UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Richard Eskin, Ph.D., Director
Technical and Regulatory Service Administration
Maryland Department of the Environment
1800 Washington Blvd., Suite 540
Baltimore, Maryland 21230-1718

FEB 15 2011

Dear Dr. Eskin:

The U.S. Environmental Protection Agency (EPA), Region III, is pleased to approve the *Total Maximum Daily Loads (TMDLs) of Iron and Aluminum for the Upper North Branch Potomac River Watershed, Garrett County, Maryland.* The TMDL report was submitted to EPA for review on September 18, 2009. The TMDL was established and submitted in accordance with Section 303(d)(1)(c) and (2) of the Clean Water Act to address impairments of water quality as identified in Maryland's Section 303(d) List.

In accordance with Federal regulations at 40 CFR §130.7, a TMDL must comply with the following requirements: (1) be designed to attain and maintain the applicable water quality standards; (2) include a total allowable loading and as appropriate, wasteload allocations for point sources and load allocations for nonpoint sources; (3) consider the impacts of background pollutant contributions; (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated); (5) consider seasonal variations; (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality); and (7) be subject to public participation. In addition, the TMDL considers reasonable assurance that the TMDL allocations assigned to the nonpoint sources can be reasonably met. The enclosure to this letter describes how the iron and aluminum TMDLs developed for the Upper North Branch Potomac River watershed satisfy each of these requirements.

As you know, all new or revised National Pollutant Discharge Elimination System permits must be consistent with the TMDL wasteload allocation pursuant to 40 CFR §122.44 (d)(1)(vii)(B). Please submit all such permits to EPA for review as per EPA's letter dated October 1, 1998.

If you have any questions or comments concerning this letter, please do not hesitate to contact Mrs. María García, Maryland TMDL coordinator, at 215-814-3199.

Sincerely,

Signed

Jon M. Capacasa, Director
Water Protection Division

Enclosure

cc: Lee Curry, MDE-TARSA
Melissa Chatham, MDE-TARSA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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1650 Arch Street
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Decision Rationale
Total Maximum Daily Loads of
Iron and Aluminum for the
Upper North Branch Potomac River Watershed
Garrett County, Maryland

Signed

Jon M. Capacasa, Director
Water Protection Division

Date: 2-16-11

Decision Rationale
Total Maximum Daily Loads of
Iron and Aluminum for the
Upper North Branch Potomac River Watershed
Garrett County, Maryland

I. Introduction

The Clean Water Act (CWA) requires a Total Maximum Daily Load (TMDL) be developed for those waterbodies identified as impaired by the State where technology based and other controls will not provide for attainment of water quality standards. A TMDL is a determination of the amount of a pollutant from point, nonpoint, and natural background sources, including a Margin of Safety (MOS), that may be discharged to a water quality limited waterbody.

This document sets forth the U.S. Environmental Protection Agency's (EPA) rationale for approving the TMDL for metals in the Upper North Branch Potomac River watershed. The TMDL was established to address impairments of water quality, caused by metals, as identified in Maryland's 2008 Section 303(d) List for water quality limited segments. The Maryland Department of the Environment (MDE) submitted the report, *Total Maximum Daily Loads of Iron and Aluminum in the Upper North Branch Potomac River Watershed, Garrett County, Maryland*, on September 18, 2009. The TMDL addresses the metals impairments found in Laurel Run (MD-02140050039); Three Forks Run (MD-021410050048); and the Upper North Branch Potomac River upstream of Jennings Randolph Run (MD-021410050042, MD-021410050044 and MD-021410050047) in the Upper North Branch Potomac River watershed as identified on Maryland's Section 303(d) List. The basin identification for the Upper North Branch Potomac River watershed is MD-02141005.

EPA's rationale is based on the TMDL Report and information contained in the computer files provided to EPA by MDE. EPA's review determined that the TMDLs meet the following seven regulatory requirements pursuant to 40 CFR Part 130.

