

## CITY OF ANACORTES 2004 CSO REPORT

### GENERAL INFORMATION

The NPDES permit issued to the City of Anacortes identifies CSO's by discharge number. This report will refer to the CSO's as they are identified in the permit. The CSO's are located as identified in the following table:

<b>Discharge No.</b>	<b>Location</b>		<b>Receiving Water</b>
<b>002</b>	Northernmost end of B Avenue	Latitude: 48 30'55" Longitude: 122 38'03"	Guemes Channel
<b>003</b>	Northernmost end of M Avenue	Latitude: 48 31'14" Longitude: 122 36'56"	Guemes Channel
<b>004</b>	Northernmost end of Q Avenue	Latitude: 48 31'18" Longitude: 122 36'34"	Guemes Channel

Discharge number 002 was monitored with a Marsh-McBirney Model 256A flow meter.

The Model 256A flow meter measures level and velocity and reports flows to the treatment plant via a radio telemetry system. When the meter is active the plant control system is programmed to activate an alarm that indicates overflow at this CSO. The plant data acquisition system computes daily flow totals.

Discharge number 003 was monitored with Marsh-McBirney Model 260 portable flow meter system.

The Model 260 flow meter measures level and velocity. The level and velocity measurements are stored in the meter, in the field. The meter is periodically "uploaded" to a laptop computer. During the upload, level, velocity and error logs are transferred to the computer. The Marsh-McBirney Co. Floware for Windows version 2.80.2.8 software package was used to compute flows from this information.

The following information applies to the flow meter systems at Discharge #002 and #003:

1. The flow meter level and velocity-sensing device is located directly in the outfall pipe.
2. The flow meters detect levels in excess of 0.4 inches. In pipe flows that do not reach or exceed 0.4 inches are not measured.
3. The flow meters detect velocity only when the level is in excess of one inch. Total flow is computed from the velocity and level measurements, therefore the flow cannot be totaled unless the level in the pipe exceeds one inch.
4. The flow meters were set to record the level and velocity for 60 seconds, once every fifteen minutes.
5. Flow information is reported from 12:00 p. m. (midnight) to 11:59:59 p. m. (midnight) on the indicated day.

Discharge number 004 was monitored with a Krohne Magmeter, type IFS-4000/PF. The rate of flow measured by this meter is reported to the wastewater treatment plant via a radio telemetry system. The plant data acquisition system totals the flow data and includes the information on plant reports. A float switch also monitors this CSO. When the level in the sewer system approaches the height of the overflow weir the float is activated. This float switch activates an alarm at the wastewater treatment. Plant personnel are alerted of the impending CSO activity.

Rainfall reported is recorded at the Anacortes Wastewater Treatment Plant by a tipping bucket rain gauge. Rainfall totals are reported from 7:00 a. m. on the indicated day to 6:59:59 a. m. on the following day.

Daily flow totals for Discharge #002 and #004 are included in appendix A.

Daily flow totals for Discharge #003 are included in appendix B.

Rainfall data is included in appendix C.

Appendix D includes a map of the City of Anacortes, including wastewater pump stations identified by number.

Appendix E contains information from previous annual CSO reports and overflow information for CSO discharge #004.

Appendix F contains a copy of the public notice advertised in the Anacortes American, the City of Anacortes official newspaper of record, announcing the availability of the annual CSO report.

**DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE  
CONDITION, DISCHARGE NO. 002, "B" AVE. CSO**

**FREQUENCY and VOLUME**

As stated previously, discharge number 002 was monitored with a Marsh-McBirney Model 256A flow meter. Flow information from the meter is transmitted to the treatment plant via a radio telemetry system. Reports of this flow data are generated on a daily and monthly basis. This meter occasionally reports discharge amounts of from one to three gallons. These amounts reported are a result of noise from the flow meter or in the telemetry system. The day after this shows up on the report the flow channel has been examined and no evidence of any overflow exists.

There are no overflow events to report for 2004.

Total rainfall measured at the Anacortes Wastewater Treatment Plant in 2004 was 26.09".

