

City of Salisbury



MARYLAND

WASTEWATER TREATMENT BRANCH

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June 20, 2008

Mr. Dave Lyons
Acting Deputy Program Director
Maryland Department of the Environment
Water Management Administration
Compliance Program
1800 Washington Blvd; Suite 420
Baltimore, MD 21230-1708

**Re: SSO on June 17, 2008 -
21,037 gallons (estimated)**

**SSO on June 19, 2008 -
48,140 gallons (estimated)**

Dear Dave:

This letter follows to two 24-hour notification calls placed to your office, reporting the above referenced overflows. Similar notifications were made to the WCEHD.

June 17, 2008 overflow:

On June 17, 2008 we experienced an upset condition/overflow at the City Wastewater Treatment Plant (WWTP). At approximately 2:00 PM a malfunction occurred at the new Effluent Pumping Station (EPS). An automatic bypass valve opened while the Station was pumping, causing flow to recirculate back into the wet well from which it was pumped. As a result flow rose within the secondary clarifiers.

The valve should not open while the pumps within the Station are operational. It should open only if all pumps shut down and the wet well level rises to a programmed set point. This occurrence makes clear that the logic programmed within the Station/bypass valve control system is not correct (performed as part of the ENR plant Upgrade).

The purpose of the bypass valve is to provide gravity flow of the secondary clarifier effluent, if the EPS/Effluent Sand Filter system fails. By providing gravity flow through the new ultraviolet disinfection units, disinfection of the plant effluent will be provided prior to discharge to the Wicomico River.

The duration of the spill was approximately 1.25 hours ending at 3:15 PM. An estimated 21,037 gallons of secondary clarifier effluent flowed out of a manhole, damaged during Upgrade construction; into two adjacent stormwater catch basins. There was no debris present to be cleaned up in the on site ditch which the plant stormwater system flows into.

During the overflow period approximately 312,500 gallons flowed through the plant. Thus 93.3% of the total flow through the plant was treated (21,037 gallons spilled/312,500 gallons through plant = $0.067 \times 100 = 6.7\%$ spilled. $100\% \text{ flow} - 6.7\% \text{ spilled} = 93.3\% \text{ treated}$).

Plant personnel responded promptly closing manually closing the bypass valve allowing the EPS to pump the backed up flow down, stopping the overflow. Additionally, they utilized an on site pump and Vac truck to clean up an estimated 350 gallons reducing the spill by that volume.

Health Advisory signs were posted from the City to Upper Ferry, along with issuance of a press release. Three rounds of river sampling were performed by plant personnel with enterococci analysis by the Eastern Shore Regional Health Department Lab.

The first two rounds of sampling showed a geometric mean average of <35 MPN/100 ml which is the EPA acceptable limit (see attached). I will forward the last set of sample results when they are available.

June 19, 2008 overflow:

On June 19, 2008 we experienced another upset condition/overflow at the WWTP.

At approximately 1:00 AM June 19, 2008 the WWTP Operators observed water seeping from the air vents on Oxid Filter #3 (OF3). They had begun start up of this unit at 7:00PM, June 18, 2008. The influent shut off valve for these units requires 200 turns to fully close the valve, so it was several minutes before the flow could be stopped.

The flow spilled onto the ground and road bed and some of the flow went into the adjacent catch basins. Straw was placed around the catch basins to help retard the flow. A vac truck and 6" portable pump were deployed for cleanup. Mulch was spread on water ponded on the ground, for latter removal to the landfill. NIMS procedures were followed and appropriate personnel and equipment were mobilized. An estimated 35,000 gallons of spilled water was pumped to and

adjacent clarifier/removed by the vac truck) thus reducing the volume of the spill by this amount.

The cause of the backup in the OF3 was a partially closed abandoned slide gate. When the slide gate was opened, the surge of water backed up in the EPS wet well. Unfortunately due to installation errors on the wet well control system, the water surge resulted in opening of the wet well automatic by pass slide gate which allowed the effluent pump discharge to recirculate back to the pumps, thereby negating forward flow pumping. This resulted in high water levels in the effluent pumping station wet well and surcharged the pipes and manholes between the secondary clarifiers and the EPS wet well. One of the surcharged manholes did not have a secure lid, and the water flowed from this manhole since it was lower in elevation than the clarifier and the wet well. Upon recognizing the problem, the automatic slide gate was closed manually. This allowed the pumps to achieve forward flow.

