Nutrient Trading in the Chesapeake Bay Watershed of Virginia

Committee Meeting
Expansion of the VA Nutrient Credit Exchange
April 13, 2011

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

GVPDESWPTNTPDNTCBWV

or

“Nutrient Trading Regulation”

General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820-10)

Legislative Findings and Purposes

General Assembly finds and determines that adoption and utilization of a watershed general permit and market-based point source nutrient credit trading program will assist in:

a) meeting the nutrient cap load allocations cost-effectively and as soon as possible in keeping with the 2010 timeline and objectives of the Chesapeake 2000 agreement,

b) accommodating continued growth and economic development in the Chesapeake Bay watershed, and

c) providing a foundation for establishing market-based incentives to help achieve the Chesapeake Bay Program's nonpoint source reduction goals.

2007 Rappahannock Total Nitrogen Discharges

Facility	Individual VPDES Permit No.	General Permit Registration No.	General Permit Outfall No.	Design Flow (MGD)	Discharged TN Wasteload Allocation (lbs/yr)	TN Delivery Factor	Delivered TN Wasteload Allocation (lbs/yr)	Limit Effective Date	2007 Discharged TN (lbs)	2007 Delivered TN (lbs)	2007 Delivered TN Exceedance/ (Credit) (lbs)
Warrenton STP	VA0021172	VAN020028	500	2.5	30,456	0.61	18,578	1/1/2011	101,273	61,777	43,199
Fredericksburg WWTF	VA0025127	VAN020095	500	3.5	54,820	1.00	54,820	1/1/2011	93,373	93,373	38,553
Culpeper WWTP	VA0061590	VAN020024	500	3	36,547	0.61	22,294	1/1/2011	97,395	59,411	37,117
Omega Protein	VA0003867	VAN020037	500	3.21	21,213	1.00	21,213	1/1/2011	34,238	34,238	13,025
Warsaw STP	VA0026891	VAN020036	500	0.3	3655	1.00	3,655	1/1/2011	10,522	10,522	6,867
Wilderness Shores WWTP	VA0083411	VAN020029	500	1.25	15,228	0.61	9,289	1/1/2011	24,816	15,138	5,849
Tappahannock WWTP	VA0071471	VAN020033	500	0.8	9746	1.00	9,746	1/1/2011	15,085	15,085	5,339
Kilmarnock WWTP	VA0020788	VAN020038	500	0.5	6091	1.00	6,091	1/1/2011	10,205	10,205	4,114
Urbanna WWTP	VA0026263	VAN020034	500	0.1	1218	1.00	1,218	1/1/2011	3,446	3,446	2,228
Haynesville Correctional Ctr. WWTP	VA0023469	VAN020044	500	0.23	2802	1.00	2,802	1/1/2011	4,514	4,514	1,712
Orange STP	VA0021385	VAN020025	500	3	36,547	0.61	22,293	1/1/2011	38,370	23,406	1,113
Reedville S.D. WWTP	VA0060712	VAN020101	500	0.2	2436	1.00	2,436	1/1/2011	3,089	3,089	653
US Army -Ft. A.P. Hill WWTP	VA0032034	VAN020035	500	0.53	6457	1.00	6,457	1/1/2011	6,381	6,381	(76)
Montross-Westmoreland WWTP	VA0072729	VAN020032	500	0.13	1584	1.00	1,584	1/1/2011	910	910	(674)
Rapidan STP	VA0090948	VAN020026	500	0.6	7309	0.61	4,459	1/1/2011	5,364	3,272	(1,187)
King George Co. – Rappahannock River Aggregate		VAN020056	500	- -	- -	- -	7,797	1/1/2011		3,708	(4,089)
Oakland Park STP	VA0086789	- -	501	0.14	1706	1.00		- -	3,246		
Hopyard Farms WWTF	VA0089338	- -	502	0.5	6091	1.00		- -	462		
Clevengers Corner STP	VA0080527	VAN020027	500	0.6	7309	0.61	4,458	- -	0	0	(4,458)
Fauquier Co. Water & Sanitation Authority Nutrient Aggregate	- -	VAN020053	500	- -	- -		19,618	1/1/2011		13,369	(6,249)
Remington WWTP	VA0076805	- -	501	2	24,364	0.61		- -	13,840		
Marshall WWTP	VA0031763	- -	502	0.64	7797	0.61		- -	8,076		
Haymount WWTF	VA0089125	VAN020030	500	0.58	7066	1.00	7,066	- -	0	0	(7,066)
Culpeper County Nutrient Aggregate	- -	VAN020054	500	- -	- -	- -	11,147	- -		0	(11,147)
Mountain Run WWTP	VA0090212	- -	501	1.5	18,273	0.61		- -	0		
Meadowbrook WWTP	VA0092011	- -	502	- -	0	0.61		- -	0		
High School WWTP	VA0092002	- -	503	- -	0	0.61		- -	0		
Elkwood WWTP	VA0090603	- -	504	- -	0	0.61		- -	0		
Spotsylvania Co. Nutrient Aggregate	- -	VAN020055	500	- -	- -	- -	163,242	1/1/2011		122,083	(41,159)
FMC WWTF	VA0068110	- -	501	5.4	65,784	1.00		- -	72,007		
Massaponax WWTF	VA0025658	- -	502	8	97,458	1.00		- -	50,076		
Stafford Co.-Little Falls Run WWTF	VA0076392	VAN020031	500	8	97458	1.00	97,458	1/1/2011	33,686	33,686	(63,772)
						Totals	497,721			517,612	19,891

