



COUNTY OF SAN LUIS OBISPO PUBLIC HEALTH LABORATORY

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LABORATORY TEST FACT SHEET

WATER TESTING OF AMBIENT (RECREATIONAL AND OCEAN) WATER ORDER CODES: 8010, 8025, 8110, 8350, 8910

TEST DESCRIPTIONS

Total Coliforms and E. coli MPN, undiluted (Order code: 8350)

Method: Enzyme substrate—Chromogenic

Standard Methods 9223 B

This test employs the IDEXX, Inc Colilert™ Quantitray system, allowing the detection and enumeration of total coliforms by hydrolysis of ortho-nitrophenyl-β-D-galactoside and *Escherichia coli* by hydrolysis of 4-methyl-umbelliferyl-β-D-glucuronide. Enumeration results in the reporting of a Most Probable Number (MPN) and is commonly used to determine the microbial load of both the total coliforms and *E. coli*.

Reference range: Results for total coliforms and *E. coli* results range from <1 MPN to >2419.6 MPN for 100 mL of undiluted sample. Recommended limits vary by water source.

Turnaround time: 1 day

Total Coliforms and E. coli MPN, 1:10 dilution (Order code: 8025)

Method: Enzyme substrate—Chromogenic

Standard Methods 9223 B

This test employs the IDEXX, Inc Colilert™ Quantitray system, allowing the detection and enumeration of total coliforms by hydrolysis of ortho-nitrophenyl-β-D-galactoside and *Escherichia coli* by hydrolysis of 4-methyl-umbelliferyl-β-D-glucuronide. Enumeration results in the reporting of a Most Probable Number (MPN) and is commonly used to determine the microbial load of both the total coliforms and *E. coli*. This is the most commonly used test for determination of safety of recreational water.

Reference range: For marine waters used for recreation, total coliforms should be less than 10,000 MPN per 100 mL for a single sample and an average of less than 1,000 MPN for a 30-day sampling period; *E. coli* should be less than 400 MPN per 100 mL for a single sample and an average of less than 200 MPN for a 30-day sampling period.

Turnaround time: 1 day

Enterococci MPN, undiluted (Order code: 8110)

Method: Defined substrate hydrolysis—Chromogenic

Standard Methods 9230 D

This test employs the IDEXX, Inc Enterolert™ Quantitray system, allowing the detection and enumeration of Enterococci by hydrolysis of 4-methyl-umbelliferyl glucoside. Enumeration results in the reporting of a Most Probable Number (MPN) and is commonly used to determine the microbial load of enterococci, an enteric bacterium that is easily and accurately detected and enumerated in marine and brackish waters.

Reference range: Enterococci MPN should be less than 104 MPN per 100mL for a single sample and an average of less than 35 MPN for a 30-day sampling period for recreational waters to be considered safe for recreational activities, such as swimming.

Turnaround time: 1 day

Enterococci MPN, 1:10 dilution (Order code: 8010)

Method: Defined substrate hydrolysis—Chromogenic

Standard Methods 9230 D

This test employs the IDEXX, Inc Enterolert™ Quantitray system, allowing the detection and enumeration of Enterococci by hydrolysis of 4-methyl-umbelliferyl glucoside. Enumeration results in the reporting of a Most

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Probable Number (MPN) and is commonly used to determine the microbial load of enterococci, an enteric bacterium that is easily and accurately detected and enumerated in marine and brackish waters.

Reference range: Enterococci MPN should be less than 104 MPN per 100mL for single sample and less than 35 MPN for a 30-day sampling period for recreational waters to be considered safe for recreational activities, such as bathing.

Turnaround time: 1 day

Thermotolerant (Fecal) Coliforms A-1 (Order code: 8910)

Method: Multiple Tube Fermentation Test (MTF)

Standard Methods 9221 E

This test employs 15-tube A-1 medium with production of gas from lactose. Enumeration is conducted by a Most Probable Number (MPN) table and is commonly used to determine the thermotolerant (fecal) coliform count. Sample tubes are incubated at 35 °C for 3 ± 0.5 hours then at 44.5 °C for 21 ± 2 hours incubation.

Reference range: Ambient waters have varying limits based on type.

Turnaround time: 1-2 days