1. The TMDL is designed to implement applicable water quality standards.
2. The TMDL includes a total allowable load as well as individual wasteload allocations (WLAs) and load allocations (LAs).
3. The TMDL considers the impacts of background pollutant contributions.
4. The TMDL considers critical environmental conditions.
5. The TMDL considers seasonal environmental variations.
6. The TMDL includes a MOS.
7. The TMDL has been subject to public participation.

In addition, these TMDLs considered reasonable assurance that the TMDL allocations assigned to nonpoint sources can be reasonably met.

II. Summary

The TMDL specifically allocates the allowable iron (Fe) and aluminum (Al) loadings to two tributaries and three sections of the mainstem in the Upper North Branch Potomac River watershed. There are thirteen permitted point sources of metals which are included in the WLA loads for the watershed. The fact that the TMDL does not assign WLAs to the other nonpoint sources in the watershed should not be construed as a determination by either EPA or MDE that there are no additional sources in the watershed that are subject to the National Pollutant Discharge Elimination System (NPDES) program. In addition, the fact that EPA is approving this TMDL does not mean that EPA has determined whether some of the sources discussed in the TMDL, under appropriate conditions, might be subject to the NPDES program.

The TMDLs developed for the metals impairments in the Upper North Branch Potomac River watershed are presented in Tables 1 and 2. The TMDLs are expressed as the daily loads acceptable under various flow conditions, including high flow conditions (0 through 10) and low flow conditions (90 through 100). The daily loads were produced through the use of a load duration curve, which shows the TMDL value at various flow ranges, rather than at a single, critical flow.

Table 1. TMDL Maximum Daily Aluminum Loads by Flow Percentage Range (lb/d)

Watershed	Allocation point	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Laurel Run	UNT to Laurel Run	44.69	13.27	9.56	6.19	4.44	3.39	2.37	1.94	1.54	1.26
	Direct Contributions	4,952.77	507.07	635.1	352	316.8	143.6	118.3	74	65.65	47.75
	Entire watershed	**4,995.85**	**520.19**	**638.5**	**355.8**	**320.2**	**145.9**	**120.1**	**86.83**	**66.86**	**48.88**
Three Forks Run	Right Prong Three Forks Run	158.7	34.16	23	23.7	13.33	9.56	5.99	2.05	0.73	0.22
	Left Prong Three Forks Run	80.06	14.77	11.37	5.3	5.92	3.11	1.97	0.9	0.44	0.1
	Direct Contributions	1,332.86	236.82	136.9	89.47	43.28	17.61	10.97	5.34	4.31	1.74
	Entire watershed	**1,571.62**	**274.12**	**165.2**	**64.33**	**47.24**	**30.15**	**16.87**	**7.91**	**3.92**	**1.37**

Table 2. TMDL Maximum Daily Iron Loads by Flow Percentage Range (lb/d)

Watershed	Allocation Point	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Laurel Run	UNT to Laurel Run	180.77	89.91	72.64	48.4	34.7	24.35	18.94	14.99	11.97	10.2
	Direct Contributions	4,800.84	436.48	622.67	348.79	286	112.5	116.6	69.5	62.76	47.07
	Entire watershed	**4,981.62**	**525.04**	**639.66**	**374.91**	**307**	**134.5**	**130.6**	**89.91**	**72.41**	**55.97**
Three Forks Run	Right Prong Three Forks Run	130.33	31.42	21.17	21.16	12.3	9.17	5.8	2	0.66	0.23
	Left Prong Three Forks Run	664.68	188.41	105.7	64.51	51.2	35.5	24.26	12.72	8.76	5.07
	Direct Contributions	3,584.05	877.58	333.59	257.1	122	56.64	34.72	21.47	5.87	2.74
	Entire watershed	**4,345.55**	**1,028.83**	**421.97**	**203.61**	**129**	**90.49**	**52.81**	**27.12**	**15.86**	**8.09**

Watershed	Allocation Point	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Upper North Branch Potomac River	WV Contributions	35,367	21,945	14,012	10,405	7,516	3,824	3,845	2,781	2,266	1,998
	Direct Contributions	1,410	390	218	270	127	103	70	52	30	14
	Tributary Contributions	22,265	5,462	2,914	2,700	1,366	1,153	557	507	205	136
	Entire watershed	**66,040**	**35,632**	**22,993**	**13,524**	**9,226**	**4,735**	**5,135**	**3,101**	**2,488**	**2,151**

The annual average TMDLs developed for the metals impairments in the Upper North Branch Potomac River watershed are presented in Tables 3, 4, 5, 6 and 7. The Mining Data Analysis System (MDAS) was used as the modeling tool for which the annual loads were developed. To generate the annual loads the MDAS model was run for a one year period (March 1, 2007, through February 29, 2008).