2007 Rappahannock Total Phosphorus Discharges

Facility	Individual VPDES Permit No.	General Permit Registration No.	General Permit Outfall No.	Design Flow (MGD)	Discharged TP Wasteload Allocation (lbs/yr)	TP Delivery Factor	Delivered TP Wasteload Allocation (lbs/yr)	Limit Effective Date	2007 Discharged TP (lbs)	2007 Delivered TP (lbs)	2007 Delivered TP Exceedance/ (Credit) (lbs)
Wilderness Shores WWTP	VA0083411	VAN020029	500	1.25	1,142	1.00	1,142	1/1/2011	6,111	6,111	4,969
Culpeper WWTP	VA0061590	VAN020024	500	3	2,741	1.00	2,741	1/1/2011	7,443	7,443	4,702
Fredericksburg WWTF	VA0025127	VAN020095	500	3.5	3,198	1.00	3,198	1/1/2011	7,709	7,709	4,511
Fauquier Co. Water & Sanitation Authority Nutrient Aggregate	- -	VAN020053	500	- -	- -	- -	2,412	1/1/2011		5,869	3,457
Remington WWTP	VA0076805	- -	500	2	1,827	1.00		- -	3,877		
Marshall WWTP	VA0031763	- -	500	0.64	585	1.00		- -	1,992		
Warrenton STP	VA0021172	VAN020028	500	2.5	2,284	1.00	2,284	1/1/2011	5,516	5,516	3,232
Warsaw STP	VA0026891	VAN020036	500	0.3	274	1.00	274	1/1/2011	2,700	2,700	2,426
Kilmarnock WWTP	VA0020788	VAN020038	500	0.5	457	1.00	457	1/1/2011	2,270	2,270	1,813
Orange STP	VA0021385	VAN020025	500	3	2,741	1.00	2,741	1/1/2011	4,370	4,370	1,629
Rapidan STP	VA0090948	VAN020026	500	0.6	548	1.00	548	1/1/2011	1,658	1,658	1,110
Urbanna WWTP	VA0026263	VAN020034	500	0.1	91	1.00	91	1/1/2011	698	698	607
Reedville S.D. WWTP	VA0060712	VAN020101	500	0.2	183	1.00	183	1/1/2011	741	741	558
Tappahannock WWTP	VA0071471	VAN020033	500	0.8	731	1.00	731	1/1/2011	1,254	1,254	523
Haynesville Correctional Ctr. WWTP	VA0023469	VAN020044	500	0.23	210	1.00	210	1/1/2011	303	303	93
Montross-Westmoreland WWTP	VA0072729	VAN020032	500	0.13	119	1.00	119	1/1/2011	69	69	(50)
Omega Protein	VA0003867	VAN020037	500	3.21	1,591	1.00	1,591	1/1/2011	1,286	1,286	(305)
US Army -Ft. A.P. Hill WWTP	VA0032034	VAN020035	500	0.53	484	1.00	484	1/1/2011	123	123	(361)
King George County – Rappahannock River Aggregate	- -	VAN020056	500	- -	- -	- -	585	1/1/2011		179	(406)
Oakland Park STP	VA0086789	- -	501	0.14	128	1.00		- -	127		
Hopyard Farms WWTF	VA0089338	- -	502	0.5	457	1.00		- -	52		
Haymount WWTF	VA0089125	VAN020030	500	0.58	530	1.00	530	- -	0	0	(530)
Clevengers Corner STP	VA0080527	VAN020027	500	0.6	548	1.00	548	- -	0	0	(548)
Culpeper County Nutrient Aggregate	- -	VAN020054	500	- -	- -	- -	1,371	- -		0	(1,371)
Mountain Run WWTP	VA0090212	- -	500	1.5	1,371	1.00		- -	0	0	
Meadowbrook WWTP	VA0092011	- -	502	- -	0	1.00		- -	0	0	
High School WWTP	VA0092002	- -	503	- -	0	1.00		- -	0	0	
Elkwood WWTP	VA0090603	- -	504	- -	0	1.00		- -	0	0	
Stafford Co.-Little Falls Run WWTF	VA0076392	VAN020031	500	8	7309	1.00	7,309	1/1/2011	2,723	2,723	(4,586)
Spotsylvania Co. Nutrient Aggregate	- -	VAN020055	500	- -	- -	- -	12,243	1/1/2007		5,694	(6,549)
FMC WWTF	VA0068110	- -	501	5.4	4,934	1.00		- -	2,988		
Massaponax WWTF	VA0025658	- -	502	8	7,309	1.00		- -	2,706		
						Totals	41,792			56,716	14,924

General Permit Registrations

Nutrient Trading General Permit Effective January 1, 2007

125	“Significant” facilities
8	Bubbled “non-significant” facilities
31	New or expanding facilities currently registered
164	Current registrants

CB Watershed Nutrient General Permit Highlights

- Calendar year annual TN and TP load limits
- Cap & Trade Program
- “Bubbling” or aggregate permits
- Point Source-to-Point Source trading for existing facilities to meet initial load cap
- Point Source-to-Nonpoint Source trading reserved to accommodate new and expanding facilities

What's the difference between a *credit* and an *offset*?

