mar 2018	Water Temp (C)	12.7
S10	27 Mar 2018	Wave Height Low (ft)	2
S10	27 Mar 2018	High Tide (ft)	5.2
S10	27 Mar 2018	High Tide Time	638
S10	27 Mar 2018	Low Tide (ft)	1.7
S10	27 Mar 2018	Low Tide Time	1246
S10	27 Mar 2018	Comments	Water clear
S11	06 Mar 2018	Arrive Time	959
S11	06 Mar 2018	Weather	Sunny
S11	06 Mar 2018	Wind Speed (kts)	4
S11	06 Mar 2018	Wind Dir	W
S11	06 Mar 2018	Animal Life	2 Dogs

Station	Date	Parameter	Value
S11	06 Mar 2018	Floatables	None
S11	06 Mar 2018	Water Color	Green
S11	06 Mar 2018	Current Direction	N
S11	06 Mar 2018	Water Temp (C)	15.2
S11	06 Mar 2018	Wave Height Low (ft)	2
S11	06 Mar 2018	High Tide (ft)	3.5
S11	06 Mar 2018	High Tide Time	0
S11	06 Mar 2018	Low Tide (ft)	0.8
S11	06 Mar 2018	Low Tide Time	609
S11	06 Mar 2018	Comments	3 Persons; Water clear
S11	13 Mar 2018	Arrive Time	1009
S11	13 Mar 2018	Weather	Cloudy
S11	13 Mar 2018	Wind Speed (kts)	5.6
S11	13 Mar 2018	Wind Dir	NW
S11	13 Mar 2018	Animal Life	None
S11	13 Mar 2018	Floatables	None
S11	13 Mar 2018	Water Color	Green
S11	13 Mar 2018	Current Direction	N
S11	13 Mar 2018	Water Temp (C)	12
S11	13 Mar 2018	Wave Height Low (ft)	3
S11	13 Mar 2018	High Tide (ft)	4.8
S11	13 Mar 2018	High Tide Time	725
S11	13 Mar 2018	Low Tide (ft)	-0.3
S11	13 Mar 2018	Low Tide Time	1424
S11	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S11	20 Mar 2018	Arrive Time	944
S11	20 Mar 2018	Weather	Sunny
S11	20 Mar 2018	Wind Speed (kts)	5.1
S11	20 Mar 2018	Wind Dir	W
S11	20 Mar 2018	Animal Life	None
S11	20 Mar 2018	Floatables	None
S11	20 Mar 2018	Water Color	Green
S11	20 Mar 2018	Current Direction	N
S11	20 Mar 2018	Water Temp (C)	14.2
S11	20 Mar 2018	Wave Height Low (ft)	3
S11	20 Mar 2018	High Tide (ft)	4.2
S11	20 Mar 2018	High Tide Time	1138
S11	20 Mar 2018	Low Tide (ft)	0.2
S11	20 Mar 2018	Low Tide Time	541
S11	20 Mar 2018	Comments	Kelp; Seagrass; Water clear
S11	27 Mar 2018	Arrive Time	1010
S11	27 Mar 2018	Weather	Sunny
S11	27 Mar 2018	Wind Speed (kts)	5.8
S11	27 Mar 2018	Wind Dir	N
S11	27 Mar 2018	Animal Life	None
S11	27 Mar 2018	Floatables	None
S11	27 Mar 2018	Water Color	Green
S11	27 Mar 2018	Current Direction	N
S11	27 Mar 2018	Water Temp (C)	13.4
S11	27 Mar 2018	Wave Height Low (ft)	2
S11	27 Mar 2018	High Tide (ft)	5.2
S11	27 Mar 2018	High Tide Time	638

Station	Date	Parameter	Value
S11	27 Mar 2018	Low Tide (ft)	1.7
S11	27 Mar 2018	Low Tide Time	1246
S11	27 Mar 2018	Comments	Water clear
S12	06 Mar 2018	Arrive Time	1015
S12	06 Mar 2018	Weather	Sunny
S12	06 Mar 2018	Wind Speed (kts)	4.2
S12	06 Mar 2018	Wind Dir	NW
S12	06 Mar 2018	Animal Life	None
S12	06 Mar 2018	Floatables	None
S12	06 Mar 2018	Water Color	Green
S12	06 Mar 2018	Current Direction	NE
S12	06 Mar 2018	Water Temp (C)	15.3
S12	06 Mar 2018	Wave Height Low (ft)	3
S12	06 Mar 2018	High Tide (ft)	3.5
S12	06 Mar 2018	High Tide Time	0
S12	06 Mar 2018	Low Tide (ft)	0.8
S12	06 Mar 2018	Low Tide Time	609
S12	06 Mar 2018	Comments	5 Persons; Water clear
S12	13 Mar 2018	Arrive Time	1021
S12	13 Mar 2018	Weather	Cloudy
S12	13 Mar 2018	Wind Speed (kts)	5.8
S12	13 Mar 2018	Wind Dir	NW
S12	13 Mar 2018	Animal Life	None
S12	13 Mar 2018	Floatables	None
S12	13 Mar 2018	Water Color	Green
S12	13 Mar 2018	Current Direction	N
S12	13 Mar 2018	Water Temp (C)	12
S12	13 Mar 2018	Wave Height Low (ft)	3
S12	13 Mar 2018	High Tide (ft)	4.8
S12	13 Mar 2018	High Tide Time	725
S12	13 Mar 2018	Low Tide (ft)	-0.3
S12	13 Mar 2018	Low Tide Time	1424
S12	13 Mar 2018	Comments	Kelp; Seagrass; Water clear
S12	20 Mar 2018	Arrive Time	932
S12	20 Mar 2018	Weather	Sunny
S12	20 Mar 2018	Wind Speed (kts)	3.6
S12	20 Mar 2018	Wind Dir	W
S12	20 Mar 2018	Animal Life	None
S12	20 Mar 2018	Floatables	None
S12	20 Mar 2018	Water Color	Green
S12	20 Mar 2018	Current Direction	N
S12	20 Mar 2018	Water Temp (C)	13.5
S12	20 Mar 2018	Wave Height Low (ft)	2
S12	20 Mar 2018	High Tide (ft)	4.2
S12	20 Mar 2018	High Tide Time	1138
S12	20 Mar 2018	Low Tide (ft)	0.2
S12	20 Mar 2018	Low Tide Time	541
S12	20 Mar 2018	Comments	Kelp; Seagrass; 1 Person; Water clear
S12	27 Mar 2018	Arrive Time	1023
S12	27 Mar 2018	Weather	Sunny
S12	27 Mar 2018	Wind Speed (kts)	5.4

Station	Date	Parameter	Value
S12	27 Mar 2018	Wind Dir	N
S12	27 Mar 2018	Animal Life	1 Dog
S12	27 Mar 2018	Floatables	None
S12	27 Mar 2018	Water Color	Green
S12	27 Mar 2018	Current Direction	N
S12	27 Mar 2018	Water Temp (C)	15
S12	27 Mar 2018	Wave Height Low (ft)	2
S12	27 Mar 2018	High Tide (ft)	5.2
S12	27 Mar 2018	High Tide Time	638
S12	27 Mar 2018	Low Tide (ft)	1.7
S12	27 Mar 2018	Low Tide Time	1246
S12	27 Mar 2018	Comments	1 Jogger; 9 Persons; 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 Mar 2018	7*	3*	2*	2*	3*	3*	15*
02 Mar 2018	7*	3*	2*	2*	3*	3*	15*
03 Mar 2018	7*	3*	2*	2*	3*	3*	15*
04 Mar 2018	7*	3*	2*	2*	3*	3*	15*
05 Mar 2018	9	4	2	2	3	4	13
06 Mar 2018	9	4	2	2	3	4	13
07 Mar 2018	12*	4*	2*	2*	3*	5*	20*
08 Mar 2018	12*	4*	2*	2*	3*	5*	20*
09 Mar 2018	12*	4*	2*	2*	3*	5*	20*
10 Mar 2018	12*	4*	2*	2*	3*	5*	20*
11 Mar 2018	12*	4*	2*	2*	3*	5*	20*
12 Mar 2018	17	11	5	5	7	9	63
13 Mar 2018	17	11	5	5	7	9	63
14 Mar 2018	17	11	5	5	7	9	63
15 Mar 2018	17	11	5	5	7	9	63
16 Mar 2018	17	11	5	5	7	9	63
17 Mar 2018	17	11	5	5	7	9	63
18 Mar 2018	8*	17*	6*	6*	9*	12*	30*
19 Mar 2018	8	21	5	5	7	9	26
20 Mar 2018	8	21	5	5	7	9	26
21 Mar 2018	8	21	5	5	7	9	26
22 Mar 2018	11*	27*	6*	6*	9*	12*	49*
23 Mar 2018	11*	27*	6*	6*	9*	12*	49*
24 Mar 2018	11*	27*	6*	6*	9*	12*	49*
25 Mar 2018	11*	27*	6*	6*	9*	12*	49*
26 Mar 2018	10	16	5	5	7	9	28
27 Mar 2018	10	16	5	5	7	9	28
28 Mar 2018	15*	27*	6*	6*	6*	10*	39*
29 Mar 2018	15*	27*	6*	6*	6*	10*	39*
30 Mar 2018	15*	27*	6*	6*	6*	10*	39*
31 Mar 2018	15*	27*	6*	6*	6*	10*	39*

* 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 Mar 2018	4*	2*	2*	2*	2*	2*	5*
02 Mar 2018	4*	2*	2*	2*	2*	2*	5*
03 Mar 2018	4*	2*	2*	2*	2*	2*	5*
04 Mar 2018	4*	2*	2*	2*	2*	2*	5*
05 Mar 2018	3	2	2	2	2	2	4
06 Mar 2018	3	2	2	2	2	2	4
07 Mar 2018	4*	2*	2*	2*	2*	2*	5*
08 Mar 2018	4*	2*	2*	2*	2*	2*	5*
09 Mar 2018	4*	2*	2*	2*	2*	2*	5*
10 Mar 2018	4*	2*	2*	2*	2*	2*	5*
11 Mar 2018	4*	2*	2*	2*	2*	2*	5*
12 Mar 2018	5	4	3	3	3	2	11
13 Mar 2018	5	4	3	3	3	2	11
14 Mar 2018	5	4	3	3	3	2	11
15 Mar 2018	5	4	3	3	3	2	11
16 Mar 2018	5	4	3	3	3	2	11
17 Mar 2018	5	4	3	3	3	2	11
18 Mar 2018	3*	4*	3*	3*	3*	3*	7*
19 Mar 2018	3	5	3	3	3	2	5
20 Mar 2018	3	5	3	3	3	2	5
21 Mar 2018	3	5	3	3	3	2	5
22 Mar 2018	3*	6*	3*	3*	3*	3*	7*
23 Mar 2018	3*	6*	3*	3*	3*	3*	7*
24 Mar 2018	3*	6*	3*	3*	3*	3*	7*
25 Mar 2018	3*	6*	3*	3*	3*	3*	7*
26 Mar 2018	3	5	3	3	3	2	5
27 Mar 2018	3	5	3	3	3	2	5
28 Mar 2018	3*	6*	3*	3*	3*	3*	7*
29 Mar 2018	3*	6*	3*	3*	3*	3*	7*
30 Mar 2018	3*	6*	3*	3*	3*	3*	7*
31 Mar 2018	3*	6*	3*	3*	3*	3*	7*