Table 3. Annual Aluminum TMDL for Laurel Run in the Upper North Branch Potomac River Watershed

Watershed	Allocation Point	Load	Aluminum (lb/yr)		
			Baseline	TMDL	% reduction
Laurel Run	Unnamed Tributary (UNT) to Laurel Run	NPS/LA	41,792	1,927	95.4
		PS/WLA	0	0	0
		MOS	--	113	--
		Future Allocation (FA)	--	227	--
		Total	41,792	2,267	94.6
	Direct Contributions	NPS/LA	331,672	98,281	70.4
		PS/WLA	0	0	0
		MOS	--	5,781	--
		FA	--	11,563	--
		Total	331,672	115,625	65.1
	Entire watershed	**NPS/LA**	**373,464**	**100,209**	**73.2**
		PS/WLA	**0**	**0**	**0**
		MOS	--	**5,895**	--
		FA	--	**11,789**	--
		Total	**373,464**	**117,893**	**68.4**

Table 4. Annual Aluminum TMDL for Three Forks Run in the Upper North Branch Potomac River Watershed

Watershed	Allocation Point	Load	Aluminum (lb/yr)		
			Baseline	TMDL	% reduction
Three Forks Run	Right Prong Three Forks Run	NPS/LA	26,903	3,280	87.8
		PS/WLA	0	0	0
		MOS	--	193	--
		FA	--	386	--
		Total	26,903	3,858	85.7
	Left Prong Three Forks Run	NPS/LA	12,315	1,576	87.2
		PS/WLA	0	0	0
		MOS	--	93	--
		FA	--	185	--
		Total	12,315	1,854	84.9

Watershed	Allocation Point	Load	Aluminum (lb/yr)		
			Baseline	TMDL	% reduction
	Direct Contributions	NPS/LA	259,329	22,443	91.3
		PS/WLA	0	0	0
		MOS	--	1,320	--
		FA	--	2,640	--
		Total	259,329	26,404	89.8
	Entire watershed	**NPS/LA**	**298,547**	**27,299**	**90.9**
		PS/WLA	**0**	**0**	**0**
		MOS	--	**1,606**	--
		FA	--	**3,212**	--
		Total	**298,547**	**32,116**	**89.2**

Table 5. Annual Iron TMDL for Laurel Run in the Upper North Branch Potomac River Watershed

Watershed	Allocation Point	Load	Iron (lb/yr)		
			Baseline	TMDL	% reduction
Laurel Run	Unnamed Tributary (UNT) to Laurel Run	NPS/LA	46,196	11,839	74.4
		PS/WLA	0	0	0
		MOS	--	696	--
		FA	--	1,393	--
		Total	46,196	13,929	69.8
	Direct contributions	NPS/LA	772,785	81,277	89.5
		PS/WLA	865	865	0
		MOS	--	4,832	--
		FA	--	9,664	--
		Total	773,650	96,637	87.5
	Entire watershed	**NPS/LA**	**818,980**	**93,116**	**88.6**
		PS/WLA	**865**	**865**	**0**
		MOS	--	**5,528**	--
		FA	--	**11,057**	--
		Total	**819,845**	**110,566**	**86.5**

Table 6. Annual Iron TMDL for Three Forks Run in the Upper North Branch Potomac River Watershed