- *Compliance credits* are exchanged when point sources acquire pounds of nitrogen or phosphorus from other point sources in order to comply with the previous year's annual load limit.

- Allocations must be provided sufficient to *offset* any increase in nutrient loads from new or expanded discharges.

Compliance

Dischargers have 3 options for complying with individual waste load allocations:

1. Discharge less than waste load allocation
2. Acquire sufficient point source credits from other dischargers
3. If unable to meet waste load allocations by #1 or #2, acquire sufficient credits by payment into the Water Quality Improvement Fund

Offsetting New and Expanded Facilities

- Any new or expanded discharge ^{3} 40,000 gpd after 7/1/05 or any new municipal > 1,000 gpd after 12/31/2010 must acquire waste load allocations sufficient to *offset* any *increase* in delivered loads and meet the appropriate technology requirement.
- Allocations shall be acquired from...

  a. One or more permitted facilities in the same tributary

  b. Acquisition of NPS load allocations through the use of BMPs. BMPs must exceed baseline threshold and be included in the individual VPDES permit.

  c. Allocations purchased from the Water Quality Improvement Fund

  d. Other means as approved by DEQ on a case-by-case basis

How Does a Locality Grow Under Nutrient Caps?

- Upgrade to more advanced treatment
  - Nitrogen is generally the limiting parameter
- Purchase additional point source allocations
- Non-Point Source Offsets
  - Agricultural and urban storm water BMPs

Agricultural BMP's

DEQ
Virginia Department of Environmental Quality

Trading Nutrient Reductions from Nonpoint Source Best Management Practices in the Chesapeake Bay Watershed: Guidance for Agricultural Landowners and Your Potential Trading Partners

Ag Baseline BMP Requirements

Implementation of.....

- Soil Conservation Plan
- Nutrient Management Plans
- Cover Crops
- Livestock Stream Exclusion w/ 35’ buffer
- 35’ Riparian buffer

Ag BMP Enhancements to Generate Credits

Implementation of.....

- Soil Conservation Plan – Continuous No-Till
- Nutrient Management Plans – 15% N reduction on corn
- Cover Crops – Early planting date
- Livestock Stream Exclusion w/ 35’ buffer – Increase size
- 35’ Riparian buffer – Increase size
- Land Conversion

2:1 trading ratio

It takes a lot of land!

James Basin BMPs: Single BMP

BMP	West of I-95		East of I-95	
	TN	TP	TN	TP
Early Planted Cover Crops	0.54	0	0.91	0
15% Nitrogen Reduction on Corn	1.75	0	3.70	0
Continuous No-Till	1.05	0.49	1.13	0.19

James Basin BMPs: Combination BMPs

BMP	West of I-95		East of I-95	
	TN	TP	TN	TP
Early Planted Cover Crops & 15% Nitrogen Reduction on Corn	2.14	NA	4.29	0
Early Cover Crop & Continuous No-Till	1.38	0.49	1.66	0.19
15% Nitrogen Reduction on Corn & Continuous No-Till	2.53	0.49	4.46	0.19
Early Cover Crop & 15% Nitrogen Reduction on Corn & Continuous No-Till	2.86	0.49	4.99	0.19

James Basin Land Conversion

BMP	West of I-95		East of I-95	
	TN	TP	TN	TP
Cropland to Forest	5.48	1.22	9.34	0.93
Cropland to Hay	4.05	0.60	3.45	0.36
Cropland to Mixed Open (fallow)	3.44	0.33	3.08	0
Hay to Forest	3.28	0.98	13.35	2.16
Hay to Mixed Open (fallow)	1.24	0.09	7.09	0.47
Pasture to Forest	0.67	0.50	13.33	1.74

