

## CITY OF ANACORTES 2003 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. 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 copies of purchasing records documenting maintenance performed on the flow meter and data acquisition system at CSO discharge #004.

Appendix G 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 2003.

Total rainfall measured at the Anacortes Wastewater Treatment Plant in 2003 was 21.13".

Discharge from this CSO can be caused by failure of an adjacent wastewater pump (PS #3) station. No overflow events occurred in 2003 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.

There were no overflow events in 2003.

Total rainfall measured in 2003 was 21.13"

### **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 are a number of days where flow is indicated on the Overflow Reports during June and July. The indicated flow is as a result of telemetry calibration problems with the flow meter system. A contractor, Technical Systems Incorporated, was hired to correct the problems with the flow meter and the associated telemetry system. After the corrections were made to the system a "live" calibration of the system was performed. Water from a City of Anacortes fire hydrant was flowed through a water flow meter, then through the CSO meter. The rate of flow measured by the water meter was checked against the rate of flow measured by the CSO meter. The flow signal was calibrated from the CSO flow meter across the telemetry system to the wastewater treatment plant data acquisition system. This procedure was performed on August 15, 2003 and resulted in a total flow of 918 gallons being reported on that day. The requisitions/purchase orders used to accomplish this work are included in Appendix F.

There was one overflow event at this CSO in 2003. The event occurred on November 18th. The event was the result of four days of rain, including a storm that caused 0.87" of rain on the day before the event and 1.64" inches of rain on the day of the overflow event. This storm caused flooding in the Skagit River. The flood event in the river was rated as a 50-year flood. The result of this rainfall caused discharge #004 to be active for 0.2 hours (approximately 12 minutes) during which a total of 648 gallons was discharged to the Guemes Channel.

Total rainfall measured in 2003 was 21.13"

### **COMPARISON TO BASELINE**

Flow monitoring was installed on this CSO in January of 1998. This is the first measured overflow event on this CSO since monitoring was installed.

## **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. The project to repair this drainage system remains uncompleted during 2003.
2. The City of Anacortes performed a slip line project that lined and effectively sealed out the infiltration in approximately 642 feet of old, damaged and leaking sanitary sewer pipe.
3. 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 2004 are as follows:

1. The City of Anacortes plans to replace, line or otherwise improve approximately 1000 feet of leaking sewer lines in 2002.
2. 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.