Watershed	Allocation Point	Load	Iron (lb/yr)		
			Baseline	TMDL	% reduction
Three Forks Run	Right Prong Three Forks Run	NPS/LA	33,154	2,818	91.5
		PS/WLA	0.46	0.46	0
		MOS	--	166	--
		FA	--	332	--
		Total	33,155	3,316	90
	Left Prong Three Forks Run	NPS/LA	37,625	21,747	42.2
		PS/WLA	0	0	0
		MOS	--	1,279	--
		FA	--	2,558	--
		Total	37,625	25,585	32
	Direct Contributions	NPS/LA	339,464	57,816	83
		PS/WLA	0.23	0.23	0
		MOS	--	3,401	--
		FA	--	6,802	--
		Total	339,464	68,019	80

Watershed	Allocation Point	Load	Iron (lb/yr)		
			Baseline	TMDL	% reduction
	Entire Watershed	NPS/LA	410,243	82,381	79.9
		PS/WLA	0.69	0.69	0
		MOS	--	4,846	--
		FA	--	9,692	--
		Total	410,243	96,919	76.4

Table 7. Annual Iron TMDL for Upper North Branch Potomac River Upstream of Jennings Randolph Lake in the Upper North Branch Potomac River Watershed

Watershed	Allocation point	Load	Iron (lb/yr)		
			Baseline	TMDL	% reduction
Upper North Branch Potomac River upstream of Jennings Randolph Lake	Direct Contributions	NPS/LA	47,910	40,723	15
		PS/WLA	0	0	0
		MOS	--	2,395	--
		FA	--	4,791	--
		Total	47,910	47,910	0
	Tributary Contributions	NPS/LA	1,658,731	537,446	67.6
		PS/WLA	21,752	21,752	0
		MOS	--	32,894	--
		FA	--	65,788	--
		Total	1,680,483	657,880	60.9
	Entire MD Portion	**NPS/LA**	**1,706,641**	**578,169**	**66.1**
		PS/WLA	**21,752**	**21,752**	**0**
		MOS	--	**35,289**	--
		FA	--	**70,579**	--
		Total	**1,728,393**	**705,789**	**59.2**
	Upstream Load from WV		2,146,595[a]	1,830,771[b]	14.7
	Entire watershed		**3,874,989**	**2,536,561**	**34.5**

The TMDL is a written plan and analysis established to ensure that a waterbody will attain and maintain water quality standards. The TMDL is a scientifically based strategy that considers current and foreseeable conditions, the best available data, and accounts for uncertainty with the inclusion of a MOS value. The option is always available to refine the TMDL for resubmittal to EPA for approval if environmental conditions, new data, or the understanding of the natural processes change more than what was anticipated by the MOS.

III. Background

The Upper North Branch Potomac River watershed is located in Garrett County, Maryland, and extends into Preston, Tucker, Grant, and Mineral Counties in West Virginia. The Upper North Branch Potomac River watershed is defined by the headwaters of the North Branch Potomac down to the confluence of the Savage River. The watershed encompasses approximately 105 square miles in Maryland, and 186 square miles in West Virginia. The Maryland portion of the watershed consists primarily of forest (74.13%), and agriculture (15.7%). Mining land uses cover 5 percent of the watershed while urban land uses account for less than 4 percent.

The Surface Water Use Designations for the Upper North Branch Potomac River mainstem is Use I-P: *Water Contact Recreation, protection of Aquatic Life, and Public Water Supply*. All tributaries to the mainstem are designated as Use III-P: *Non-tidal Cold Water and Public Water Supply* (Code of Maryland Regulations, COMAR, 2008). The water quality impairment of the Upper North Branch Potomac River watershed consists of elevated levels of metals, specifically, iron and aluminum. Maryland does not have numeric criteria for aluminum and iron, but they have adopted the EPA's aquatic life non-priority pollutant criteria for metals impairments.

MDE concluded that the major source of the metals contamination in the Upper North Branch Potomac River watershed is located in the tributaries and not in the watershed directly feeding into the Upper North Branch Potomac River. On the basis of the analysis of the monitoring results and impairment listing methodologies applied by MDE, the tributaries in the Upper North Branch Potomac River that showed exceedances for metals were Laurel Run (Al and Fe), Three Forks Run (Fe and Al), Sand Run (Fe), and Jennings Randolph Lake (Fe). Table 8 presents the Integrated Report listings for the Upper North Branch Potomac River watershed and the impaired stream segments, respectively. Additional data was collected in 2008 for this study to determine the extent of the metals impairment in the Upper North Branch Potomac River watershed. Sand Run was the only tributary identified as meeting water quality standards for metals.