History of Non-point Source Nutrient Offsets in VA

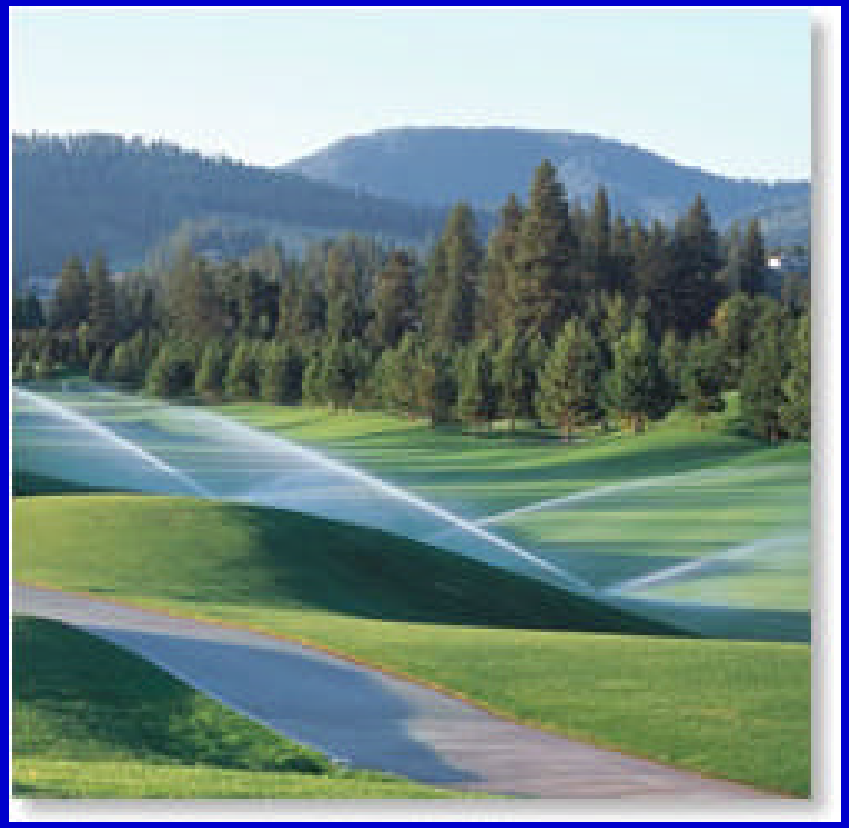
- January 2008 – Ag BMP Offset Guidance
- August 2008 - Virginia's first non-point source nutrient bank approved:
  - Chesapeake Bay Nutrient Land Trust, LLC
- Limited offset demand in the James Basin
- March 2009 – GA approves nutrient offset program provisions of VA Stormwater Management Act
- July 2009 – VA Soil and Water Conservation Board approves stormwater nutrient offset implementation procedures
- 2011 – GA approves SBs 1099, 1100 and 1102

Urban Storm Water BMP's

How Does a Locality Grow Under Nutrient Caps?

- Upgrade to more advanced treatment
  - Nitrogen is generally the limiting parameter
- Purchase additional point source allocations
- Non-Point Source Offsets
  - Agricultural and urban storm water BMPs
- Reclamation and Reuse
  - Irrigation and industrial uses

Reclamation and Reuse



Single largest opportunity to accommodate growth!

Reclamation and Reuse Projects in Virginia

- Western Refinery (Yorktown) - 0.5 MGD since 2002
- Dominion Chesterfield – 0.78 MGD in 2010, projected to increase to 2 MGD
- New Kent Co. – 18 mile reclaimed water distribution line to serve 3 golf courses
- Loudoun County – commercial uses of Broad Run WRF water for irrigation, toilet flushing and chiller make-up water
- Covanta Energy – 1.5 MGD of reuse water from the Noman Cole WWTP in Fairfax

How Does a Locality Grow Under Nutrient Caps?

- Upgrade to more advanced treatment
  - Nitrogen is generally the limiting parameter
- Purchase additional point source allocations
- Non-Point Source Offsets
  - Agricultural and urban storm water BMPs
- Reclamation and Reuse
  - Irrigation and industrial uses
- Other reductions as approved by DEQ on a case-by-case basis
  - Taking septic systems off line (?)
  - Aquaculture (?)
  - Algal production and harvesting (?)
  - Manure export or manure-to-energy projects (?)
  - Others (?)

VA Nutrient Credit Exchange Assoc.

http://www.theexchangeassociation.org

- Voluntary membership in non-stock corporation formed to facilitate the trading program
- 108 member facilities