* 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 Mar 2018	3*	2*	2*	2*	2*	2*	4*
02 Mar 2018	3*	2*	2*	2*	2*	2*	4*
03 Mar 2018	3*	2*	2*	2*	2*	2*	4*
04 Mar 2018	3*	2*	2*	2*	2*	2*	4*
05 Mar 2018	3	2	2	2	2	2	3
06 Mar 2018	3	2	2	2	2	2	3
07 Mar 2018	3*	2*	2*	2*	2*	2*	4*
08 Mar 2018	3*	2*	2*	2*	2*	2*	4*
09 Mar 2018	3*	2*	2*	2*	2*	2*	4*
10 Mar 2018	3*	2*	2*	2*	2*	2*	4*
11 Mar 2018	3*	2*	2*	2*	2*	2*	4*
12 Mar 2018	3	3	3	2	2	2	6
13 Mar 2018	3	3	3	2	2	2	6
14 Mar 2018	3	3	3	2	2	2	6
15 Mar 2018	3	3	3	2	2	2	6
16 Mar 2018	3	3	3	2	2	2	6
17 Mar 2018	3	3	3	2	2	2	6
18 Mar 2018	2*	3*	3*	2*	2*	2*	4*
19 Mar 2018	2	3	3	2	2	2	4
20 Mar 2018	2	3	3	2	2	2	4
21 Mar 2018	2	3	3	2	2	2	4
22 Mar 2018	2*	3*	3*	2*	2*	2*	4*
23 Mar 2018	2*	3*	3*	2*	2*	2*	4*
24 Mar 2018	2*	3*	3*	2*	2*	2*	4*
25 Mar 2018	2*	3*	3*	2*	2*	2*	4*
26 Mar 2018	2	3	3	2	2	2	4
27 Mar 2018	2	3	3	2	2	2	4
28 Mar 2018	2*	3*	3*	2*	2*	2*	4*
29 Mar 2018	2*	3*	3*	2*	2*	2*	4*
30 Mar 2018	2*	3*	3*	2*	2*	2*	4*
31 Mar 2018	2*	3*	3*	2*	2*	2*	4*

* Geometric mean calculated using n<5

Table 3.4

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

Date	I19	I24	I25	I26	I32	I39	I40
05 Mar 2018	IC						
12 Mar 2018	IC	IC	IC	IC	IC	IC	E
19 Mar 2018	IC						
26 Mar 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.5

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

Date	I19	I24	I25	I26	I32	I39	I40
05 Mar 2018	IC						
12 Mar 2018	IC	IC	IC	IC	IC	IC	E
19 Mar 2018	IC						
26 Mar 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.6

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

Date	I19	I24	I25	I26	I32	I39	I40
05 Mar 2018	IC						
12 Mar 2018	IC						
19 Mar 2018	IC						
26 Mar 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.7

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

Date	I19	I24	I25	I26	I32	I39	I40
05 Mar 2018	IC						
12 Mar 2018	IC						
19 Mar 2018	IC						
26 Mar 2018	IC						

IC = In Compliance

E = Exceedance

ns = not sampled

ND = no data

Table 3.8

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

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
I19	26 Mar 2018	1206	2	<2	<2	<2	1.00	14.2	67.27	9.1	33.55	8.1
I19	26 Mar 2018	1206	6	4e	<2	<2	0.50	13.1	59.27	7.8	33.54	8.0
I19	26 Mar 2018	1206	11	16e	<2	<2	0.12	11.8	9.21	4.6	33.55	7.8
I19	19 Mar 2018	1233	2	12e	<2	<2	0.17	14.1	70.89	7.4	33.45	8.0
I19	19 Mar 2018	1233	6	<2	<2	<2	1.00	12.8	73.14	6.0	33.52	7.9
I19	19 Mar 2018	1233	11	2e	<2	<2	1.00	12.1	71.81	5.3	33.55	7.9
I19	12 Mar 2018	1225	2	<20	4e	<2	0.20	15.6	59.18	9.2	33.33	8.2
I19	12 Mar 2018	1225	6	40e	44	6e	1.10	14.5	60.27	10.2	33.42	8.2
I19	12 Mar 2018	1225	11	140e	6e	2e	0.04	14.2	65.61	9.7	33.43	8.2
I19	05 Mar 2018	1135	2	20e	<2	<2	0.10	14.3	70.38	7.5	33.46	8.0
I19	05 Mar 2018	1135	6	12e	<2	<2	0.17	13.0	74.33	6.3	33.49	8.0
I19	05 Mar 2018	1135	11	<20	<2	<2	0.10	12.6	73.33	5.9	33.50	7.9
I24	26 Mar 2018	1226	2	<2	<2	<2	1.00	14.2	66.87	9.3	33.54	8.2
I24	26 Mar 2018	1226	6	<2	<2	<2	1.00	13.4	60.29	8.5	33.58	8.1
I24	26 Mar 2018	1226	11	<2	<2	<2	1.00	12.2	72.58	6.2	33.53	7.9
I24	19 Mar 2018	1259	2	160e	12e	<2	0.07	13.7	66.93	7.4	33.36	8.0
I24	19 Mar 2018	1259	6	12e	4e	<2	0.33	13.2	72.51	6.8	33.49	8.0
I24	19 Mar 2018	1259	11	<2	<2	<2	1.00	12.2	65.34	5.1	33.55	7.9
I24	12 Mar 2018	1251	2	600	64	14e	0.11	15.7	57.99	9.9	33.31	8.2
I24	12 Mar 2018	1251	6	400	30e	8e	0.07	14.9	67.87	10.0	33.46	8.2
I24	12 Mar 2018	1251	11	300e	28e	10e	0.09	14.5	60.18	9.9	33.43	8.2
I24	05 Mar 2018	1204	2	16e	<2	<2	0.12	13.9	69.47	7.4	33.50	8.0
I24	05 Mar 2018	1204	6	8e	<2	<2	0.25	13.2	59.24	6.3	33.48	8.0
I24	05 Mar 2018	1204	11	10e	<2	<2	0.20	13.2	49.69	6.2	33.47	7.9
I25	26 Mar 2018	1233	2	<2	<2	<2	1.00	14.3	64.81	9.4	33.54	8.2
I25	26 Mar 2018	1233	6	<2	<2	<2	1.00	13.5	58.34	8.5	33.56	8.1
I25	26 Mar 2018	1233	9	<2	<2	<2	1.00	12.5	73.93	6.5	33.49	8.0
I25	19 Mar 2018	1308	2	<2	<2	<2	1.00	14.4	71.59	8.0	33.47	8.1
I25	19 Mar 2018	1308	6	2e	2e	<2	1.00	13.8	70.36	7.6	33.50	8.1
I25	19 Mar 2018	1308	9	2e	<2	<2	1.00	12.4	78.74	6.0	33.53	7.9
I25	12 Mar 2018	1300	2	220e	10e	4e	0.05	15.5	55.57	10.2	33.33	8.2
I25	12 Mar 2018	1300	6	200e	16e	4e	0.08	14.8	67.26	10.1	33.45	8.2
I25	12 Mar 2018	1300	9	180e	16e	8e	0.09	14.6	67.07	9.7	33.41	8.2
I25	05 Mar 2018	1212	2	<2	<2	<2	1.00	14.2	74.83	7.9	33.50	8.1
I25	05 Mar 2018	1212	6	<2	<2	<2	1.00	12.9	79.64	6.4	33.53	8.0
I25	05 Mar 2018	1212	9	2e	<2	<2	1.00	12.5	81.90	6.0	33.51	7.9

Station	Date	Time	Depth	Total	Fecal	Enteric	F:T	Temp	XMS	DO	Sal	pH
I26	26 Mar 2018	1243	2	<2	<2	<2	1.00	14.2	62.03	9.4	33.55	8.2
I26	26 Mar 2018	1243	6	<2	2e	<2	1.00	12.5	66.77	7.3	33.59	8.1
I26	26 Mar 2018	1243	9	2e	<2	<2	1.00	11.9	74.51	6.0	33.55	7.9
I26	19 Mar 2018	1320	2	<2	<2	<2	1.00	14.5	70.61	8.1	33.46	8.1
I26	19 Mar 2018	1320	6	<2	<2	<2	1.00	13.6	68.69	7.4	33.49	8.0
I26	19 Mar 2018	1320	9	<2	<2	<2	1.00	12.2	76.00	5.7	33.53	7.9
I26	12 Mar 2018	1311	2	280e	10e	4e	0.04	15.6	58.19	10.6	33.32	8.2
I26	12 Mar 2018	1311	6	180e	10e	2e	0.06	15.2	61.13	9.8	33.41	8.2
I26	12 Mar 2018	1311	9	60e	6e	<2	0.10	14.4	69.30	8.8	33.45	8.1
I26	05 Mar 2018	1227	2	<2	<2	<2	1.00	14.0	77.88	7.4	33.50	8.0
I26	05 Mar 2018	1227	6	<2	<2	<2	1.00	13.1	80.20	6.6	33.53	8.0
I26	05 Mar 2018	1227	9	<2	<2	<2	1.00	12.6	82.33	6.2	33.51	7.9
I32	26 Mar 2018	1255	2	<2	<2	<2	1.00	14.2	64.19	9.4	33.55	8.2
I32	26 Mar 2018	1255	6	<2	<2	<2	1.00	13.2	51.30	8.2	33.59	8.1
I32	26 Mar 2018	1255	9	<2	2e	<2	1.00	11.7	35.20	5.0	33.57	7.8
I32	19 Mar 2018	1336	2	<2	<2	<2	1.00	14.1	64.19	8.0	33.48	8.1
I32	19 Mar 2018	1336	6	<2	<2	<2	1.00	13.8	62.93	7.5	33.49	8.0
I32	19 Mar 2018	1336	9	<2	<2	<2	1.00	13.8	60.91	7.3	33.49	8.0
I32	12 Mar 2018	1331	2	240e	6e	<2	0.02	15.5	54.77	10.3	33.30	8.2
I32	12 Mar 2018	1331	6	240e	14e	2e	0.06	15.2	66.77	9.7	33.42	8.2
I32	12 Mar 2018	1331	9	120e	4e	2e	0.03	14.9	64.73	9.6	33.40	8.2
I32	05 Mar 2018	1240	2	<2	<2	<2	1.00	13.9	68.05	7.2	33.49	8.0
I32	05 Mar 2018	1240	6	2e	<2	<2	1.00	13.2	76.52	6.6	33.49	8.0
I32	05 Mar 2018	1240	9	2e	<2	<2	1.00	13.2	76.67	6.5	33.49	8.0
I39	26 Mar 2018	1142	2	<2	<2	<2	1.00	13.8	68.81	9.3	33.54	8.2
I39	26 Mar 2018	1142	12	<2	<2	<2	1.00	11.7	82.94	5.6	33.55	7.9
I39	26 Mar 2018	1142	18	4e	<2	<2	0.50	11.4	71.82	4.9	33.56	7.8
I39	19 Mar 2018	1208	2	<2	<2	<2	1.00	14.3	73.35	8.2	33.48	8.1
I39	19 Mar 2018	1208	12	<2	<2	<2	1.00	12.2	82.11	5.9	33.50	7.9
I39	19 Mar 2018	1208	18	2e	<2	<2	1.00	11.4	82.30	4.8	33.58	7.8
I39	12 Mar 2018	1203	2	100e	10e	4e	0.10	15.0	66.84	10.4	33.43	8.2
I39	12 Mar 2018	1203	12	22e	<2	<2	0.09	14.4	71.71	9.5	33.45	8.2
I39	12 Mar 2018	1203	18	<200	6e	2e	0.03	13.7	71.84	7.9	33.48	8.1
I39	05 Mar 2018	1112	2	<2	<2	<2	1.00	14.1	78.62	8.0	33.50	8.1
I39	05 Mar 2018	1112	12	<2	<2	<2	1.00	13.8	79.71	7.8	33.50	8.1
I39	05 Mar 2018	1112	18	58	<2	<2	0.03	12.2	84.07	5.9	33.54	7.9
I40	26 Mar 2018	1217	2	<2	<2	<2	1.00	13.9	64.64	8.6	33.56	8.1
I40	26 Mar 2018	1217	6	<2	<2	<2	1.00	13.2	57.27	8.1	33.56	8.1
I40	26 Mar 2018	1217	9	6e	2e	2e	0.33	12.2	34.20	6.6	33.57	7.9
I40	19 Mar 2018	1248	2	28e	4e	<2	0.14	13.9	63.64	7.0	33.42	8.0
I40	19 Mar 2018	1248	6	10e	<2	<2	0.20	12.6	66.83	5.6	33.54	7.9