All this extra forward flow went to the temporary rental by pass pumps. There are four bypass pumps set up to pump plant effluent to the chlorine contact tanks while the new effluent piping is being connected. One of the pumps had been serviced the day before. Only one pump was pumping when the flow increased, the other by pass pumps did not activate. The contractor's mechanic was called to the site to get the other by pass pumps started. He found a defective control system fuse to be the cause of the failure of the back up pump to start.

To prevent additional overflow during this period, the effluent pumps were shut down and the automatic by pass slide gate was opened so that only a normal flow rate went to the by pass pumps. Once the back up rental pump was started, the effluent pumps were restarted and the automatic by pass slide gate was manually closed. This soon resulted in pump down of the wet well and surcharged pipes and by 4:26 AM the overflow was stopped.

Although the flow that entered the storm drain system was not disinfected, its water quality in terms of clarity, BOD removal, and suspended solids removal, was better than the plant could produce prior to recent upgrading (second point of chemical addition producing on average <30 mg/l TSS).

Correction of the control system installation errors at the EPS and maintenance of the rental by pass pumps are scheduled to occur shortly. Additionally the storm drain catch basins have been sand bagged while the wet well controls are being modified; this will improve the effectiveness of response measures during the next start up attempt. All future system start ups will be planned in writing by all involved with the goal of anticipating and mitigating unintended consequences.

The duration of the spill was approximately 3 hours and 26 minutes. An estimated 48,140 gallons overflowed into two adjacent stormwater catch basins. There was no debris present to be cleaned up in the on site ditch which the plant stormwater system flows into.

During the overflow period approximately 786,806 gallons flowed through the plant. Thus 93.9% of the total flow through the plant was treated (48,140 gallons spilled/786,806 gallons through plant = $0.061 \times 100 = 6.1\%$ spilled. 100% flow - 6.1% spilled = 93.9% treated).

Health Advisory signs were posted from the City to Upper Ferry, along with issuance of a press release.

As stated above, three rounds of river sampling were performed by plant personnel with enterococci analysis by the Eastern Shore Regional Health Department Lab.

The first two rounds of sampling showed a geometric mean average of <35 MPN/100 ml which is the EPA acceptable limit (see attached). I will forward the last set of sample results when they are available.

If you have any questions, please contact me at 443-235-8970 or by email: dwinslow@ci.salisbury.md.us.

Sincerely,



David K. Winslow, Jr.
WWTB Superintendent

XC: Mr. John Pick
Mr. Jim Caldwell
Mr. Greg Stevens
Mr. Jason Joynes
Mr. Randy Denny, MDE
Mr. John Rafter, MDE
Mr. Dennis DeCintio, WCEHD

Enterococci

Wicomico River Samples									
Date	Location	No. of Pos	MPN	Date	No. of Pos	MPN	Date	No. of Pos	MPN
6/18/2008	Market St. Inn (* tide too high to obtain sample)	4	42	6/19/2008	*	*	6/20/2008	*	*
6/18/2008	After Main St. Bridge	2	20	6/19/2008	8	87	6/20/2008		
6/18/2008	Ship Yard / NSPS	3	31	6/19/2008	0	5	6/20/2008		
6/18/2008	SSPS	0	5	6/19/2008	0	5	6/20/2008		
6/18/2008	Limesilo	3	31	6/19/2008	0	5	6/20/2008		
6/18/2008	Green 45 Sign	6	64	6/19/2008	4	45	6/20/2008		
6/18/2008	Upper Ferry	6	64	6/19/2008	12	137	6/20/2008		
	Geometric Mean Average		29			20			#NUM!
			< EPA acceptable limit of 35			< EPA acceptable limit of 35			
	Analysis by: The Salisbury Branch of the State of Maryland Department of Health and Mental Hygiene Laboratory □		Green 45 Sign - sample taken after tug passed churning up bottom			Shipyards/ NSPS, SSPS & Lime silo <10.			
6/18/2008	Shumaker Pond (not part of City collection system area - single samples shown for comparison)	7	75	6/19/2008	3	31	6/20/2008		