Exchange Compliance Plan
2010 Annual Update

Submitted to the
Virginia Department of Environmental Quality
February 1, 2010

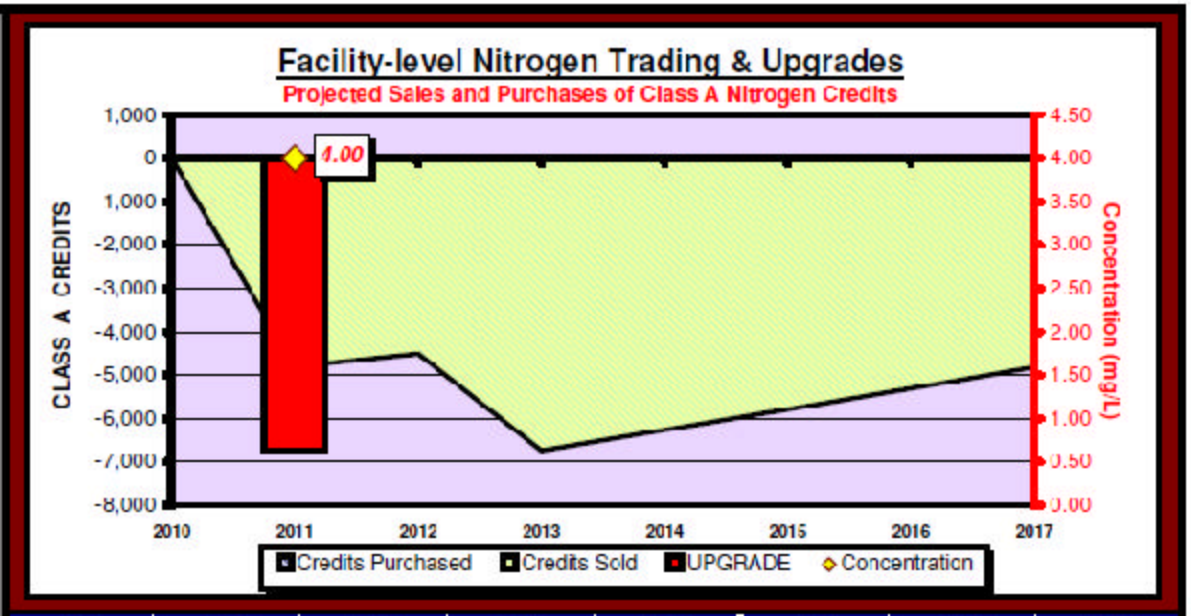
PART I. NITROGEN SUMMARY FOR ACSA-MIDDLE RIVER

ACSA-Middle River

POTOMAC Trading Basin

SUMMARY STATISTICS

WLA Design Flow (mgd)	6.80
WLA Concentration (mg/L)	4.00
Delivery Factor	0.44
Delivered WLA	**36,449**



Loading & Credit Summary	2010	2011	2012	2013	2014	2015	2016	2017
	Planning Period					*Future Estimates (non-binding)*		
Design Flow (mgd)	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80
Projected Flow (mgd)	4.90	5.01	5.12	5.23	5.34	5.45	5.56	5.68
Projected Avg. Annual Concentration (mg/L)	6.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Discharged Load (end of pipe)	89,539	61,033	62,373	63,713	65,053	66,393	67,761	69,157
Delivered Load	39,397	28,855	27,444	28,034	28,623	29,213	29,815	30,429
Delivered WLA		36,449	36,449	36,449	36,449	36,449	36,449	36,449
Expected Credits		9,594	9,005	8,415	7,826	7,236	6,634	6,020
Transfers In (Out) within Owner Bubble		0	0	0	0	0	0	0
Transfers In (Out) from Private Exchange		0	0	0	0	0	0	0
WQIF-Held Credits		0	0	0	0	0	0	0
Expected Net Credits		**9,594**	**9,005**	**8,415**	**7,826**	**7,236**	**6,634**	**6,020**
Class A Pledge Percentage (%)		50%	50%	80%	80%	80%	80%	80%
Class A Credits		**4,797**	**4,503**	**6,732**	**6,261**	**5,789**	**5,307**	**4,816**
Expected Class B Credits		4,797	4,502	1,683	1,565	1,447	1,327	1,204

