Wastewater Treatment Plants (WWTPs)

A ***significant*** discharger is a facility that meets one of the following criteria:

- West Virginia, Delaware and New York - Facility treating domestic wastewater and the design flow is greater than or equal to 0.4 million gallons per day (MGD).
- Pennsylvania - Facility treating domestic wastewater and discharging greater than or equal to 0.4 MGD.
- Maryland - Facility treating domestic wastewater and the design flow is greater than or equal to 0.5 MGD.
- Virginia - Facility treating domestic wastewater and the existing design flow is greater than or equal to 0.5 MGD west of the fall line or 0.1 MGD east of the fall line **as well as** all new facilities greater than 40,000 gallons per day (GPD) or facilities expanding by greater than 40,000 GPD as significant.
- Industrial facilities with a nutrient load equivalent to 3,800 total phosphorus (TP) lbs/year or 27,000 total nitrogen (TN) lbs/year.
- Any other municipal and industrial wastewater facilities identified within a jurisdictional tributary strategy.

A ***non-significant*** discharger is a domestic or industrial wastewater facility that does not meet the above criteria.

Combined Sewer Systems (CSS) and Combined Sewer Overflows (CSOs)

[Text forthcoming]

On-site treatment/septic systems

- Delaware has a database for identifying advanced nitrogen removal systems and locations of permitted systems. O&M and monitoring will be added soon. The state has separate databases for Innovative/Alternative (I/A) systems, small septic systems, and large/community systems. Delaware already submits their large system database to EPA. They are attempting to consolidate their I/A and small systems into one database. Delaware monitors older (permitted before February 1, 2007) I/A systems and relies on certified service providers for monitoring of newer systems (since 2007) on bi-annual to annual cycles.
- Maryland has a good tracking program for BAT system installations; O&M tracking needs more work. Maryland does not routinely monitor the performance of onsite systems. In Bay-impacting areas, best available technology for removing nitrogen (BAT) is required. As a condition for MD approval all BAT systems must include O&M for 5 years after installation as up front capital cost of the system.
- PA DEP does not specifically track the installation of onsite (soil based) systems, but it does track the installation of PA DEP-permitted small flow treatment (SFT) facilities (small volume surface discharge systems). Since onsite systems are permitted via municipally-contracted sewage enforcement officers across approximately 1,500 municipal agencies, tracking onsite system installations at the state level would be difficult and is not considered an option by DEP.
- Virginia's VENIS database has permit information for systems built since 2005, and is adding older systems into VENIS. The database tracks O&M and monitoring reports entered by operators. Virginia's rules require annual inspections by licensed inspectors of single family residences with

alternate systems by. Larger systems receive more frequent inspections. Compliance sampling is also required on a sliding scale based on the design flow of the facility. Pump outs are required every 5 years in Bay Preservation Areas.

- In West Virginia, smaller mechanical (alternative) systems need continual maintenance, but there is no monitoring or enforcement to ensure compliance. Minimal compliance monitoring is done, with the exception of responses to occasional complaints. The State's new data management system allows counties only to log permits, installation, etc. There is no provision for tracking maintenance.
- [New York – Unknown]

Biosolids

Virginia is the only state that currently submits biosolids data to EPA. Biosolids are applied and modeled as fertilizer. VA DCR submitted data for 1982, 1987, 1992, 1997, 2002, and 2007; the 2011 numbers in the table below are an estimate based on 2007. [Still have to learn how other states track this information, even if they don't report it to EPA; also need to discuss the issue with Mark Dubin and AgWG]
NOTE: Applied TN and TP are much higher than delivered loads would be since they are not associated with a land use and do not account for attenuation to edge-of-stream or the Bay.

