

## VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a minor, municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge will result from the proposed operation of a municipal wastewater treatment plant. This permit action includes revised effluent limitations and special conditions in the permit.

1. Facility Name and Address: Middlesex Courthouse WWTP  
Saluda, VA 23149
- Location: Northern side of Rt.33, ¼ mile east of Courthouse Drive
2. SIC Code: 4952
3. Permit No. VA0091316 Permit Expiration Date: December 10, 2008

4. Owner Contact:  
Name: Charles Culley, Jr.  
Title: County Administrator  
Telephone No.: 804/758-4330  
Address: P.O. Box 428, Saluda, VA 23149
5. Application Complete Date: Date: June 20, 2008  
Permit Drafted By: Jeremy Kazio Date: June 24, 2008

DEQ Regional Office: Piedmont Regional Office

Reviewed By: Jaime Bauer Date: June 30, 2008  
Curt Linderman Date: August 7, 2008

6. Receiving Stream: Name: Unnamed Tributary to Urbanna Creek  
River Mile: 3-XCM000.85  
Basin: Rappahannock River  
Subbasin: N/A  
Section: 2  
Class: III  
Special Standards: None
- 1-Day, 10-Year Low Flow: 0  
7-Day, 10-Year Low Flow: 0  
30-Day, 5-Year Low Flow: 0  
Harmonic Mean Flow: 0  
Tidal? No  
On 303(d) list? No

7. Operator License Requirements: Class IV  
The recommended attendance hours by a licensed operator and the minimum daily hours that the treatment works should be manned by operating staff are contained in the Sewage Collections and Treatment Regulations (SCAT) 9 VAC 25-790-300. A class IV licensed operator is required for this facility.
8. Reliability Class: Class I  
Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. The reliability classification is based on the water quality and public health consequences of a component or system failure. The permittee is required to maintain Class I Reliability for this facility.

9. Permit Characterization:
- |   |  |
|---|--|
| <input type="checkbox"/> Issuance                 | <input type="checkbox"/> Existing Discharge                              |
| <input checked="" type="checkbox"/> Reissuance    | <input checked="" type="checkbox"/> Proposed Discharge (existing permit) |
| <input type="checkbox"/> Revoke & Reissue         | <input checked="" type="checkbox"/> Effluent Limited                     |
| <input type="checkbox"/> Owner Modification       | <input checked="" type="checkbox"/> Water Quality Limited                |
| <input type="checkbox"/> Board Modification       | <input type="checkbox"/> WET Limit                                       |
| <input type="checkbox"/> Change of Ownership/Name | <input type="checkbox"/> Interim Limits in Permit                        |
| Effective Date:                                   | <input type="checkbox"/> Interim Limits in Other Document (attached)     |
| <input checked="" type="checkbox"/> Municipal     | <input type="checkbox"/> Compliance Schedule Required                    |
| SIC Code(s): 4952                                 | <input type="checkbox"/> Site Specific WQ Criteria                       |
| <input type="checkbox"/> Industrial               | <input type="checkbox"/> Variance to WQ Standards                        |
| SIC Code(s):                                      | <input type="checkbox"/> Water Effects Ratio                             |
| <input checked="" type="checkbox"/> POTW          | <input checked="" type="checkbox"/> Discharge to 303(d) Listed Segment   |
| <input type="checkbox"/> PVOTW                    | <input type="checkbox"/> Toxics Management Program Required              |
| <input type="checkbox"/> Private                  | <input type="checkbox"/> Toxics Reduction Evaluation                     |
| <input type="checkbox"/> Federal                  | <input type="checkbox"/> Possible Interstate Effect                      |
| <input type="checkbox"/> State                    | <input type="checkbox"/> Storm Water Management Plan                     |

10. Wastewater Flow and Treatment:

Table 1

Outfall Number	Wastewater Source	Treatment	Flow
001	Commercial and residential	flow equalization, sequencing batch reactor, clarification, sludge wasting and holding, post-equalization, UV disinfection, post-aeration	39,900 gpd (0.0399 MGD) design capacity

Please note that the wastewater treatment plant has not been built or operated as of the 2008 permit reissuance application.

See **Attachment A** for facility diagrams.