Station	Date	Time	Depth	Total	Fecal	Enter	F:T	Temp	XMS	DO	Sal	pH
I40	19 Mar 2018	1248	9	2e	<2	<2	1.00	12.3	70.84	5.4	33.54	7.9
I40	12 Mar 2018	1239	2	>16000	460	98	0.03	15.7	48.46	9.2	32.63	8.2
I40	12 Mar 2018	1239	6	80e	42	2e	0.52	14.8	66.03	10.3	33.42	8.2
I40	12 Mar 2018	1239	9	3600e	200e	14e	0.06	14.6	68.52	10.1	33.43	8.2
I40	05 Mar 2018	1149	2	10e	2e	<2	0.20	14.0	63.80	7.4	33.49	8.0
I40	05 Mar 2018	1149	6	6e	<2	<2	0.33	13.4	68.07	6.7	33.49	8.0
I40	05 Mar 2018	1149	9	8e	<2	<2	0.25	13.1	69.50	6.3	33.49	8.0

ns = not sampled

ND = no data

Table 3.9

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

Station	Date	Parameter	Value
I19	05 Mar 2018	Depth (m)	11
I19	05 Mar 2018	Arrive Time	1135
I19	05 Mar 2018	Depart Time	1141
I19	05 Mar 2018	Air Temp (C)	15
I19	05 Mar 2018	Weather	Haze
I19	05 Mar 2018	Visibility (mi)	12
I19	05 Mar 2018	Wind Speed (kts)	10
I19	05 Mar 2018	Wind Dir	NW
I19	05 Mar 2018	Water Color	Greenish-Blue
I19	05 Mar 2018	Wave Ht Low (ft)	3
I19	05 Mar 2018	Wave Period (sec)	13
I19	05 Mar 2018	Sea State	Light chop
I19	05 Mar 2018	High Tide (ft)	4.23
I19	05 Mar 2018	High Tide Time	1108
I19	05 Mar 2018	Low Tide (ft)	0.51
I19	05 Mar 2018	Low Tide Time	515
I19	05 Mar 2018	Comments	none
I19	12 Mar 2018	Depth (m)	11
I19	12 Mar 2018	Arrive Time	1225
I19	12 Mar 2018	Depart Time	1231
I19	12 Mar 2018	Air Temp (C)	16
I19	12 Mar 2018	Weather	Haze
I19	12 Mar 2018	Visibility (mi)	6
I19	12 Mar 2018	Wind Speed (kts)	10
I19	12 Mar 2018	Wind Dir	NW
I19	12 Mar 2018	Water Color	Brownish-Green
I19	12 Mar 2018	Wave Ht Low (ft)	3
I19	12 Mar 2018	Wave Period (sec)	11
I19	12 Mar 2018	Sea State	Light chop
I19	12 Mar 2018	High Tide (ft)	4.5
I19	12 Mar 2018	High Tide Time	645
I19	12 Mar 2018	Low Tide (ft)	2.17
I19	12 Mar 2018	Low Tide Time	1253
I19	12 Mar 2018	Comments	12 Greebs on station
I19	19 Mar 2018	Depth (m)	12
I19	19 Mar 2018	Arrive Time	1233
I19	19 Mar 2018	Depart Time	1236
I19	19 Mar 2018	Air Temp (C)	14
I19	19 Mar 2018	Weather	Partly Cloudy
I19	19 Mar 2018	Visibility (mi)	12
I19	19 Mar 2018	Wind Speed (kts)	9
I19	19 Mar 2018	Wind Dir	NW
I19	19 Mar 2018	Water Color	Greenish-Blue
I19	19 Mar 2018	Wave Ht Low (ft)	3
I19	19 Mar 2018	Wave Period (sec)	9
I19	19 Mar 2018	Sea State	Calm
I19	19 Mar 2018	High Tide (ft)	4.64
I19	19 Mar 2018	High Tide Time	1055
I19	19 Mar 2018	Low Tide (ft)	0.22

Station	Date	Parameter	Value
I19	19 Mar 2018	Low Tide Time	457
I19	19 Mar 2018	Comments	Birds on station
I19	26 Mar 2018	Depth (m)	11
I19	26 Mar 2018	Arrive Time	1206
I19	26 Mar 2018	Depart Time	1209
I19	26 Mar 2018	Air Temp (C)	13
I19	26 Mar 2018	Weather	Partly Cloudy
I19	26 Mar 2018	Visibility (mi)	5
I19	26 Mar 2018	Wind Speed (kts)	7
I19	26 Mar 2018	Wind Dir	S
I19	26 Mar 2018	Water Color	Greenish-Brown
I19	26 Mar 2018	Wave Ht Low (ft)	7
I19	26 Mar 2018	Wave Period (sec)	9
I19	26 Mar 2018	Sea State	Confused swell
I19	26 Mar 2018	High Tide (ft)	4.85
I19	26 Mar 2018	High Tide Time	533
I19	26 Mar 2018	Low Tide (ft)	-0.49
I19	26 Mar 2018	Low Tide Time	53
I19	26 Mar 2018	Comments	>25 common grebe on station
I24	05 Mar 2018	Depth (m)	11
I24	05 Mar 2018	Arrive Time	1204
I24	05 Mar 2018	Depart Time	1207
I24	05 Mar 2018	Air Temp (C)	15
I24	05 Mar 2018	Weather	Haze
I24	05 Mar 2018	Visibility (mi)	12
I24	05 Mar 2018	Wind Speed (kts)	12
I24	05 Mar 2018	Wind Dir	NW
I24	05 Mar 2018	Water Color	Greenish-Blue
I24	05 Mar 2018	Wave Ht Low (ft)	3
I24	05 Mar 2018	Wave Period (sec)	13
I24	05 Mar 2018	Sea State	Light chop
I24	05 Mar 2018	High Tide (ft)	4.23
I24	05 Mar 2018	High Tide Time	1108
I24	05 Mar 2018	Low Tide (ft)	0.51
I24	05 Mar 2018	Low Tide Time	515
I24	05 Mar 2018	Comments	none
I24	12 Mar 2018	Depth (m)	10
I24	12 Mar 2018	Arrive Time	1251
I24	12 Mar 2018	Depart Time	1256
I24	12 Mar 2018	Air Temp (C)	16
I24	12 Mar 2018	Weather	Haze
I24	12 Mar 2018	Visibility (mi)	6
I24	12 Mar 2018	Wind Speed (kts)	8
I24	12 Mar 2018	Wind Dir	NW
I24	12 Mar 2018	Water Color	Brownish-Green
I24	12 Mar 2018	Wave Ht Low (ft)	3
I24	12 Mar 2018	Wave Period (sec)	11
I24	12 Mar 2018	Sea State	Light chop
I24	12 Mar 2018	High Tide (ft)	4.5
I24	12 Mar 2018	High Tide Time	645
I24	12 Mar 2018	Low Tide (ft)	2.17
I24	12 Mar 2018	Low Tide Time	1253