WWTPs	**DC**	**DE**	**MD**	**NY**	**PA**	**VA**	**WV**	*Baywide Total*
Significant								***473***
Significant-Municipal	1	3	76	26	189	99	13	*407*
TN Delivered load, 2011 (lbs)	1,788,179	34,451	11,200,824	1,101,131	7,910,581	13,046,941	168,433	*35,250,539*
% of total	84.4%	0.8%	22.3%	10.7%	7.0%	20.8%	3.1%	14.3%
TP Delivered load, 2011 (lbs)	41,875	5,260	445,902	123,633	509,624	706,625	37,315	*1,870,234*
% of total	50.3%	1.5%	10.0%	5.2%	4.5%	5.6%	2.1%	5.7%
TSS Delivered load, 2011 (lbs)	1,059,349	12,626	4,499,159	724,177	4,532,292	23,301,123	364,147	*34,492,873*
% of total	5.6%	0.0%	0.3%	0.2%	0.2%	0.6%	0.1%	0.4%
Significant-Industrial		1	9	2	24	24	6	*66*
TN Delivered load, 2011 (lbs)		5,378	600,183	6,240	815,699	2,022,792	21,908	*3,472,201*
% of total		0.1%	1.2%	0.1%	0.7%	3.2%	0.4%	1.4%
TP Delivered load, 2011 (lbs)		0	11,184	7,272	37,072	178,251	32,878	*266,657*
% of total		0.0%	0.2%	0.3%	0.3%	1.4%	1.8%	0.8%
TSS Delivered load, 2011 (lbs)		0	1,945,534	27,151	504,478	8,937,104	87,094	*11,501,362*
% of total		0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.1%
Non-significant								***5,442***
Non-significant-Municipal	1	1	163	26	1246	1618	125	*3,180*
TN Delivered load, 2011 (lbs)		930	220,023	28,269	1,226,368	354,711	93,318	*1,923,620*
% of total		0.0%	0.4%	0.3%	1.1%	0.6%	1.7%	0.8%
TP Delivered load, 2011 (lbs)		285	31,505	3,306	151,992	66,849	17,158	*271,094*
% of total		0.1%	0.7%	0.1%	1.4%	0.5%	0.9%	0.8%
TSS Delivered load, 2011 (lbs)		494	172,704	23,833	1,087,117	865,085	271,300	*2,420,533*
% of total		0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Non-significant-Industrial	9	1	477	45	409	639	23	*1,603*
TN Delivered load, 2011 (lbs)	24,349	-	849,108	114,785	595,403	773,250	8,097	*2,364,992*
% of total	1.1%		1.7%	1.1%	0.5%	1.2%	0.1%	1.0%
TP Delivered load, 2011 (lbs)	2,182	-	183,955	18,307	207,666	165,564	1,516	*579,190*
% of total	2.6%		4.1%	0.8%	1.8%	1.3%	0.1%	1.8%
TSS Delivered load, 2011 (lbs)	143,625	-	1,896,657	133,343	5,777,034	5,301,793	51,597	*13,304,048*
% of total	0.8%		0.1%	0.0%	0.2%	0.1%	0.0%	0.2%
CSOs								
Combined Sewer Systems, as of start 2012	1	0	5	3	34	3	4	*50*
TN Delivered load, 2011 (lbs)	86,011	-	29,252	102,535	935,109	253,992	3,971	*1,410,870*
% of total	4.1%		0.1%	1.0%	0.8%	0.4%	0.1%	0.6%
TP Delivered load, 2011 (lbs)	18,233	-	7,218	10,162	91,639	31,193	559	*159,004*
% of total	21.9%		0.2%	0.4%	0.8%	0.2%	0.0%	0.5%
TSS Delivered load, 2011 (lbs)	2,377,628	-	1,461,832	1,345,926	9,460,531	3,990,180	100,311	*18,736,408*
% of total	12.5%		0.1%	0.4%	0.4%	0.1%	0.0%	0.2%
On-site/septics								
-	-	21,735	450,305	96,810	526,721	535,351	62,695	*1,693,616*
TN Delivered load, 2011 (lbs)	-	158,958	3,015,111	315,531	2,141,702	2,514,944	180,129	*8,326,376*
% of total		3.7%	6.0%	3.1%	1.9%	4.0%	3.3%	3.4%
Biosolids								
Tons applied, 2011 (est)	-	-	-	-	-	243,428	-	

TN applied, 2011 (lbs)						18,987,368		
TP applied, 2011 (lbs)						12,171,390		
Total Delivered Loads, All Wastewater (Sig, Non-sig,CSOs, septics, exc. biosolids)								
TN (lbs)	1,898,538	199,718	15,914,502	1,668,491	13,624,862	18,966,630	475,857	52,748,598
	89.6%	4.7%	31.7%	16.2%	12.1%	30.3%	8.8%	21.3%
TP (lbs)	62,291	5,545	679,765	162,680	997,993	1,148,482	89,425	3,146,180
	74.8%	1.5%	15.2%	6.9%	8.9%	9.1%	4.9%	9.5%
TSS (lbs)	3,580,602	13,120	9,975,886	2,254,429	21,361,452	42,395,285	874,449	80,455,224
	18.9%	0.0%	0.7%	0.7%	0.9%	1.2%	0.2%	1.0%
TOTAL DELIVERED LOADS, ALL SOURCES (2011)								
TN (lbs)	**2,118,744**	**4,252,398**	**50,150,603**	**10,281,476**	**112,468,019**	**62,621,929**	**5,398,353**	***247,291,523***
TP (lbs)	**83,249**	**358,240**	**4,479,443**	**2,358,818**	**11,236,539**	**12,648,673**	**1,810,166**	***32,975,128***
TSS (lbs)	**18,973,988**	**92,358,967**	**1,331,552,380**	**314,781,453**	**2,512,822,293**	**3,627,439,966**	**381,242,978**	***8,279,172,025***