Discharge from this CSO can be caused by failure of an adjacent wastewater pump (PS #3) station. No overflow events occurred in 2004 as a result of failure of PS #3. During the year 2000 significant improvements were made to PS #3. Most notably the pump station is now connected to a standby emergency power generator.

**COMPARISON TO BASELINE**

There has not been an overflow event at this CSO since 1997. Overflow events and the annual baseline are charted and included at the end of this section.

## **DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE CONDITION, DISCHARGE NO. 003, "M" AVE. CSO**

The CSO is monitored with a portable flow meter. The flow meter is routinely read on a monthly basis. A meter was in service continuously for the entire monitoring period. The hard drive on the laptop computer that is used to upload the data from the flow meter crashed. The data on the hard drive was not recoverable. The hard drive had the only record of flow meter information from January 13 to February 4, 2004. No flow data from this CSO is available for this time period. An examination of rainfall data and flow records at the wastewater treatment plant reveals that no CSO event occurred during this time period. No CSO event at the other Anacortes CSO locations occurred during this time period.

There were no overflow events in 2004.

Total rainfall measured in 2004 was 26.09"

## **COMPARISON TO BASELINE**

There has not been an overflow event at this CSO since 1997. Overflow events and the annual baseline are charted and included at the end of this section.

## **DETAIL OF FREQUENCY, VOLUME AND COMPARISON TO BASELINE CONDITION, DISCHARGE NO. 004, "Q" AVE. CSO**

Previous reports contain considerable detail explaining the history of this CSO. Reports from 1997, 1998, 1999, 2000 and 2001 are included in Appendix E; these reports explain some of the history of this CSO.

There were no overflow events in 2004.

Total rainfall measured in 2004 was 26.09"

### **COMPARISON TO BASELINE**

Flow monitoring was installed on this CSO in January of 1998. The only measured overflow event on this CSO since monitoring was installed occurred in 2003.

## **CSO REDUCTION ACCOMPLISHMENTS**

1. A storm sewer directly connected to the sanitary sewer was discovered in 1998. The storm sewer serves a three-square block area, Commercial Avenue to O Avenue (one block) and from 10<sup>th</sup> Street to 13<sup>th</sup> Street. This area is in the down town area of Anacortes and is mostly asphalt. Due to a variety of technical issues the project to repair this drainage system remains uncompleted during 2004.
2. Two manholes with excessive amount of infiltration were sealed using a chemical grout injection process.
3. Three blocks of leaking sewer pipe was replaced in the following alleys:
  4. From Q Ave to R Ave between 21st and 22nd St.
  5. From Q Ave to R Ave between 27th and 28th St.
  6. From Commercial Ave to Q Ave between 22<sup>nd</sup> and 23<sup>rd</sup> St.
7. A project was performed that replaced one block of sidewalks in the Central Business District. During this project roof drains from a large commercial building were discovered connected to the sanitary sewer. These roof drains were removed from the sanitary sewer and connected to the storm sewer.

## **PLANNED IMPROVEMENTS**

The improvements planned for 2005 are as follows:

1. Replace the sewer line in the alley between 27<sup>th</sup> and 28<sup>th</sup> St. Repair 5 leaking side sewer penetrations.
2. Remove and replace manholes #G38 and G39.
3. Replace 150 feet of leaking 6" concrete sewer line with 8' PVC.
4. Replace 285 of 6" clay sewer line on F Avenue from manhole #S107
5. Replace 6" concrete sewer line on T Avenue between 3<sup>rd</sup> and 4<sup>th</sup> St.
6. Replace 12" concrete sewer line in alley between 20<sup>th</sup> and 21<sup>st</sup> St from O Avenue to Commercial, manholes I1 to I23.
7. Another block of the Central Business District sidewalks will be replaced, and the adjacent building roof drains will be collected and diverted into the storm sewer.
8. The City of Anacortes is planning to remove the storm sewer connection at Commercial Avenue and 13<sup>th</sup> Street via a directional drilling project.