Table 8. 2008 Integrated Report Metals Listings for the Upper North Branch Potomac River TMDL

8-digit Basin Name	12-digit Basin Name	Substance	Listing Year	Current Listing Category	New Data Demonstrates Impairment
Upper North Branch Potomac River	Laurel Run	Al	2008	3	Yes
		Fe		5	Yes
	Three Forks Run	Al	2008	5	Yes
		Fe		5	Yes
	Sand Run	Fe	2008	3	No
	Mainstem Upstream of Jennings Randolph Run	Fe	2008	3	Yes

The CWA Section 303(d) and its implementing regulations require that TMDLs be developed for waterbodies identified as impaired by the State where technology based and other required controls do not provide for attainment of water quality standards. The metals TMDLs submitted by MDE are designed to allow for the attainment of the Upper North Branch Potomac River watershed's designated uses, and to ensure that there will be no metals impact affecting the attainment of these uses. Refer to Tables 1 through 7 for a summary of allowable loads.

In order to quantify the impact of metals in the Upper North Branch Potomac River watershed, the Mining Data Analysis System (MDAS) modeling program was used. MDAS integrates geographical information systems (GIS), comprehensive data storage, management capabilities, and a data analysis/post processing system. In addition, MDAS can be used to integrate Hydrologic Simulation Program FORTRAN (HSPF) algorithms. The MDAS watershed model was used in the Upper North Branch Potomac River watershed to produce

baseline contributions and to establish the allowable loadings from each pollutant source in the Maryland portion of the watershed. The West Virginia's metal contributions in the TMDL were developed from reviewing previous documented MDAS generated data for the West Virginia portion of the Upper North Branch Potomac River watershed.

IV. Discussion of Regulatory Conditions

EPA finds that MDE has provided sufficient information to meet all seven of the basic requirements for establishing a metals TMDL for the Upper North Branch Potomac River watershed. Therefore, EPA approves the metals TMDL for the Upper North Branch Potomac River watershed.

1) The TMDLs are designed to implement applicable water quality standards.

Water Quality Standards consist of two components: designated and existing uses; and narrative and/or numerical water quality criteria necessary to support those uses. The Designated Uses for the Upper North Branch Potomac River mainstem is Use I-P: *Water Contact Recreation, protection of Aquatic Life, and Public Water Supply*. All tributaries to the mainstem are designated as Use III-P: *Non-tidal Cold Water and Public Water Supply* (Code of Maryland Regulations, COMAR, 2008). Maryland does not currently have numeric criteria for aluminum and iron. For the purposes of this TMDL, the State has adopted EPA's aquatic life non-priority pollutant criteria for iron and aluminum (Table 9).

Table 9. Applicable Metals Water Quality Criteria

Metal	Applicable Criteria	Criteria Value (µg/L)
Fe	Freshwater aquatic life - chronic	1,000
Al		87

MDE defines a waterbody as impaired by a chemical contaminant in the water column when greater than 10 percent of the samples, with a minimum of ten samples collected over a three-year period, exceeds the applicable criteria (USEPA 1997). If there are less than ten samples for a given area, MDE may interpret the data and determine if aquatic life uses are attained by considering a number of factors, including the magnitude of the criteria exceedance and the number of criteria exceeded. In addition, current EPA guidelines suggest that a waterbody is not fully use-supporting when more than one exceedance of the acute or chronic water quality criterion occurs over a three-year period (USEPA 2002).

Streams in the Upper North Branch Potomac River watershed were monitored in May 2004 and October 2005 for metals impairments. A total of 19 stations were sampled with two samples collected at each station. Analysis of the monitoring data showed that the aquatic life criteria for aluminum and iron are being met in the Upper North Branch Potomac River, except for the following tributaries where exceedances of aluminum and iron were found: Laurel Run (MD-021410050039), and Three Forks Run (MD-021410050048). Exceedances of iron were also found at three stations along the Upper North Branch Potomac River mainstem above Jennings Randolph Lake (MD-021410050042, MD-021410050044 and MD-021410050047).