Station	Date	Parameter	Value
I24	12 Mar 2018	Comments	none
I24	19 Mar 2018	Depth (m)	12
I24	19 Mar 2018	Arrive Time	1259
I24	19 Mar 2018	Depart Time	1303
I24	19 Mar 2018	Air Temp (C)	14
I24	19 Mar 2018	Weather	Partly Cloudy
I24	19 Mar 2018	Visibility (mi)	12
I24	19 Mar 2018	Wind Speed (kts)	8
I24	19 Mar 2018	Wind Dir	NW
I24	19 Mar 2018	Water Color	Greenish-Brown
I24	19 Mar 2018	Wave Ht Low (ft)	3
I24	19 Mar 2018	Wave Period (sec)	9
I24	19 Mar 2018	Sea State	Calm
I24	19 Mar 2018	High Tide (ft)	4.64
I24	19 Mar 2018	High Tide Time	1055
I24	19 Mar 2018	Low Tide (ft)	0.22
I24	19 Mar 2018	Low Tide Time	457
I24	19 Mar 2018	Comments	none
I24	26 Mar 2018	Depth (m)	10
I24	26 Mar 2018	Arrive Time	1226
I24	26 Mar 2018	Depart Time	1229
I24	26 Mar 2018	Air Temp (C)	13
I24	26 Mar 2018	Weather	Partly Cloudy
I24	26 Mar 2018	Visibility (mi)	5
I24	26 Mar 2018	Wind Speed (kts)	7
I24	26 Mar 2018	Wind Dir	SW
I24	26 Mar 2018	Water Color	Greenish-Brown
I24	26 Mar 2018	Wave Ht Low (ft)	6
I24	26 Mar 2018	Wave Period (sec)	7
I24	26 Mar 2018	Sea State	Light chop
I24	26 Mar 2018	High Tide (ft)	4.85
I24	26 Mar 2018	High Tide Time	533
I24	26 Mar 2018	Low Tide (ft)	-0.49
I24	26 Mar 2018	Low Tide Time	53
I24	26 Mar 2018	Comments	none
I25	05 Mar 2018	Depth (m)	11
I25	05 Mar 2018	Arrive Time	1212
I25	05 Mar 2018	Depart Time	1217
I25	05 Mar 2018	Air Temp (C)	14
I25	05 Mar 2018	Weather	Haze
I25	05 Mar 2018	Visibility (mi)	12
I25	05 Mar 2018	Wind Speed (kts)	10
I25	05 Mar 2018	Wind Dir	W
I25	05 Mar 2018	Water Color	Greenish-Blue
I25	05 Mar 2018	Wave Ht Low (ft)	3
I25	05 Mar 2018	Wave Period (sec)	13
I25	05 Mar 2018	Sea State	Confused swell
I25	05 Mar 2018	High Tide (ft)	4.23
I25	05 Mar 2018	High Tide Time	1108
I25	05 Mar 2018	Low Tide (ft)	0.51
I25	05 Mar 2018	Low Tide Time	515
I25	05 Mar 2018	Comments	none

Station	Date	Parameter	Value
I25	12 Mar 2018	Depth (m)	9
I25	12 Mar 2018	Arrive Time	1300
I25	12 Mar 2018	Depart Time	1305
I25	12 Mar 2018	Air Temp (C)	15
I25	12 Mar 2018	Weather	Haze
I25	12 Mar 2018	Visibility (mi)	6
I25	12 Mar 2018	Wind Speed (kts)	9
I25	12 Mar 2018	Wind Dir	NW
I25	12 Mar 2018	Water Color	Brownish-Green
I25	12 Mar 2018	Wave Ht Low (ft)	3
I25	12 Mar 2018	Wave Period (sec)	11
I25	12 Mar 2018	Sea State	Light chop
I25	12 Mar 2018	High Tide (ft)	4.5
I25	12 Mar 2018	High Tide Time	645
I25	12 Mar 2018	Low Tide (ft)	2.17
I25	12 Mar 2018	Low Tide Time	1253
I25	12 Mar 2018	Comments	none
I25	19 Mar 2018	Depth (m)	10
I25	19 Mar 2018	Arrive Time	1308
I25	19 Mar 2018	Depart Time	1311
I25	19 Mar 2018	Air Temp (C)	14
I25	19 Mar 2018	Weather	Partly Cloudy
I25	19 Mar 2018	Visibility (mi)	12
I25	19 Mar 2018	Wind Speed (kts)	9
I25	19 Mar 2018	Wind Dir	NW
I25	19 Mar 2018	Water Color	Greenish-Brown
I25	19 Mar 2018	Wave Ht Low (ft)	3
I25	19 Mar 2018	Wave Period (sec)	9
I25	19 Mar 2018	Sea State	Calm
I25	19 Mar 2018	High Tide (ft)	4.64
I25	19 Mar 2018	High Tide Time	1055
I25	19 Mar 2018	Low Tide (ft)	0.22
I25	19 Mar 2018	Low Tide Time	457
I25	19 Mar 2018	Comments	none
I25	26 Mar 2018	Depth (m)	9
I25	26 Mar 2018	Arrive Time	1233
I25	26 Mar 2018	Depart Time	1236
I25	26 Mar 2018	Air Temp (C)	13
I25	26 Mar 2018	Weather	Partly Cloudy
I25	26 Mar 2018	Visibility (mi)	5
I25	26 Mar 2018	Wind Speed (kts)	6
I25	26 Mar 2018	Wind Dir	S
I25	26 Mar 2018	Water Color	Greenish-Brown
I25	26 Mar 2018	Wave Ht Low (ft)	6
I25	26 Mar 2018	Wave Period (sec)	7
I25	26 Mar 2018	Sea State	Light chop
I25	26 Mar 2018	High Tide (ft)	4.85
I25	26 Mar 2018	High Tide Time	533
I25	26 Mar 2018	Low Tide (ft)	-0.49
I25	26 Mar 2018	Low Tide Time	53
I25	26 Mar 2018	Comments	none

Station	Date	Parameter	Value
I26	05 Mar 2018	Depth (m)	10
I26	05 Mar 2018	Arrive Time	1227
I26	05 Mar 2018	Depart Time	1230
I26	05 Mar 2018	Air Temp (C)	15
I26	05 Mar 2018	Weather	Haze
I26	05 Mar 2018	Visibility (mi)	12
I26	05 Mar 2018	Wind Speed (kts)	12
I26	05 Mar 2018	Wind Dir	NW
I26	05 Mar 2018	Water Color	Greenish-Blue
I26	05 Mar 2018	Wave Ht Low (ft)	3
I26	05 Mar 2018	Wave Period (sec)	13
I26	05 Mar 2018	Sea State	Confused swell
I26	05 Mar 2018	High Tide (ft)	4.23
I26	05 Mar 2018	High Tide Time	1108
I26	05 Mar 2018	Low Tide (ft)	0.51
I26	05 Mar 2018	Low Tide Time	515
I26	05 Mar 2018	Comments	none
I26	12 Mar 2018	Depth (m)	9
I26	12 Mar 2018	Arrive Time	1311
I26	12 Mar 2018	Depart Time	1323
I26	12 Mar 2018	Air Temp (C)	15
I26	12 Mar 2018	Weather	Haze
I26	12 Mar 2018	Visibility (mi)	6
I26	12 Mar 2018	Wind Speed (kts)	10
I26	12 Mar 2018	Wind Dir	W
I26	12 Mar 2018	Water Color	Brownish-Green
I26	12 Mar 2018	Wave Ht Low (ft)	3
I26	12 Mar 2018	Wave Period (sec)	11
I26	12 Mar 2018	Sea State	Light chop
I26	12 Mar 2018	High Tide (ft)	4.5
I26	12 Mar 2018	High Tide Time	645
I26	12 Mar 2018	Low Tide (ft)	2.17
I26	12 Mar 2018	Low Tide Time	1253
I26	12 Mar 2018	Comments	none
I26	19 Mar 2018	Depth (m)	11
I26	19 Mar 2018	Arrive Time	1320
I26	19 Mar 2018	Depart Time	1323
I26	19 Mar 2018	Air Temp (C)	14
I26	19 Mar 2018	Weather	Partly Cloudy
I26	19 Mar 2018	Visibility (mi)	12
I26	19 Mar 2018	Wind Speed (kts)	11
I26	19 Mar 2018	Wind Dir	NW
I26	19 Mar 2018	Water Color	Greenish-Brown
I26	19 Mar 2018	Wave Ht Low (ft)	3
I26	19 Mar 2018	Wave Period (sec)	9
I26	19 Mar 2018	Sea State	Calm
I26	19 Mar 2018	High Tide (ft)	4.64
I26	19 Mar 2018	High Tide Time	1055
I26	19 Mar 2018	Low Tide (ft)	0.22
I26	19 Mar 2018	Low Tide Time	457
I26	19 Mar 2018	Comments	none
I26	26 Mar 2018	Depth (m)	9

Station	Date	Parameter	Value
I26	26 Mar 2018	Arrive Time	1243
I26	26 Mar 2018	Depart Time	1246
I26	26 Mar 2018	Air Temp (C)	14
I26	26 Mar 2018	Weather	Partly Cloudy
I26	26 Mar 2018	Visibility (mi)	5
I26	26 Mar 2018	Wind Speed (kts)	6
I26	26 Mar 2018	Wind Dir	S
I26	26 Mar 2018	Water Color	Greenish-Brown
I26	26 Mar 2018	Wave Ht Low (ft)	6
I26	26 Mar 2018	Wave Period (sec)	7
I26	26 Mar 2018	Sea State	Light chop
I26	26 Mar 2018	High Tide (ft)	4.85
I26	26 Mar 2018	High Tide Time	533
I26	26 Mar 2018	Low Tide (ft)	-0.49
I26	26 Mar 2018	Low Tide Time	53
I26	26 Mar 2018	Comments	none
I32	05 Mar 2018	Depth (m)	11
I32	05 Mar 2018	Arrive Time	1240
I32	05 Mar 2018	Depart Time	1253
I32	05 Mar 2018	Air Temp (C)	15
I32	05 Mar 2018	Weather	Haze
I32	05 Mar 2018	Visibility (mi)	12
I32	05 Mar 2018	Wind Speed (kts)	15
I32	05 Mar 2018	Wind Dir	W
I32	05 Mar 2018	Water Color	Greenish-Blue
I32	05 Mar 2018	Wave Ht Low (ft)	3
I32	05 Mar 2018	Wave Period (sec)	13
I32	05 Mar 2018	Sea State	Confused swell
I32	05 Mar 2018	High Tide (ft)	4.23
I32	05 Mar 2018	High Tide Time	1108
I32	05 Mar 2018	Low Tide (ft)	0.51
I32	05 Mar 2018	Low Tide Time	515
I32	05 Mar 2018	Comments	none
I32	12 Mar 2018	Depth (m)	10
I32	12 Mar 2018	Arrive Time	1331
I32	12 Mar 2018	Depart Time	1336
I32	12 Mar 2018	Air Temp (C)	15
I32	12 Mar 2018	Weather	Haze
I32	12 Mar 2018	Visibility (mi)	6
I32	12 Mar 2018	Wind Speed (kts)	10
I32	12 Mar 2018	Wind Dir	NW
I32	12 Mar 2018	Water Color	Brownish-Green
I32	12 Mar 2018	Wave Ht Low (ft)	3
I32	12 Mar 2018	Wave Period (sec)	11
I32	12 Mar 2018	Sea State	Light chop
I32	12 Mar 2018	High Tide (ft)	4.5
I32	12 Mar 2018	High Tide Time	645
I32	12 Mar 2018	Low Tide (ft)	2.17
I32	12 Mar 2018	Low Tide Time	1253
I32	12 Mar 2018	Comments	none
I32	19 Mar 2018	Depth (m)	11
I32	19 Mar 2018	Arrive Time	1336