11. Sludge Disposal: Waste sludge will be held in a holding tank and disposed of by a licensed contract hauler as needed.
12. Discharge Location Description: This facility discharges to an unnamed tributary to Urbanna Creek. Name of USGS topo map: Saluda topo – 123D (See **Attachment B**)
13. Material Storage: Chemicals to be used for the wastewater plant will be stored in proper containers and under roof cover.
14. Ambient Water Quality Information:  
Ambient water quality data is not needed because the receiving stream is dry at the theoretical low flows used in developing permit limitations. The receiving stream was not assessed in the 2006 or draft 2008 305(b)/303(d) Water Quality Assessment Integrated Report.
15. Antidegradation Review and Comments:  
The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.



TKN concentration. Due in part to there being such a marginal difference between the existing TKN limit (3.0 mg/L) and the speculative maximum TKN concentration needed to protect the calculated Ammonia limit, it is staff's opinion that a limitation for Ammonia should not be applied at this time and that the current TKN limitation will effectively control Ammonia toxicity. This decision is supported by the fact that Ammonia WLA's are generally calculated based on receiving stream pH and temperature, which in this case have been "borrowed" from the effluent characterization of another facility, as explained in the preceding paragraph. In order to prevent future antibacksliding issues by incorporating a limitation based on circuitous data into the 2008 permit, it is recommended that the Ammonia limitation analysis be reexamined upon permit development in 2013 using the Middlesex Courthouse WWTP's actual effluent characterization.

- **Limitation Rationale for cBOD<sub>5</sub>, TSS, DO, and Bacteria (Additional Information)**

cBOD<sub>5</sub>, TKN, TSS, and DO: Best professional judgment was used as the basis for these limitations at the recommendation of the Stream Sanitation Analysis dated May 5, 2003 by Jennifer Palmore. This analysis documents the observed characteristics of the receiving stream, which include heavy algae content and infiltration of the stream into the groundwater by way of a swallow hole. Due to these observations, the receiving stream is considered to be un-modelable by current desktop analytical methods employed by the agency. Therefore, limitations for these parameters that are considered protective of un-modelable streams were recommended for, and are incorporated into, the 2008 permit reissuance.

Fecal Coliform: Due to the proximity of this discharge to Urbanna Creek, which is considered a supportive shellfish growing habitat (or shellfish waters), this bacterial limit has been included in the 2008 permit reissuance. For sewage discharges that may reach shellfish waters, permits limit fecal coliform with an effluent limit of 200 per 100 milliliters, applied as a monthly average. Although the Water Quality Standards have been amended to remove the reference to this effluent limit in shellfish waters, the Virginia Department of Health, Bureau of Shellfish Sanitation still uses fecal coliform as an indicator for determining the quality of shellfish waters, and it is necessary to ensure discharges meet this level. Since it has historically maintained the in-stream water quality criteria for fecal coliform of 14/43 per 100 milliliters, the 200 per 100 milliliters effluent limit will be used in shellfish waters in order to continue meeting the in-stream criteria and for protection of shellfish under the general standard

E.coli: An e.coli limitation of 126N/100mL is prescribed for discharges into freshwater receiving streams (9 VAC 25-260-170.A.2). The disinfection policy of 9 VAC 25-260-170.B (Water Quality Standards) requires that all effluents attain the applicable bacteria concentrations prior to discharge. Since the method of disinfection for this facility is an approved method other than chlorination, monitoring for this parameter is once per week.

18. Basis for Sludge Use & Disposal Requirements: Not applicable, as this facility does not land apply sludge.
19. Antibacksliding: All limitations in the proposed 2008 permit reissuance are the same or more stringent than the limitations in the 2003 permit issuance with one exception: Total Residual Chlorine. This parameter has been removed from the 2008 permit reissuance because the applicant has indicated on the application that the facility will incorporate UV disinfection instead of chlorine. Because new information is available for the 2008 permit reissuance that was not available during the 2003 issuance, antibacksliding rules have not been violated.
20. Compliance Schedules  
The VPDES Permit Regulation at 9 VAC 25-31-250 allows for schedules that will lead to compliance with the Clean Water Act, the State Water Control Law, and regulations promulgated under them. However, this facility has not yet been constructed and therefore compliance schedules are not applicable for the 2008 permit reissuance.