Section 303(d) of the CWA requires states to develop TMDLs for waterbodies that do not

meet water quality standards. In the impaired segments of the Upper North Branch Potomac River, TMDLs were developed through computer modeling based on data collected throughout the watershed. The purpose for developing the TMDLs is to reduce pollutant loadings under existing conditions so that water quality standards can be met.

The MDAS water quality model was selected as the modeling framework to simulate existing conditions and to perform TMDL allocations in the Upper North Branch Potomac River watershed. MDAS is a comprehensive data management and modeling system capable of representing loads from nonpoint sources and point sources in the watershed and simulating in-stream processes. The MDAS model simulation for the Upper North Branch Potomac River watershed covered a multi-year period that inherently accounts for seasonal variation. Its continuous simulation period represents both hydrologic and source loading variability seasonally. In addition, the model takes critical conditions into account through dynamic model simulation. Through the use of MDAS modeling, the loading contributions from the applicable sources of metals in the Upper North Branch Potomac River watershed were reduced until water quality criteria were attained. Table 9 provides the applicable water quality criteria for this TMDL.

2) The TMDLs include a total allowable load as well as individual wasteload allocations and load allocations.

Total Allowable Load

EPA regulations at 40 CFR §130.2(i) state *that the total allowable load shall be the sum of individual WLAs for point sources, LAs for nonpoint sources, and natural background concentrations*. The TMDL for metals in the Upper North Branch Potomac River watershed is consistent with 40 CFR §130.2(i) because the total loads provided by MDE equal the sum of the individual WLAs for point sources and the land based LAs for nonpoint sources.

Load Allocations

The LA is the portion of the TMDL that is assigned to nonpoint sources. In the metals TMDL for the Upper North Branch Potomac River watershed, LAs were first applied to loads from known mining seeps and portals. If further reductions were required, the loads from other nonpoint sources were reduced. Table 11 presents the total annual LAs at each monitoring station located in the Upper North Branch Potomac River watershed. The loads include background concentrations and are expressed in edge of stream loads. These loads represent a 99 percent reduction in flow and pollutant concentration from mine seeps.

Table 10. Load Allocations for Aluminum and Iron in the Upper North Branch Potomac River Watershed

Watershed	Allocation Point	Fe (lb/yr)	Al (lb/yr)
Laurel Run	UNT to Laurel Run	11,839	1,927
	Direct Contributions	81,277	98,281
	Entire Watershed	**93,116**	**100,209**
Three Forks Run	Right Prong Three Forks Run	2,818	3,280

	Left Prong Three Forks Run	21,747	1,576
	Direct Contributions	57,816	22,443
	Entire Watershed	**82,381**	**27,299**
UNBPR	WV Contributions	84,337	--
	Direct Contributions	40,723	--
	Tributary Contributions	537,446	--
	Entire Watershed	**662,507**	--

Wasteload Allocations

As indicated in the TMDL Report, there are thirteen permitted point sources in the Upper North Branch Potomac River watershed. These point sources can be grouped into two categories, process water and permitted mining operations. For the permitted process water operations, the dischargers were assigned WLAs that would allow them to discharge at their current permit limits since the flow from these discharges are believed to be negligible. For the permitted mining operations, no reductions were applied to the point sources as the permitted discharges are governed by the tech-based limit capability established in their permits. None of the permits in the Upper North Branch Potomac River watershed are permitted to discharge aluminum; therefore, the entire WLA was assigned to the permitted point sources that discharge iron. The total WLA for iron in the Upper North Branch Potomac River watershed is 21,728 lbs per year. Table 10 presents the individual WLAs for each point source in the Upper North Branch Potomac River watershed.