Station	Date	Parameter	Value
I32	19 Mar 2018	Depart Time	1340
I32	19 Mar 2018	Air Temp (C)	14
I32	19 Mar 2018	Weather	Partly Cloudy
I32	19 Mar 2018	Visibility (mi)	12
I32	19 Mar 2018	Wind Speed (kts)	13
I32	19 Mar 2018	Wind Dir	NW
I32	19 Mar 2018	Water Color	Greenish-Brown
I32	19 Mar 2018	Wave Ht Low (ft)	3
I32	19 Mar 2018	Wave Period (sec)	9
I32	19 Mar 2018	Sea State	Calm
I32	19 Mar 2018	High Tide (ft)	4.64
I32	19 Mar 2018	High Tide Time	1055
I32	19 Mar 2018	Low Tide (ft)	0.22
I32	19 Mar 2018	Low Tide Time	457
I32	19 Mar 2018	Comments	none
I32	26 Mar 2018	Depth (m)	10
I32	26 Mar 2018	Arrive Time	1255
I32	26 Mar 2018	Depart Time	1259
I32	26 Mar 2018	Air Temp (C)	14
I32	26 Mar 2018	Weather	Partly Cloudy
I32	26 Mar 2018	Visibility (mi)	5
I32	26 Mar 2018	Wind Speed (kts)	7
I32	26 Mar 2018	Wind Dir	SW
I32	26 Mar 2018	Water Color	Greenish-Brown
I32	26 Mar 2018	Wave Ht Low (ft)	6
I32	26 Mar 2018	Wave Period (sec)	7
I32	26 Mar 2018	Sea State	Light chop
I32	26 Mar 2018	High Tide (ft)	4.85
I32	26 Mar 2018	High Tide Time	533
I32	26 Mar 2018	Low Tide (ft)	-0.49
I32	26 Mar 2018	Low Tide Time	53
I32	26 Mar 2018	Comments	none
I39	05 Mar 2018	Depth (m)	20
I39	05 Mar 2018	Arrive Time	1112
I39	05 Mar 2018	Depart Time	1115
I39	05 Mar 2018	Air Temp (C)	15
I39	05 Mar 2018	Weather	Haze
I39	05 Mar 2018	Visibility (mi)	12
I39	05 Mar 2018	Wind Speed (kts)	11
I39	05 Mar 2018	Wind Dir	NW
I39	05 Mar 2018	Water Color	Greenish-Blue
I39	05 Mar 2018	Wave Ht Low (ft)	3
I39	05 Mar 2018	Wave Period (sec)	13
I39	05 Mar 2018	Sea State	Light chop
I39	05 Mar 2018	High Tide (ft)	4.23
I39	05 Mar 2018	High Tide Time	1108
I39	05 Mar 2018	Low Tide (ft)	0.51
I39	05 Mar 2018	Low Tide Time	515
I39	05 Mar 2018	Comments	none
I39	12 Mar 2018	Depth (m)	19
I39	12 Mar 2018	Arrive Time	1203
I39	12 Mar 2018	Depart Time	1208

Station	Date	Parameter	Value
I39	12 Mar 2018	Air Temp (C)	16
I39	12 Mar 2018	Weather	Haze
I39	12 Mar 2018	Visibility (mi)	6
I39	12 Mar 2018	Wind Speed (kts)	8
I39	12 Mar 2018	Wind Dir	NW
I39	12 Mar 2018	Water Color	Brownish-Green
I39	12 Mar 2018	Wave Ht Low (ft)	3
I39	12 Mar 2018	Wave Period (sec)	11
I39	12 Mar 2018	Sea State	Light chop
I39	12 Mar 2018	High Tide (ft)	4.5
I39	12 Mar 2018	High Tide Time	645
I39	12 Mar 2018	Low Tide (ft)	2.17
I39	12 Mar 2018	Low Tide Time	1253
I39	12 Mar 2018	Comments	none
I39	19 Mar 2018	Depth (m)	20
I39	19 Mar 2018	Arrive Time	1208
I39	19 Mar 2018	Depart Time	1212
I39	19 Mar 2018	Air Temp (C)	14
I39	19 Mar 2018	Weather	Partly Cloudy
I39	19 Mar 2018	Visibility (mi)	12
I39	19 Mar 2018	Wind Speed (kts)	5
I39	19 Mar 2018	Wind Dir	NW
I39	19 Mar 2018	Water Color	Greenish-Blue
I39	19 Mar 2018	Wave Ht Low (ft)	3
I39	19 Mar 2018	Wave Period (sec)	9
I39	19 Mar 2018	Sea State	Calm
I39	19 Mar 2018	High Tide (ft)	4.64
I39	19 Mar 2018	High Tide Time	1055
I39	19 Mar 2018	Low Tide (ft)	0.22
I39	19 Mar 2018	Low Tide Time	457
I39	19 Mar 2018	Comments	none
I39	26 Mar 2018	Depth (m)	18
I39	26 Mar 2018	Arrive Time	1142
I39	26 Mar 2018	Depart Time	1146
I39	26 Mar 2018	Air Temp (C)	13
I39	26 Mar 2018	Weather	Partly Cloudy
I39	26 Mar 2018	Visibility (mi)	5
I39	26 Mar 2018	Wind Speed (kts)	7
I39	26 Mar 2018	Wind Dir	SE
I39	26 Mar 2018	Water Color	Greenish-Brown
I39	26 Mar 2018	Wave Ht Low (ft)	7
I39	26 Mar 2018	Wave Period (sec)	9
I39	26 Mar 2018	Sea State	Confused swell
I39	26 Mar 2018	High Tide (ft)	4.85
I39	26 Mar 2018	High Tide Time	533
I39	26 Mar 2018	Low Tide (ft)	-0.49
I39	26 Mar 2018	Low Tide Time	53
I39	26 Mar 2018	Comments	none
I40	05 Mar 2018	Depth (m)	11
I40	05 Mar 2018	Arrive Time	1149
I40	05 Mar 2018	Depart Time	1202
I40	05 Mar 2018	Air Temp (C)	15

Station	Date	Parameter	Value
I40	05 Mar 2018	Weather	Haze
I40	05 Mar 2018	Visibility (mi)	12
I40	05 Mar 2018	Wind Speed (kts)	13
I40	05 Mar 2018	Wind Dir	W
I40	05 Mar 2018	Water Color	Greenish-Blue
I40	05 Mar 2018	Wave Ht Low (ft)	3
I40	05 Mar 2018	Wave Period (sec)	13
I40	05 Mar 2018	Sea State	Light chop
I40	05 Mar 2018	High Tide (ft)	4.23
I40	05 Mar 2018	High Tide Time	1108
I40	05 Mar 2018	Low Tide (ft)	0.51
I40	05 Mar 2018	Low Tide Time	515
I40	05 Mar 2018	Comments	none
I40	12 Mar 2018	Depth (m)	10
I40	12 Mar 2018	Arrive Time	1239
I40	12 Mar 2018	Depart Time	1246
I40	12 Mar 2018	Air Temp (C)	15
I40	12 Mar 2018	Weather	Haze
I40	12 Mar 2018	Visibility (mi)	6
I40	12 Mar 2018	Wind Speed (kts)	10
I40	12 Mar 2018	Wind Dir	NW
I40	12 Mar 2018	Water Color	Brownish-Green
I40	12 Mar 2018	Wave Ht Low (ft)	3
I40	12 Mar 2018	Wave Period (sec)	11
I40	12 Mar 2018	Sea State	Light chop
I40	12 Mar 2018	High Tide (ft)	4.5
I40	12 Mar 2018	High Tide Time	645
I40	12 Mar 2018	Low Tide (ft)	2.17
I40	12 Mar 2018	Low Tide Time	1253
I40	12 Mar 2018	Comments	none
I40	19 Mar 2018	Depth (m)	12
I40	19 Mar 2018	Arrive Time	1248
I40	19 Mar 2018	Depart Time	1251
I40	19 Mar 2018	Air Temp (C)	14
I40	19 Mar 2018	Weather	Partly Cloudy
I40	19 Mar 2018	Visibility (mi)	12
I40	19 Mar 2018	Wind Speed (kts)	9
I40	19 Mar 2018	Wind Dir	NW
I40	19 Mar 2018	Water Color	Greenish-Blue
I40	19 Mar 2018	Wave Ht Low (ft)	3
I40	19 Mar 2018	Wave Period (sec)	9
I40	19 Mar 2018	Sea State	Calm
I40	19 Mar 2018	High Tide (ft)	4.64
I40	19 Mar 2018	High Tide Time	1055
I40	19 Mar 2018	Low Tide (ft)	0.22
I40	19 Mar 2018	Low Tide Time	457
I40	19 Mar 2018	Comments	Birds on station
I40	26 Mar 2018	Depth (m)	10
I40	26 Mar 2018	Arrive Time	1217
I40	26 Mar 2018	Depart Time	1220
I40	26 Mar 2018	Air Temp (C)	13
I40	26 Mar 2018	Weather	Partly Cloudy

Station	Date	Parameter	Value
I40	26 Mar 2018	Visibility (mi)	5
I40	26 Mar 2018	Wind Speed (kts)	8
I40	26 Mar 2018	Wind Dir	S
I40	26 Mar 2018	Water Color	Greenish-Brown
I40	26 Mar 2018	Wave Ht Low (ft)	6
I40	26 Mar 2018	Wave Period (sec)	7
I40	26 Mar 2018	Sea State	Light chop
I40	26 Mar 2018	High Tide (ft)	4.85
I40	26 Mar 2018	High Tide Time	533
I40	26 Mar 2018	Low Tide (ft)	-0.49
I40	26 Mar 2018	Low Tide Time	53
I40	26 Mar 2018	Comments	none