EXHIBIT 2-1
Nitrogen Plan Summary: Potomac-Shenandoah River Basin

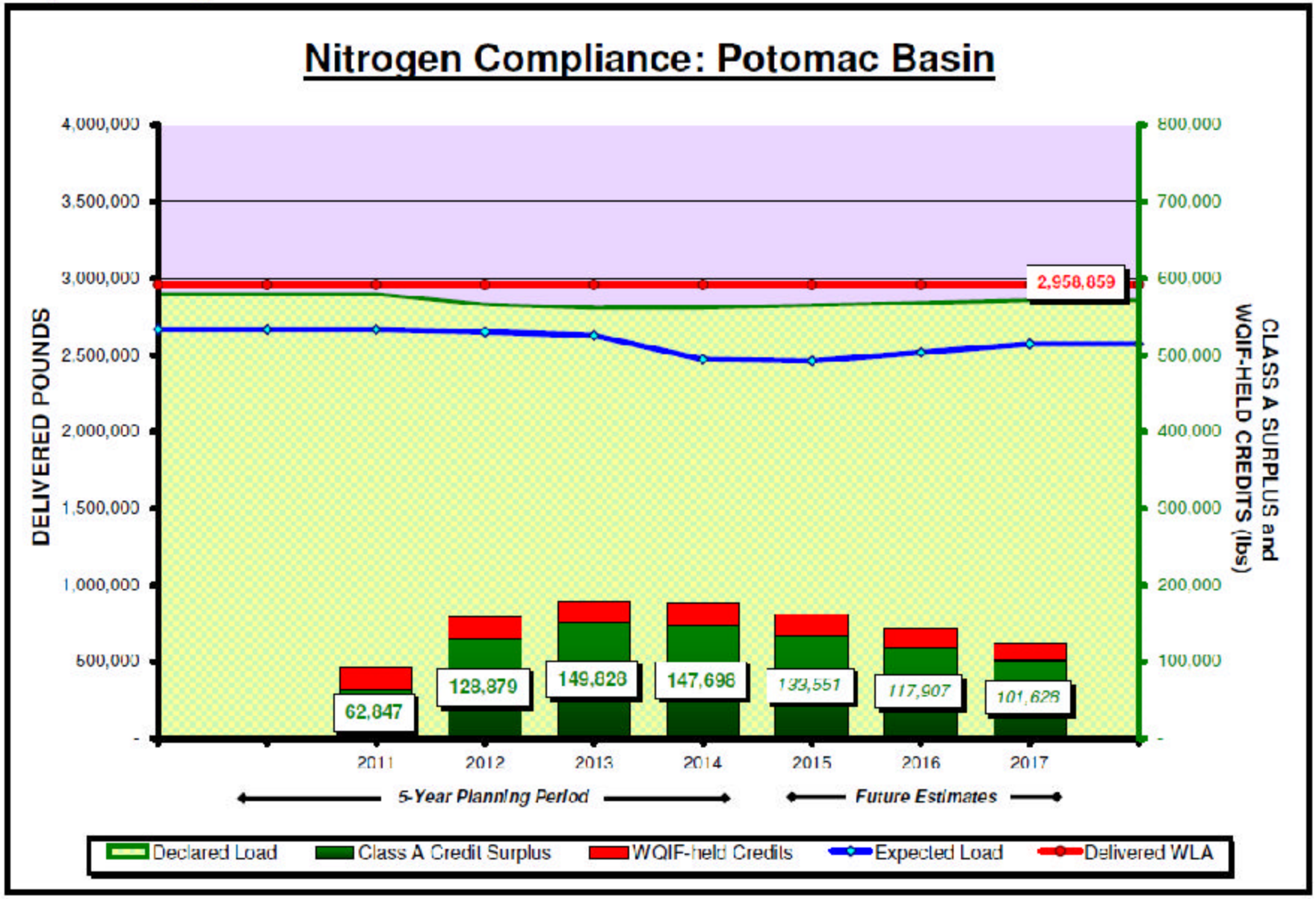


EXHIBIT 2-2
Nitrogen Capital Projects Schedule: Potomac-Shenandoah River Basin

POTOMAC Basin: Nitrogen Upgrade Schedule by Facility

mg/L Upgrades in Progress

	Design Flow (mgd)	UIP Year*	UIP mg/L	Planning Period					Future Estimates		
				2010	2011	2012	2013	2014	2015	2016	2017
ACSA-Fishersville	4.00	2011		4.00							
ACSA-Greenville	0.25										
ACSA-Harriston	0.10										
ACSA-Middle River	6.80	2011		4.00							
ACSA-Mt. Sidney	0.15										
ACSA-Stuarts Draft	4.00	2011		4.00							
ACSA-Vesper View	0.10										
ACSA-Weyers Cave	0.50										
Alexandria S.A.	54.00	2020		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Berryville	0.70	2012		4.00	4.00						
Broadway Regional	2.42	2011		3.70							
Dale Service Corp #1	4.60	2011		3.00							
Dale Service Corp #8	4.60	2011		3.00							
Fairfax Co-Noman Cole	67.00	2014		3.00	3.00	3.00	3.00				
FCWSA-Vint Hill	0.95										
Front Royal	4.00	2013		3.00	3.00	3.00					
FWSA-Opequon	8.40	2011		3.00							
FWSA-Parkins Mill	5.00	2010	4.00								
HRRSA-North River	20.80	2011		3.80							
KGCSA-Dahlgren S.D.	1.00										
KGCSA-Fairview Beach	0.20										
KGCSA-Purkins Corner	0.12										
Leesburg	10.00										
Loudoun Water- Broad Run	11.00	2008	4.00								
Massanutten PSC	1.50										
Merck	1.20	2011		12.00							
MillerCoors LLC	4.50	2011		4.00							
Mt. Jackson	0.70	2010	4.00								
Purcellville	1.50	2011		4.00							
PWCSA-HL Mooney	24.00	2011		3.00							
Shen. Co-N. Fork Regional	0.75										
Stafford Co-Aquia	8.00	2012		3.00	3.00						
Stoney Creek	0.60										
UOSA	54.00										
Waynesboro	4.00	2011		3.00							