21. Special Conditions – Part I.B:
- a. Special Condition B.1 – 95% Capacity Reopener  
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B 2 for all POTW and PVOTW permits.
  - b. Special Condition B.2 – O&M Manual Requirement  
Rationale: Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190 E.
  - c. Special Condition B.3 – Licensed Operator Requirement  
Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia § 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.), require licensure of operators.
  - d. Special Condition B.4. – Reliability Class  
Rationale: Required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.
  - e. Special Condition B.5 – Sludge Use and Disposal  
Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B 2; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.
  - f. Special Condition B.6. – Sludge Reopener  
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-220 C 4 for all permits issued to treatment works treating domestic sewage.
  - g. Special Condition B.7 – Compliance Reporting  
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limitation or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.
  - h. Special Condition B.8 – Materials Handling/Storage  
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.
  - i. Special Condition B.9 – TMDL Reopener  
Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. The TMDL reopener special condition is being included in all VPDES permits.
  - j. Special Condition B.10—Indirect Dischargers  
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 B.1 & B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
  - k. Special Condition B.11 – CTO, CTC Requirement  
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.

- I. Special Condition B.12 – Nutrient Reopener  
Rationale: 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
  
- m. Special Condition B.13 – Notice of Commencement of Discharge  
Rationale: This language is designed to clarify monitoring and reporting requirements before the commencement of discharge. Inclusion is pursuant to state-wide water permit manager consensus.
  
- 22. Part II, Conditions Applicable to All VPDES Permits  
The VPDES Permit Regulation at 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.
  
- 23. Changes to Current Permit

Table 3: Permit Processing Change Sheet

Parameter Changed		Effluent Limits Changed		Monitoring Requirement Changed		Reason for Change	Date
		From	To	From	To		
TRC	Monthly Average	0.008 mg/L	REMOVED	1/Day	REMOVED	This limitation was removed because the application for the 2008 permit reissuance indicated that the permittee plans to use alternate disinfection methods (Ultraviolet).	6/08
	Weekly Average	0.009 mg/L					
TSS	Monthly Average	10 mg/L	No Change	1/Month	No Change	Due to typographical and mathematical error during the development of 2003 permit, the weekly average concentration and loading limitations have been revised in the 2008 reissuance to reflect the correct limits for these parameters.  All loading limitations have also been revised in accordance with GM06-2016.	
		1.5 kg/d	1500 g/d				
Weekly Average	16.5 mg/L	15 mg/L					
	2.5 kg/d	2300 g/d					
cBOD <sub>5</sub>	Monthly Average	10 mg/L	No Change	1/Month	No Change	Loading limitations have been revised in accordance with GM06-2016.	
		1.5 kg/d	1500 g/d				
Weekly Average	16.5 mg/L	15 mg/L					
	2.5 kg/d	2300 g/d					
TKN	Monthly Average	3.0 mg/L	No Change	1/Month	No Change	Loading limitations have been revised in accordance with GM06-2016.	
		0.5 kg/d	450 g/d				
Weekly Average	4.5 mg/L	No Change					
	0.7 kg/d	680 g/d					
Fecal Coliform		200 N/100 mL (Geometric Mean)	200 N/100 mL	1/Month (between 10 am and 4 pm)	2/Month (between 10 am and 4 pm)	In accordance with current agency guidance (Permit Manual), permits discharging to shellfish waters are to continue to limit fecal coliform with an effluent limit of 200 per 100 milliliters, applied as a <b>monthly average</b> . The fecal coliform monitoring frequency has also been changed in accordance with current agency guidance. Sample type revised to exclude superfluous specification.	
E.Coli		--	126 N/100 mL (Geometric Mean)	--	1/Week (between 10 am and 4 pm)	Guidance memo #03-2007 augmented the fecal coliform criteria with the addition of E.Coli criteria as the standard for proof of disinfection when the discharge is to freshwater. Please see Item 17. of this fact sheet for more information concerning this limitation.	