Table 3.10

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

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma-t$)	Chlor ($\mu\text{g/L}$)
I19	05 Mar 2018	1	14.28	70.51	7.5	33.46	8.0	24.9	0.71
	05 Mar 2018	2	14.26	70.38	7.5	33.46	8.0	24.9	0.71
	05 Mar 2018	3	14.07	70.16	7.4	33.47	8.0	25.0	0.87
	05 Mar 2018	4	13.87	70.70	7.0	33.47	8.0	25.0	1.03
	05 Mar 2018	5	13.30	72.56	6.6	33.49	8.0	25.2	1.01
	05 Mar 2018	6	13.02	74.33	6.3	33.49	8.0	25.2	0.96
	05 Mar 2018	7	12.76	76.20	6.2	33.51	7.9	25.3	1.01
	05 Mar 2018	8	12.69	77.14	6.0	33.50	7.9	25.3	1.03
	05 Mar 2018	9	12.64	75.82	6.0	33.50	7.9	25.3	1.15
	05 Mar 2018	10	12.62	73.33	5.9	33.50	7.9	25.3	1.30
I19	12 Mar 2018	1	15.72	59.57	9.4	33.32	8.2	24.5	2.41
	12 Mar 2018	2	15.57	59.18	9.2	33.33	8.2	24.6	2.96
	12 Mar 2018	3	15.27	58.17	9.1	33.34	8.2	24.6	4.89
	12 Mar 2018	4	15.08	56.92	9.2	33.35	8.2	24.7	7.57
	12 Mar 2018	5	14.76	57.43	9.8	33.39	8.2	24.8	9.54
	12 Mar 2018	6	14.53	60.27	10.2	33.42	8.2	24.9	10.73
	12 Mar 2018	7	14.33	64.68	10.1	33.43	8.2	24.9	9.54
	12 Mar 2018	8	14.30	67.49	9.9	33.42	8.2	24.9	8.21
	12 Mar 2018	9	14.22	67.70	9.9	33.43	8.2	24.9	9.44
	12 Mar 2018	10	14.16	65.61	9.7	33.43	8.2	24.9	9.16
I19	19 Mar 2018	1	14.12	71.26	7.5	33.44	8.0	25.0	1.02
	19 Mar 2018	2	14.08	70.89	7.4	33.45	8.0	25.0	1.09
	19 Mar 2018	3	13.55	70.82	7.0	33.52	8.0	25.1	1.37
	19 Mar 2018	4	13.26	71.95	6.6	33.52	8.0	25.2	1.48
	19 Mar 2018	5	12.97	72.76	6.2	33.53	8.0	25.3	1.59
	19 Mar 2018	6	12.80	73.14	6.0	33.52	7.9	25.3	1.73
	19 Mar 2018	7	12.43	74.04	5.8	33.55	7.9	25.4	1.79
	19 Mar 2018	8	12.19	77.07	5.7	33.55	7.9	25.4	1.67
	19 Mar 2018	9	12.14	76.68	5.5	33.54	7.9	25.4	1.64
	19 Mar 2018	10	12.08	71.81	5.3	33.55	7.9	25.4	1.89
I19	26 Mar 2018	1	14.22	67.04	9.1	33.55	8.1	25.0	1.54
	26 Mar 2018	2	14.25	67.27	9.1	33.55	8.1	25.0	1.55
	26 Mar 2018	3	14.16	66.46	9.0	33.55	8.1	25.0	1.81
	26 Mar 2018	4	13.94	61.17	8.8	33.57	8.1	25.1	2.43
	26 Mar 2018	5	13.48	59.50	8.3	33.57	8.1	25.2	3.83
	26 Mar 2018	6	13.09	59.27	7.8	33.54	8.0	25.2	4.34
	26 Mar 2018	7	12.64	62.98	7.0	33.58	8.0	25.4	4.12
	26 Mar 2018	8	12.07	71.06	6.1	33.56	7.9	25.5	3.69
	26 Mar 2018	9	11.78	27.84	5.2	33.56	7.9	25.5	3.47
	26 Mar 2018	10	11.75	9.21	4.6	33.55	7.8	25.5	3.95
I24	05 Mar 2018	1	14.03	68.56	7.6	33.50	8.0	25.0	1.00
	05 Mar 2018	2	13.94	69.47	7.4	33.50	8.0	25.0	1.14
	05 Mar 2018	3	13.78	68.44	7.2	33.49	8.0	25.1	1.28
	05 Mar 2018	4	13.73	66.61	7.0	33.49	8.0	25.1	1.41
	05 Mar 2018	5	13.40	67.41	6.6	33.50	8.0	25.2	1.50
	05 Mar 2018	6	13.19	59.24	6.3	33.48	8.0	25.2	1.74
	05 Mar 2018	7	13.19	55.07	6.2	33.47	7.9	25.2	1.76

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I24	05 Mar 2018	8	13.19	51.28	6.2	33.47	7.9	25.2	1.85
I24	05 Mar 2018	9	13.19	51.48	6.2	33.47	7.9	25.2	1.95
I24	05 Mar 2018	10	13.19	50.31	6.2	33.47	7.9	25.2	1.89
I24	05 Mar 2018	11	13.19	49.69	6.2	33.47	7.9	25.2	1.86
I24	12 Mar 2018	1	15.74	58.13	10.0	33.30	8.2	24.5	2.98
I24	12 Mar 2018	2	15.71	57.99	9.9	33.31	8.2	24.5	3.17
I24	12 Mar 2018	3	15.35	57.80	10.0	33.38	8.2	24.6	4.13
I24	12 Mar 2018	4	15.24	59.69	10.1	33.39	8.2	24.7	5.73
I24	12 Mar 2018	5	15.16	63.12	10.0	33.41	8.2	24.7	7.03
I24	12 Mar 2018	6	14.91	67.87	10.0	33.46	8.2	24.8	6.96
I24	12 Mar 2018	7	14.79	68.81	10.2	33.44	8.2	24.8	6.86
I24	12 Mar 2018	8	14.73	68.46	10.2	33.43	8.2	24.8	7.75
I24	12 Mar 2018	9	14.63	67.24	10.2	33.41	8.2	24.8	8.21
I24	12 Mar 2018	10	14.50	62.62	10.0	33.41	8.2	24.9	11.74
I24	12 Mar 2018	11	14.47	60.18	9.9	33.43	8.2	24.9	12.05
I24	19 Mar 2018	1	13.84	67.04	7.5	33.32	8.0	24.9	1.62
I24	19 Mar 2018	2	13.72	66.93	7.4	33.36	8.0	25.0	1.73
I24	19 Mar 2018	3	13.56	66.74	7.2	33.45	8.0	25.1	1.92
I24	19 Mar 2018	4	13.31	69.18	7.0	33.51	8.0	25.2	2.35
I24	19 Mar 2018	5	13.23	71.06	6.8	33.50	8.0	25.2	2.58
I24	19 Mar 2018	6	13.19	72.51	6.8	33.49	8.0	25.2	2.83
I24	19 Mar 2018	7	12.91	73.25	6.4	33.55	8.0	25.3	2.79
I24	19 Mar 2018	8	12.53	74.45	5.9	33.55	7.9	25.4	2.47
I24	19 Mar 2018	9	12.35	70.83	5.4	33.55	7.9	25.4	2.08
I24	19 Mar 2018	10	12.23	67.47	5.2	33.55	7.9	25.4	2.00
I24	19 Mar 2018	11	12.19	65.34	5.1	33.55	7.9	25.4	1.88
I24	26 Mar 2018	1	14.23	66.99	9.3	33.54	8.2	25.0	1.90
I24	26 Mar 2018	2	14.24	66.87	9.3	33.54	8.2	25.0	1.75
I24	26 Mar 2018	3	14.16	66.40	9.3	33.55	8.2	25.0	2.62
I24	26 Mar 2018	4	13.93	63.90	9.3	33.56	8.2	25.1	4.29
I24	26 Mar 2018	5	13.75	62.27	9.2	33.56	8.2	25.1	6.62
I24	26 Mar 2018	6	13.43	60.29	8.5	33.58	8.1	25.2	9.09
I24	26 Mar 2018	7	12.56	63.10	7.4	33.58	8.0	25.4	9.41
I24	26 Mar 2018	8	12.28	70.22	6.6	33.55	8.0	25.4	7.08
I24	26 Mar 2018	9	12.26	72.64	6.3	33.53	7.9	25.4	4.95
I24	26 Mar 2018	10	12.25	72.58	6.2	33.53	7.9	25.4	3.79
I25	05 Mar 2018	1	14.23	75.81	7.8	33.48	8.1	25.0	1.02
I25	05 Mar 2018	2	14.21	74.83	7.9	33.50	8.1	25.0	0.97
I25	05 Mar 2018	3	14.25	75.31	7.8	33.50	8.1	25.0	0.97
I25	05 Mar 2018	4	14.18	75.60	7.5	33.51	8.1	25.0	1.00
I25	05 Mar 2018	5	13.58	77.06	7.0	33.54	8.0	25.1	0.99
I25	05 Mar 2018	6	12.89	79.64	6.4	33.53	8.0	25.3	0.91
I25	05 Mar 2018	7	12.66	80.99	6.1	33.52	7.9	25.3	0.81
I25	05 Mar 2018	8	12.53	81.57	6.0	33.51	7.9	25.3	0.77
I25	05 Mar 2018	9	12.52	81.90	6.0	33.51	7.9	25.3	0.66
I25	12 Mar 2018	1	15.57	55.88	10.2	33.31	8.2	24.5	3.77
I25	12 Mar 2018	2	15.51	55.57	10.2	33.33	8.2	24.6	4.03
I25	12 Mar 2018	3	15.34	55.24	10.3	33.35	8.2	24.6	4.42
I25	12 Mar 2018	4	15.14	55.68	10.3	33.38	8.2	24.7	6.97
I25	12 Mar 2018	5	15.12	61.42	10.0	33.43	8.2	24.7	8.84