** Identifies the first full operational year of the completed upgrade (brown bars represent construction period)*

EXHIBIT 2-3

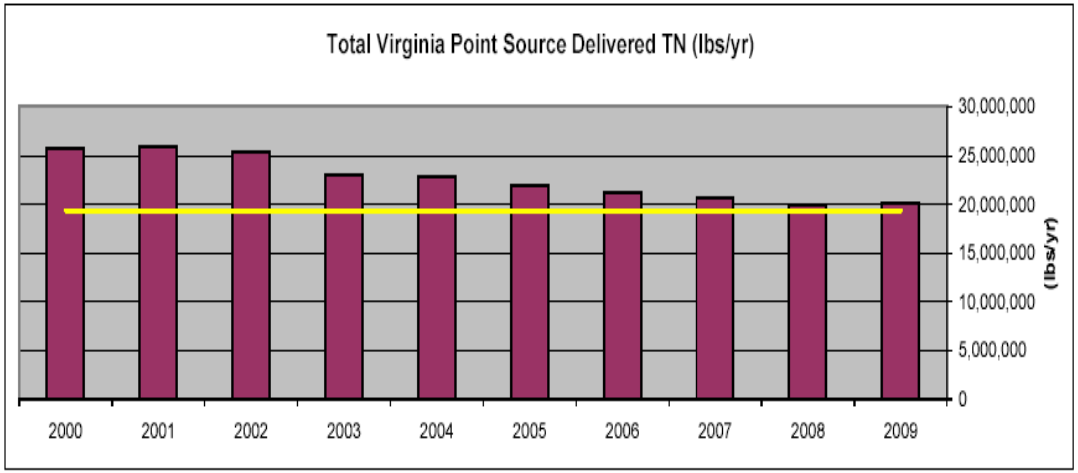
2011 Nitrogen Trading Ledger: Potomac-Shenandoah River Basin

