

FY2014 SECTION 319

ATTACHMENT A

**CITY OF SANIBEL, FL
SANIBEL SEWER SYSTEM EXPANSION PROJECT PHASE 4
MONITORING PLAN**

PROJECT: SANIBEL SEWER SYSTEM EXPANSION PROJECT PHASE 4

LEAD ORGANIZATION: City of Sanibel

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**Draft Water Quality Monitoring Plan for
Sanibel Sewer System Expansion Project Phase 4**

A surface water quality monitoring program is proposed to document improvements to water bodies on Sanibel. Samples will be collected at the monitoring locations identified on the Site Plan for Area E, Woodring Road. This area was selected because it is the largest area of the project, is surrounded by Tarpon Bay, San Carlos Bay and Ladyfinger Lake. There is public access to the adjoining water by the public road.

The monitoring program will include 3 steps: 1. Preliminary testing; 2. Two surface water locations, one for background and one for quality improvement; and 3. One for surface stormwater.

1. Preliminary Testing

The objective of monitoring the water quality benefits of the project (removal of the individual septic systems/construction of the sanitary sewer expansion) is to monitor the septic system removals and improvements to roadside swale operation and ensure its effectiveness in eliminating any wastewater leachate into the surrounding waters.

The best indication of sewage or septic leakage is Enterococcus. In natural waters it should not exceed 62 MPN/100mL. The background and compliance monitoring location will be fine-tuned by this indicator and by Fecal coliform samples.

The final locations for background and water quality improvement will be determined based on Enterococcus and Fecal coliform levels.

2. Surface Water Testing for Background & Water Quality Improvement

The 2 locations may be modified if it is determined that the groundwater flow direction is different than what was anticipated.

1. The easternmost monitoring location will be used as inflow or baseline and is assumed to not be affected by the project.
2. This westernmost monitoring location will include the following parameters and will be tested at the same time as the easternmost monitoring location.
3. The monitoring will include sampling from 7 to 10 storm events. Monitored events will be rainfall events greater than 0.20 inches and less than 1.5 inches. The treatment system monitoring will continue until such a time as the grant monitoring requirements have been met.
4. Parameters as specified below:
5. A comparison of two will help determine the water quality improvement from the removal of the septic systems.

<u>Parameter</u>	<u>Detection</u>	<u>Limit Method</u>
Total Cadmium	1 ug/l	Composite*
Total Chromium	5 ug/l	Composite*
Total Copper	5 ug/l	Composite*
Total Zinc	10 ug/l	Composite*
NO ₂ +NO ₃	0.1 mg/l	Composite*
TKN	0.3 mg/l	Composite*
Total Ammonia	0.05 mg/l	Composite*
Total N		Composite*
Total Phosphorus	0.05 mg/l	Composite*
Ortho Phosphate	0.05 mg/l	Composite*
TSS	1 mg/l	Composite*
Oil/Grease	1 mg/l	Composite*
Fecal coliform	N/A	Grab** if possible
Enterococcus	N/A	Grab

3. Stormwater Quality Testing

As a part of the installation of the sewer, road side swales and sod will be maintained or improved by grading and resodding. This BMP will also be monitored. Where there is ponding in the stormwater swales 72 hours after a stormwater event of greater than 1.5", the following parameters will be tested.

<u>Parameter</u>	<u>Detection</u>	<u>Limit Method</u>
Total Cadmium	1 ug/l	Composite*
Total Chromium	5 ug/l	Composite*
Total Copper	5 ug/l	Composite*
Total Zinc	10 ug/l	Composite*
NO2+NO3	0.1 mg/l	Composite*
TKN	0.3 mg/l	Composite*
Total Ammonia	0.05 mg/l	Composite*
Total N		Composite*
Total Phosphorus	0.05 mg/l	Composite*
Ortho Phosphate	0.05 mg/l	Composite*
TSS	1 mg/l	Composite*
Oil/Grease	1 mg/l	Composite*
Fecal coliform	N/A	Grab** if possible
Enterococcus	N/A	Grab

The water quality in the stormwater swale should show decreases over time of these parameters.

Data Processing, Validation, Analysis, and Reports

Sanibel staff will provide oversight of data tracking, data validation, data analysis, and data reports. Staff members responsible for sample collection and processing will also be required to record data that includes sample number, time, and results on the data sheets provided in the park lab. Data will be recorded on an excel spreadsheet and provided upon request.