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I25	12 Mar 2018	6	14.85	67.26	10.1	33.45	8.2	24.8	7.09
I25	12 Mar 2018	7	14.72	68.24	10.2	33.42	8.2	24.8	6.69
I25	12 Mar 2018	8	14.57	66.97	9.9	33.42	8.2	24.8	7.11
I25	12 Mar 2018	9	14.56	67.07	9.7	33.41	8.2	24.8	8.01
I25	19 Mar 2018	1	14.37	71.59	8.0	33.47	8.1	24.9	1.35
I25	19 Mar 2018	2	14.38	71.59	8.0	33.47	8.1	24.9	1.35
I25	19 Mar 2018	3	14.38	72.13	8.0	33.47	8.1	24.9	1.44
I25	19 Mar 2018	4	14.37	71.79	7.9	33.47	8.1	24.9	1.64
I25	19 Mar 2018	5	14.26	71.67	7.8	33.48	8.1	25.0	2.05
I25	19 Mar 2018	6	13.76	70.36	7.6	33.50	8.1	25.1	2.82
I25	19 Mar 2018	7	13.41	70.03	7.0	33.51	8.0	25.2	3.25
I25	19 Mar 2018	8	12.50	75.92	6.2	33.55	8.0	25.4	2.48
I25	19 Mar 2018	9	12.40	78.74	6.0	33.53	7.9	25.4	1.93
I25	26 Mar 2018	1	14.31	67.15	9.4	33.54	8.2	25.0	1.48
I25	26 Mar 2018	2	14.29	64.81	9.4	33.54	8.2	25.0	1.70
I25	26 Mar 2018	3	14.24	66.46	9.3	33.54	8.2	25.0	1.96
I25	26 Mar 2018	4	14.03	65.71	9.4	33.55	8.2	25.1	3.46
I25	26 Mar 2018	5	13.89	61.63	9.3	33.53	8.2	25.1	6.16
I25	26 Mar 2018	6	13.51	58.34	8.5	33.56	8.1	25.2	7.77
I25	26 Mar 2018	7	12.40	65.07	7.4	33.59	8.1	25.4	7.57
I25	26 Mar 2018	8	12.19	73.84	6.6	33.54	8.0	25.4	5.74
I25	26 Mar 2018	9	12.51	73.93	6.5	33.49	8.0	25.3	5.40
I26	05 Mar 2018	1	14.13	76.85	7.5	33.50	8.0	25.0	0.65
I26	05 Mar 2018	2	14.04	77.88	7.4	33.50	8.0	25.0	0.65
I26	05 Mar 2018	3	13.87	78.13	7.3	33.52	8.0	25.1	0.67
I26	05 Mar 2018	4	13.84	78.07	7.2	33.50	8.0	25.1	0.67
I26	05 Mar 2018	5	13.66	78.45	7.0	33.53	8.0	25.1	0.74
I26	05 Mar 2018	6	13.05	80.20	6.6	33.53	8.0	25.2	0.67
I26	05 Mar 2018	7	12.89	80.79	6.3	33.52	8.0	25.3	0.62
I26	05 Mar 2018	8	12.72	81.53	6.2	33.51	7.9	25.3	0.69
I26	05 Mar 2018	9	12.55	82.33	6.2	33.51	7.9	25.3	0.73
I26	12 Mar 2018	1	15.65	58.13	10.6	33.32	8.2	24.5	3.78
I26	12 Mar 2018	2	15.64	58.19	10.6	33.32	8.2	24.5	3.93
I26	12 Mar 2018	3	15.37	57.13	10.6	33.33	8.2	24.6	6.11
I26	12 Mar 2018	4	15.16	54.41	10.6	33.33	8.2	24.6	9.90
I26	12 Mar 2018	5	15.16	54.15	10.2	33.37	8.2	24.7	11.33
I26	12 Mar 2018	6	15.15	61.13	9.8	33.41	8.2	24.7	10.96
I26	12 Mar 2018	7	15.11	65.96	9.4	33.42	8.2	24.7	10.71
I26	12 Mar 2018	8	14.73	67.01	9.1	33.45	8.2	24.8	8.81
I26	12 Mar 2018	9	14.45	69.30	8.8	33.45	8.1	24.9	6.62
I26	19 Mar 2018	1	14.44	70.80	8.1	33.46	8.1	24.9	1.39
I26	19 Mar 2018	2	14.51	70.61	8.1	33.46	8.1	24.9	1.35
I26	19 Mar 2018	3	14.49	70.64	8.0	33.47	8.1	24.9	1.41
I26	19 Mar 2018	4	14.21	70.12	7.9	33.49	8.1	25.0	1.68
I26	19 Mar 2018	5	13.83	68.32	7.8	33.49	8.1	25.1	2.76
I26	19 Mar 2018	6	13.58	68.69	7.4	33.49	8.0	25.1	3.32
I26	19 Mar 2018	7	13.24	66.68	6.8	33.51	8.0	25.2	3.31
I26	19 Mar 2018	8	12.50	69.94	6.1	33.55	7.9	25.4	2.78
I26	19 Mar 2018	9	12.23	76.00	5.7	33.53	7.9	25.4	2.33

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I26	26 Mar 2018	1	14.23	63.73	9.5	33.55	8.2	25.0	1.81
I26	26 Mar 2018	2	14.23	62.03	9.4	33.55	8.2	25.0	1.86
I26	26 Mar 2018	3	14.08	64.14	9.5	33.55	8.2	25.1	2.67
I26	26 Mar 2018	4	14.00	63.16	9.4	33.55	8.2	25.1	4.59
I26	26 Mar 2018	5	13.66	61.79	8.6	33.56	8.2	25.1	6.73
I26	26 Mar 2018	6	12.53	66.77	7.3	33.59	8.1	25.4	7.79
I26	26 Mar 2018	7	11.76	74.27	6.1	33.58	7.9	25.5	5.29
I26	26 Mar 2018	8	11.65	74.58	5.6	33.55	7.9	25.5	3.05
I26	26 Mar 2018	9	11.89	74.51	6.0	33.55	7.9	25.5	3.38
I32	05 Mar 2018	1	13.92	68.52	7.3	33.49	8.0	25.0	1.00
I32	05 Mar 2018	2	13.93	68.05	7.2	33.49	8.0	25.0	1.11
I32	05 Mar 2018	3	13.78	68.13	7.0	33.50	8.0	25.1	1.14
I32	05 Mar 2018	4	13.33	71.22	6.8	33.51	8.0	25.2	1.21
I32	05 Mar 2018	5	13.23	76.50	6.6	33.49	8.0	25.2	1.18
I32	05 Mar 2018	6	13.20	76.52	6.6	33.49	8.0	25.2	1.17
I32	05 Mar 2018	7	13.19	75.37	6.5	33.49	8.0	25.2	1.36
I32	05 Mar 2018	8	13.17	75.76	6.5	33.49	8.0	25.2	1.55
I32	05 Mar 2018	9	13.16	76.67	6.5	33.49	8.0	25.2	1.60
I32	05 Mar 2018	10	13.16	75.76	6.5	33.49	8.0	25.2	1.91
I32	12 Mar 2018	1	15.49	55.45	10.3	33.30	8.2	24.6	5.26
I32	12 Mar 2018	2	15.51	54.77	10.3	33.30	8.2	24.6	5.20
I32	12 Mar 2018	3	15.48	54.72	10.2	33.31	8.2	24.6	5.62
I32	12 Mar 2018	4	15.28	60.97	9.9	33.42	8.2	24.7	6.68
I32	12 Mar 2018	5	15.24	66.14	9.7	33.42	8.2	24.7	7.06
I32	12 Mar 2018	6	15.20	66.77	9.7	33.42	8.2	24.7	7.38
I32	12 Mar 2018	7	15.10	66.88	9.7	33.41	8.2	24.7	7.33
I32	12 Mar 2018	8	15.03	65.76	9.6	33.40	8.2	24.7	7.64
I32	12 Mar 2018	9	14.88	64.73	9.6	33.40	8.2	24.8	7.53
I32	19 Mar 2018	1	14.28	64.43	8.2	33.47	8.1	24.9	2.68
I32	19 Mar 2018	2	14.14	64.19	8.0	33.48	8.1	25.0	2.98
I32	19 Mar 2018	3	13.93	63.99	7.9	33.49	8.1	25.0	3.59
I32	19 Mar 2018	4	13.93	64.13	7.8	33.48	8.1	25.0	4.01
I32	19 Mar 2018	5	13.80	64.29	7.5	33.49	8.0	25.1	4.00
I32	19 Mar 2018	6	13.77	62.93	7.5	33.49	8.0	25.1	3.97
I32	19 Mar 2018	7	13.77	62.61	7.4	33.49	8.0	25.1	4.00
I32	19 Mar 2018	8	13.76	61.27	7.4	33.49	8.0	25.1	3.45
I32	19 Mar 2018	9	13.76	60.91	7.3	33.49	8.0	25.1	3.23
I32	19 Mar 2018	10	13.46	55.78	7.0	33.52	8.0	25.2	2.98
I32	26 Mar 2018	1	14.23	62.64	9.4	33.51	8.2	25.0	1.74
I32	26 Mar 2018	2	14.21	64.19	9.4	33.55	8.2	25.0	1.80
I32	26 Mar 2018	3	14.07	65.26	9.4	33.56	8.2	25.1	1.96
I32	26 Mar 2018	4	13.80	63.96	9.3	33.58	8.2	25.1	3.11
I32	26 Mar 2018	5	13.41	57.14	8.9	33.58	8.1	25.2	4.63
I32	26 Mar 2018	6	13.17	51.30	8.2	33.59	8.1	25.3	6.10
I32	26 Mar 2018	7	12.38	53.85	7.0	33.64	8.0	25.5	6.57
I32	26 Mar 2018	8	11.80	47.96	5.7	33.61	7.9	25.5	4.97
I32	26 Mar 2018	9	11.68	35.20	5.0	33.57	7.8	25.5	4.07
I32	26 Mar 2018	10	11.84	33.53	5.0	33.53	7.8	25.5	3.57
I39	05 Mar 2018	1	14.11	78.94	8.0	33.50	8.1	25.0	0.76
I39	05 Mar 2018	2	14.13	78.62	8.0	33.50	8.1	25.0	0.75