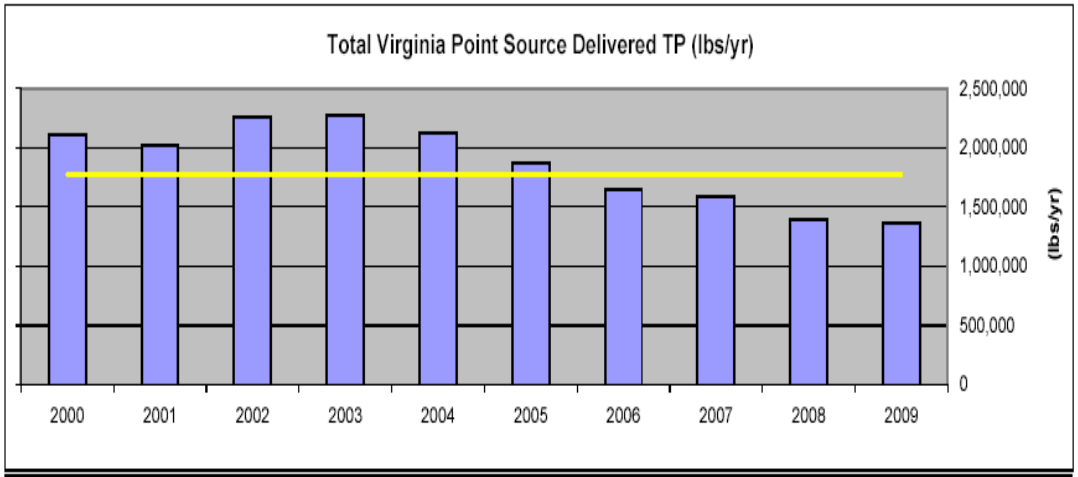
POTOMAC Basin: Nitrogen Credit Ledger

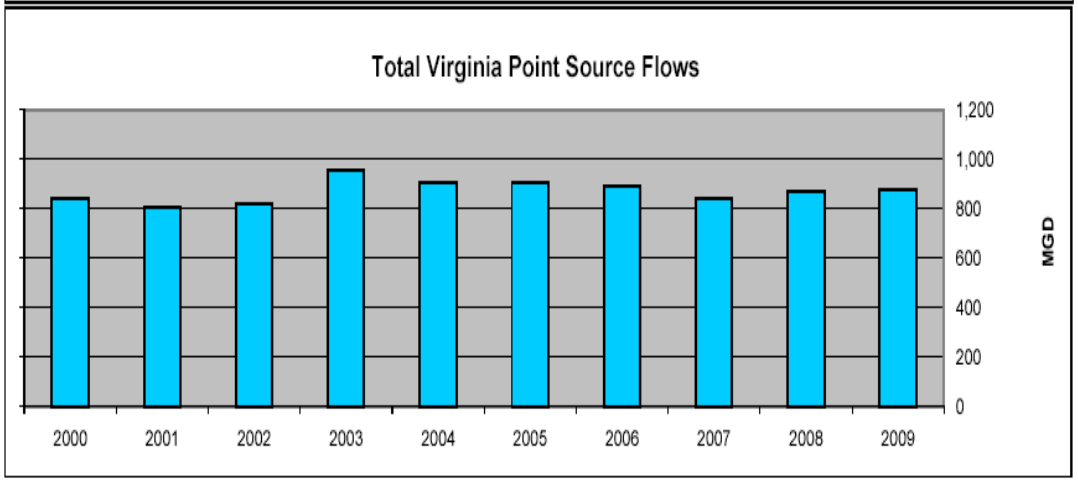
Compliance Year:	2011	Credit Forecasts		Preliminary Use of Credits				Credit Exchange (Pounds)			
Facility Name	Delivered WLA	Expected Load	Expected Credits	In-Bubble Exchange	Private Exchange	WQIF-Held Credits	Expected Net Credits	Class A Pledge	Class A Sales	Class A* Purchases	Class B** (expected)
								PRICE:	$ 1.15	$ 2.00	$ 0.11
The Exchange (group)	**2,958,859**	**2,667,530**	**291,330**	**-**	**-**	**(29,441)**	**261,889**		**175,483**	**(112,635)**	**199,041**
ACSA-Fishersville	21,441	11,846	9,595	-	-	-	9,595	50%	4,798	-	4,797
ACSA-Greenville	6,265	1,278	4,987	(4,987)	-	-	-	0%	-	-	-
ACSA-Harriston	2,506	828	1,678	(1,678)	-	-	-	0%	-	-	-
ACSA-Middle River	36,449	26,855	9,594	-	-	-	9,594	50%	4,797	-	4,797
ACSA-Mt. Sidney	3,759	3,743	16	(16)	-	-	-	0%	-	-	-
ACSA-Stuarts Draft	21,441	8,737	12,704	(8,938)	-	-	3,766	50%	1,883	-	1,883
ACSA-Vesper View	2,506	1,219	1,287	(1,287)	-	-	-	0%	-	-	-
ACSA-Weyers Cave	2,680	19,586	(16,906)	16,906	-	-	-	0%	-	-	-
Alexandria S.A.	493,381	493,381	-	-	-	-	-	0%	-	-	-
Berryville	5,713	14,088	(8,375)	-	-	-	(8,375)	100%	-	(8,375)	-
Broadway Regional	19,752	15,855	3,897	-	-	-	3,897	0%	-	-	3,897
Dale Service Corp #1	42,029	34,719	7,310	-	-	-	7,310	0%	-	-	7,310
Dale Service Corp #8	42,029	34,719	7,310	-	-	-	7,310	0%	-	-	7,310
Fairfax Co-Noman Cole	612,158	612,158	-	-	-	-	-	0%	-	-	-
FCWSA-Vint Hill	5,034	1,325	3,709	-	-	-	3,709	0%	-	-	3,709
Front Royal	32,648	103,953	(71,305)	-	-	-	(71,305)	100%	-	(71,305)	-
FWSA-Opequon	80,704	48,410	32,294	-	-	-	32,294	0%	-	-	32,294
FWSA-Parkins Mill	45,074	19,833	25,241	-	-	-	25,241	0%	-	-	25,241
HRRSA-North River	111,492	71,826	39,666	-	-	-	39,666	100%	39,666	-	-
KGCSA-Dahlgren S.D.	9,137	7,675	1,462	(1,462)	-	-	-	0%	-	-	-
KGCSA-Fairview Beach	1,827	822	1,005	(1,005)	-	-	-	0%	-	-	-
KGCSA-Purkins Corner	1,096	6,853	(5,757)	2,467	-	-	(3,290)	100%	-	(3,290)	-
Leesburg	101,113	65,976	35,137	-	-	(25,278)	9,859	90%	8,873	-	986
Loudoun Water- Broad Run	111,224	44,085	67,139	-	-	-	67,139	90%	60,425	-	6,714
Massanutten PSC	8,040	9,932	(1,892)	-	-	-	(1,892)	100%	-	(1,892)	-
Merck	6,432	19,297	(12,865)	-	-	-	(12,865)	100%	-	(12,865)	-
MillerCoors LLC	24,121	24,121	-	-	-	-	-	0%	-	-	-
Mt. Jackson	5,713	4,081	1,632	-	-	-	1,632	0%	-	-	1,632
Purcellville	15,167	10,617	4,550	-	-	-	4,550	50%	2,275	-	2,275
PWCSA-HL Mooney	219,280	150,755	68,525	-	-	-	68,525	70%	47,968	-	20,557
Shen. Co-N. Fork Regional	6,122	1,959	4,163	-	-	(4,163)	-	0%	-	-	-
Stafford Co-Aquia	73,093	86,205	(13,112)	-	-	-	(13,112)	100%	-	(13,112)	-
Stoney Creek	4,897	6,693	(1,796)	-	-	-	(1,796)	100%	-	(1,796)	-
UOSA	763,096	687,457	75,639	-	-	-	75,639	0%	-	-	75,639
Waynesboro	21,441	16,643	4,798	-	-	-	4,798	100%	4,798	-	-
	-	-	-	-	-	-	-	0%	-	-	-
	-	-	-	-	-	-	-	0%	-	-	-
	-	-	-	-	-	-	-	0%	-	-	-
	-	-	-	-	-	-	-	0%	-	-	-

** For this Compliance Year, 0% of all Class A Credit Purchases are expected to be satisfied using Class B Credits.*

*** Expected Class B Credits are estimates only. Actual Class B Credits—and the resulting Class B sales price—will vary from estimates based on actual Delivered Loads in the Compliance Year.*


Total Virginia Point Source Delivered TN (lbs/yr)
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
(lbs/yr)
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009


Total Virginia Point Source Delivered TP (lbs/yr)
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
(lbs/yr)
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009


Total Virginia Point Source Flows
1,200
1,000
800
600
400
200
0
MGD
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009

Questions