Table 3: Permit Processing Change Sheet (continued)

<u>From</u>	<u>To</u>	<u>Special Condition Changed</u>	<u>Reason for Change</u>	<u>Date</u>
Part I.A.1.a	Part I.A.1(a)	Design Flow	No changes	6/08
--	Part I.A.1(b)	Significant digits	New, reflects current agency guidance	
Part I.A.2	Part I.A.2	Discharge of floating solids/foam	No changes	
--	Part I.A.3	Sample location	New, reflects current agency policy	
Part I.A.1.c	Part I.A.4	85% Removal for cBOD <sub>5</sub> & TSS	No changes	
--	Part I.A.5	Notification of Discharge	New, reflects state-wide water permit manager consensus.	
Part I.C.1	Part I.B.1	95% Capacity Notification	No changes	
Part I.C.2	Part I.B.2	O & M Manual	Revised to reflect current agency guidance	
Part I.C.3	Part I.B.3	Licensed Operator	No changes	
Part I.C.6	Part I.B.4	Reliability Class	No changes	
Part I.C.8	Part I.B.5	Sludge Use and Disposal	Revised wording to reflect current agency guidance	
Part I.C.9	Part I.B.6	Sludge Reopener	No changes	
Part I.C.10	Part I.B.7	Compliance Reporting	Revised to reflect current agency guidance and revised effluent limitations. Language also revised for clarity purposes.	
Part I.C.7	Part I.B.8	Materials Handling/Storage	No changes	
--	Part I.B.9	TMDL Reopener	New, reflects current agency guidance	
Part I.C.7	Part I.B.10	Indirect Dischargers	No changes	
--	Part I.B.11	CTC, CTO Requirement	Revised to reflect current agency guidance	
Part I.C.4	Part I.B.12	Nutrient Reopener	Revised to reflect current agency guidance	
Part I.A.1.b	(deleted)	Compliance Reporting Reference	No longer required per current agency guidance (Permit Manual)	
Part I.B.	(deleted)	Total Residual Chlorine Limitations and Monitoring Requirements	No longer required. The permittee indicated on the application for the 2008 permit reissuance that alternate disinfection (UV) will be used in place of chlorination.	
Part I.C.5	(deleted)	Water Quality Criteria Reopener	No longer required per current agency guidance (Permit Manual)	
Part I.C.11	(deleted)	Closure Plan	Closure of treatment works is covered by the SCAT regulations, therefore the Closure Plan requirement has been removed.	
Part I.D	(deleted)	Bacterial Effluent Limitations and Monitoring Requirements – Additional Instructions	No longer required. The permittee indicated on the application for the 2008 permit reissuance that alternate disinfection (UV) will be used in place of chlorination. In accordance with current agency guidance, compliance with the bacterial limitation for E.Coli in Part I.A. shall serve as proof of adequate disinfection.	
<p>On the cover page, the “NEW-16” and the “a” Special Standards were deleted to reflect the most current version of the Water Quality Standards. During the 2003 issuance of this permit, staff decided to incorporate Special Standards “a” as part of the permit, even though the receiving water body (intermittent tributary to Urbanna Creek) did not, and still does not, include this special standard. However, the permit conditions for the 2008 reissuance have been developed with the same special standard factors as the 2003 issuance in order to protect the downstream shellfish waters.</p>				



- The Middlesex Courthouse treatment facility is a new discharger with a design capacity of 39,900 gallons per day, and was issued a CTO after July 1, 2005. Because the design flow is under 40,000 GPD, this facility is not considered a significant discharger under the Code of Virginia § 62.1-44.19:14.C.5 for new dischargers, and consequently is not subject to coverage under the *General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820)*.
- The Water Quality Criteria Monitoring special condition is not being included in the 2008 permit reissuance due to a decision made during a Water Permit Manager meeting (see 6/10/03 meeting minutes) to request the submittal of this monitoring (Attachment A) in the application reminder letter. Although the aforementioned decision also includes not requiring facilities under 40,000 GPD to test for the parameters in Attachment A, this facility's design flow (39,900 GPD) is very close, and it may be prudent to require a one-time monitoring for these parameters after the facility has begun discharging and is operating in accordance with planned specifications.

c. Public Comment: **TBD**

28. Summary of attachments to this Fact Sheet:

Attachment A	Facility Diagram
Attachment B	Location Map
Attachment C	Flow Frequency Analysis & Stream Sanitation Memo
Attachment D	Site Inspection Report
Attachment E	Effluent Limitation Evaluations

Fact Sheet  
Middlesex Courthouse WWTP

**Attachment A**

Facility Diagram

Fact Sheet  
Middlesex Courthouse WWTP

**Attachment B**

Location Map

**Attachment C**

Flow Frequency Analysis & Stream Sanitation Memo

Fact Sheet  
Middlesex Courthouse WWTP

**Attachment D**

Site Inspection Report

**Attachment E**

Effluent Limitation Evaluations