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens ($\sigma-t$)	Chlor ($\mu\text{g/L}$)
I39	05 Mar 2018	3	14.12	78.53	8.0	33.50	8.1	25.0	0.72
I39	05 Mar 2018	4	14.13	78.53	8.0	33.50	8.1	25.0	0.70
I39	05 Mar 2018	5	14.10	78.30	8.0	33.51	8.1	25.0	0.78
I39	05 Mar 2018	6	14.05	78.54	8.0	33.51	8.1	25.0	0.86
I39	05 Mar 2018	7	13.90	78.89	7.9	33.51	8.1	25.1	1.09
I39	05 Mar 2018	8	13.86	78.91	7.9	33.50	8.1	25.1	1.37
I39	05 Mar 2018	9	13.83	79.17	7.9	33.50	8.1	25.1	1.48
I39	05 Mar 2018	10	13.82	79.22	7.8	33.50	8.1	25.1	1.61
I39	05 Mar 2018	11	13.81	79.55	7.9	33.50	8.1	25.1	1.86
I39	05 Mar 2018	12	13.81	79.71	7.8	33.50	8.1	25.1	1.96
I39	05 Mar 2018	13	13.78	80.14	7.8	33.50	8.1	25.1	2.06
I39	05 Mar 2018	14	13.59	81.58	7.4	33.51	8.0	25.1	2.10
I39	05 Mar 2018	15	13.19	82.64	7.0	33.50	8.0	25.2	1.84
I39	05 Mar 2018	16	12.91	83.45	6.7	33.49	8.0	25.2	1.72
I39	05 Mar 2018	17	12.72	83.83	6.3	33.49	8.0	25.3	1.84
I39	05 Mar 2018	18	12.20	84.07	5.9	33.54	7.9	25.4	1.43
I39	12 Mar 2018	1	15.27	67.41	10.3	33.40	8.2	24.7	2.44
I39	12 Mar 2018	2	15.01	66.84	10.4	33.43	8.2	24.8	2.65
I39	12 Mar 2018	3	14.66	63.68	10.6	33.43	8.2	24.8	4.37
I39	12 Mar 2018	4	14.57	61.91	10.5	33.42	8.2	24.8	6.66
I39	12 Mar 2018	5	14.54	62.50	10.5	33.42	8.2	24.9	9.15
I39	12 Mar 2018	6	14.52	62.12	10.4	33.42	8.2	24.9	10.26
I39	12 Mar 2018	7	14.51	62.40	10.3	33.42	8.2	24.9	9.39
I39	12 Mar 2018	8	14.52	64.62	10.0	33.45	8.2	24.9	7.85
I39	12 Mar 2018	9	14.49	67.73	9.7	33.46	8.2	24.9	6.68
I39	12 Mar 2018	10	14.45	69.71	9.6	33.46	8.2	24.9	5.96
I39	12 Mar 2018	11	14.42	71.49	9.5	33.46	8.2	24.9	5.64
I39	12 Mar 2018	12	14.39	71.71	9.5	33.45	8.2	24.9	5.85
I39	12 Mar 2018	13	14.36	72.19	9.4	33.45	8.2	24.9	6.08
I39	12 Mar 2018	14	14.27	71.49	9.3	33.46	8.1	24.9	6.54
I39	12 Mar 2018	15	14.24	70.92	9.1	33.46	8.1	24.9	7.23
I39	12 Mar 2018	16	14.21	70.86	9.0	33.46	8.1	24.9	6.95
I39	12 Mar 2018	17	14.17	70.13	8.7	33.45	8.1	25.0	6.67
I39	12 Mar 2018	18	13.72	71.84	7.9	33.48	8.1	25.1	6.11
I39	19 Mar 2018	1	14.45	73.35	8.3	33.47	8.1	24.9	1.36
I39	19 Mar 2018	2	14.34	73.35	8.2	33.48	8.1	24.9	1.54
I39	19 Mar 2018	3	14.27	73.15	8.2	33.48	8.1	25.0	1.84
I39	19 Mar 2018	4	14.20	73.60	8.2	33.48	8.1	25.0	2.14
I39	19 Mar 2018	5	14.14	73.53	8.1	33.48	8.1	25.0	2.36
I39	19 Mar 2018	6	14.10	73.88	8.1	33.48	8.1	25.0	2.77
I39	19 Mar 2018	7	14.07	74.30	8.0	33.48	8.1	25.0	2.87
I39	19 Mar 2018	8	13.88	75.02	7.7	33.49	8.1	25.0	2.65
I39	19 Mar 2018	9	13.28	77.24	7.0	33.52	8.0	25.2	2.37
I39	19 Mar 2018	10	12.42	80.21	6.3	33.53	8.0	25.4	1.75
I39	19 Mar 2018	11	12.28	81.89	6.0	33.51	7.9	25.4	1.50
I39	19 Mar 2018	12	12.25	82.11	5.9	33.50	7.9	25.4	1.41
I39	19 Mar 2018	13	12.23	82.39	5.9	33.51	7.9	25.4	1.54
I39	19 Mar 2018	14	12.20	82.44	5.8	33.51	7.9	25.4	1.45
I39	19 Mar 2018	15	11.98	82.40	5.5	33.54	7.9	25.5	1.49
I39	19 Mar 2018	16	11.75	82.09	5.2	33.57	7.9	25.5	1.50
I39	19 Mar 2018	17	11.46	82.19	4.9	33.59	7.8	25.6	1.38
I39	19 Mar 2018	18	11.45	82.30	4.8	33.58	7.8	25.6	1.36

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (µg/L)
I39	26 Mar 2018	1	13.87	68.84	9.2	33.54	8.2	25.1	2.56
I39	26 Mar 2018	2	13.80	68.81	9.3	33.54	8.2	25.1	3.12
I39	26 Mar 2018	3	13.72	68.04	9.2	33.54	8.2	25.1	5.85
I39	26 Mar 2018	4	13.66	67.18	9.1	33.54	8.2	25.1	7.56
I39	26 Mar 2018	5	13.55	67.52	8.6	33.54	8.1	25.2	9.08
I39	26 Mar 2018	6	13.01	69.45	7.6	33.56	8.1	25.3	8.70
I39	26 Mar 2018	7	12.10	78.83	6.6	33.55	8.0	25.4	5.59
I39	26 Mar 2018	8	11.98	82.64	6.1	33.52	7.9	25.4	3.20
I39	26 Mar 2018	9	11.92	83.39	6.0	33.52	7.9	25.5	2.33
I39	26 Mar 2018	10	11.87	83.41	5.8	33.52	7.9	25.5	2.09
I39	26 Mar 2018	11	11.78	83.40	5.7	33.53	7.9	25.5	1.76
I39	26 Mar 2018	12	11.70	82.94	5.6	33.55	7.9	25.5	1.67
I39	26 Mar 2018	13	11.65	82.63	5.5	33.55	7.9	25.5	1.87
I39	26 Mar 2018	14	11.50	81.06	5.3	33.56	7.9	25.6	2.16
I39	26 Mar 2018	15	11.44	78.82	5.1	33.56	7.8	25.6	2.07
I39	26 Mar 2018	16	11.43	77.55	5.0	33.56	7.8	25.6	1.51
I39	26 Mar 2018	17	11.41	75.38	4.9	33.56	7.8	25.6	1.31
I39	26 Mar 2018	18	11.43	71.82	4.9	33.56	7.8	25.6	1.33
I40	05 Mar 2018	1	13.96	64.18	7.5	33.49	8.0	25.0	0.81
I40	05 Mar 2018	2	13.98	63.80	7.4	33.49	8.0	25.0	0.85
I40	05 Mar 2018	3	13.85	63.11	7.2	33.51	8.0	25.1	0.85
I40	05 Mar 2018	4	13.57	64.53	7.0	33.51	8.0	25.1	0.97
I40	05 Mar 2018	5	13.50	65.33	6.9	33.49	8.0	25.1	1.19
I40	05 Mar 2018	6	13.39	68.07	6.7	33.49	8.0	25.1	1.39
I40	05 Mar 2018	7	13.18	72.06	6.5	33.49	8.0	25.2	1.70
I40	05 Mar 2018	8	13.19	70.27	6.4	33.48	8.0	25.2	1.76
I40	05 Mar 2018	9	13.08	69.50	6.3	33.49	8.0	25.2	1.70
I40	05 Mar 2018	10	13.01	69.65	6.2	33.49	7.9	25.2	1.65
I40	12 Mar 2018	1	15.77	49.00	9.2	32.57	8.2	23.9	5.04
I40	12 Mar 2018	2	15.74	48.46	9.2	32.63	8.2	24.0	5.46
I40	12 Mar 2018	3	15.38	49.87	9.4	33.19	8.2	24.5	5.91
I40	12 Mar 2018	4	14.96	55.85	9.9	33.42	8.2	24.8	7.33
I40	12 Mar 2018	5	14.80	62.39	10.2	33.43	8.2	24.8	8.53
I40	12 Mar 2018	6	14.78	66.03	10.3	33.42	8.2	24.8	8.50
I40	12 Mar 2018	7	14.74	65.50	10.2	33.43	8.2	24.8	8.55
I40	12 Mar 2018	8	14.66	66.33	10.1	33.43	8.2	24.8	8.18
I40	12 Mar 2018	9	14.56	68.52	10.1	33.43	8.2	24.9	7.17
I40	12 Mar 2018	10	14.44	65.24	9.9	33.41	8.2	24.9	9.59
I40	19 Mar 2018	1	13.86	63.89	7.0	33.43	8.0	25.0	1.09
I40	19 Mar 2018	2	13.91	63.64	7.0	33.42	8.0	25.0	1.10
I40	19 Mar 2018	3	13.74	63.57	6.7	33.47	8.0	25.1	1.22
I40	19 Mar 2018	4	13.22	63.01	6.2	33.53	8.0	25.2	1.56
I40	19 Mar 2018	5	12.83	64.61	5.8	33.54	7.9	25.3	1.78
I40	19 Mar 2018	6	12.57	66.83	5.6	33.54	7.9	25.3	1.89
I40	19 Mar 2018	7	12.41	68.99	5.5	33.54	7.9	25.4	1.99
I40	19 Mar 2018	8	12.35	70.40	5.4	33.54	7.9	25.4	2.01
I40	19 Mar 2018	9	12.26	70.84	5.4	33.54	7.9	25.4	1.94
I40	19 Mar 2018	10	12.20	70.66	5.3	33.54	7.9	25.4	2.05
I40	26 Mar 2018	1	14.09	60.54	8.7	33.50	8.1	25.0	1.78
I40	26 Mar 2018	2	13.86	64.64	8.6	33.56	8.1	25.1	2.03
I40	26 Mar 2018	3	13.65	63.84	8.5	33.55	8.1	25.1	2.87

Station	Date	Depth (m)	Temp (°C)	XMS (%)	DO (mg/L)	Sal (ppt)	pH	Dens (σ-t)	Chlor (μg/L)
I40	26 Mar 2018	4	13.68	62.94	8.4	33.55	8.1	25.1	4.32
I40	26 Mar 2018	5	13.38	58.13	8.2	33.56	8.1	25.2	6.40
I40	26 Mar 2018	6	13.25	57.27	8.1	33.56	8.1	25.2	7.56
I40	26 Mar 2018	7	12.96	56.63	8.0	33.57	8.0	25.3	6.55
I40	26 Mar 2018	8	12.51	46.35	7.5	33.56	8.0	25.4	4.67
I40	26 Mar 2018	9	12.18	34.20	6.6	33.57	7.9	25.4	3.64
I40	26 Mar 2018	10	12.39	15.62	6.4	33.51	7.9	25.4	3.62

NA = not available

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APPENDIX A

Quality Assurance

Table A.1

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

Station	Date	Depth	Analyst	Procedure	Total	Fecal	Enter
I19	05 Mar 2018	6	AR	LAB DUPLICATE	6e	<2	<2
I19	12 Mar 2018	6	LMA	LAB DUPLICATE	80e	16e	12e
I19	19 Mar 2018	6	AR	LAB DUPLICATE	<2	<2	<2
I19	26 Mar 2018	6	LMA	LAB DUPLICATE	2e	<2	<2
I40	05 Mar 2018	6	AR	LAB DUPLICATE	2e	2e	2e
I40	12 Mar 2018	6	LMA	LAB DUPLICATE	140e	62	10e
I40	19 Mar 2018	6	JT	LAB DUPLICATE	16e	<2	<2
I40	26 Mar 2018	6	JT	LAB DUPLICATE	6e	<2	<2
S12	06 Mar 2018		AR	FIELD DUPLICATE	<2	<2	2e
S12	06 Mar 2018		AR	LAB DUPLICATE	<2	<2	<2
S12	13 Mar 2018		AE	FIELD DUPLICATE	4e	<2	2e
S12	13 Mar 2018		AE	LAB DUPLICATE	8e	<2	ns
S12	20 Mar 2018		JT	FIELD DUPLICATE	<2	<2	2e
S12	20 Mar 2018		JT	LAB DUPLICATE	2e	2e	<2
S12	27 Mar 2018		LMA	FIELD DUPLICATE	2e	<2	<20
S12	27 Mar 2018		JT	LAB DUPLICATE	<2	<2	6e

ns = not sampled

ND = no data