Table 11. Wasteload Allocations for Permitted Facilities in the Upper North Branch Potomac River Watershed

NPDES Permit Number	Permittee	Outlet	Watershed	TMDL Iron (lb/yr)	TMDL Iron (lb/d)	% Reduction Iron
MD0055182	Mettiki Coal, LLC Oakland	1	Laurel Run	--	--	--
		2	Sand Run	17,141	46.96	0
		3	Sand Run	1,007	2.758	0
		5	Sand Run	--	--	--
		6	Sand Run	--	--	--
		7	Laurel Run	--	--	--
		8	Sand Run	583	1.596	0
		9	Sand Run	603	1.651	0
		10	Sand Run	--	--	--
		12	Laurel Run	865	2.37	0
MD0060933	Bloomington WWTP	1	UNBPR	--	--	--
MD0060941	Town Of Kitzmiller WWTP	1	UNBPR	--	--	--
MD0060950	Gorman WWTP	1	UNBPR	--	--	--
MD0068811	Backbone Mountain, LLC-Mine#1 Oakland	1	UNBPR	1,501	4.111	0
		2	UNBPR	5.74	0.01572	0
MDG851722	Buffalo Coal Company - Kempton Job Oakland	1	UNBPR	9.14	0.02504	0
		4	UNBPR	9.14	0.02504	0
		5	UNBPR	9.14	0.02504	0
MDG852173	Wolf Run Mining Company - Steyer Deep Mine	2	UNBPR	--	--	--
MDG852905	G & S Coal Company-Manor Hill Mine Swanton	1	UNBPR	1.83	0.00501	0
		2	UNBPR	1.83	0.00501	0
		3	UNBPR	1.83	0.00501	0
		4	UNBPR	1.83	0.00501	0

NPDES Permit Number	Permittee	Outlet	Watershed	TMDL Iron (lb/yr)	TMDL Iron (lb/d)	% Reduction Iron
MDG859602	Mettiki Coal Corp. - C-Mine		UNBPR	9.14	0.02504	0
MDG859605	Patriot Mining Co. – Vindex/ Douglas Mine	1	UNBPR	0.91	0.0025	0
MDG859613	Vindex Energy Corporation - Island Tract Mine	1	Three Forks Run	0.46	0.00125	0
		2	Three Forks Run	0.23	0.00063	0
		3	Three Forks Run	--	--	--
		4	Three Forks Run	--	--	--
MDG859615	LAOC Corporation - Paugh Tract Mine	1	UNBPR	--	--	--
MDG859622	Wpo Inc. - Table Rock Mine	1	UNBPR	1.83	0.00501	0

Federal regulations at 40 CFR §122.44(d)(1)(vii)(B) require that, for an NPDES permit for an individual point source, the effluent limitations must be consistent with the assumptions and requirements of any available WLA for the discharge prepared by the State and approved by EPA. There is no express or implied statutory requirement that effluent limitations in NPDES permits necessarily be expressed in daily terms. The CWA definition of "effluent limitation" is quite broad (effluent limitation is "any restriction ... on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources ...)." See CWA Section 502(11). Unlike the CWA's definition of TMDL, the CWA definition of "effluent limitation" does not contain a "daily" temporal restriction.

NPDES permit regulations do not require that effluent limits in permits be expressed as maximum daily limits or even as numeric limitations in all circumstances, and such discretion exists regardless of the time increment chosen to express the TMDL. For further guidance, refer to Benjamin H. Grumbles memo (November 15, 2006) titled *Establishing TMDL Daily Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015 (April 25, 2006) and implications for NPDES Permits.*

EPA has authority to object to the issuance of an NPDES permit that is inconsistent with WLAs established for that point source. To ensure consistency with this TMDL, if an NPDES permit is issued for a point source that discharges one or more of the pollutants of concern in the watershed, any deviation from the WLAs set forth in the TMDL Report and described herein for a point source, must be documented in the permit Fact Sheet and made available for public review along with the proposed draft permit and the Notice of Tentative Decision. The documentation should: (1) demonstrate that the loading change is consistent with the goals of the TMDL and will implement the applicable water quality standards; (2) demonstrate that the changes embrace the assumptions and methodology of the TMDL; and (3) describe that portion of the total allowable loading determined in the State's approved TMDL Report that remains for any other point sources (and future growth where included in the original TMDL) not yet issued a permit under the TMDL. It is also expected that Maryland will provide this Fact Sheet for review and comment to EPA for each point source included in the TMDL analysis, as well as, any local and State agency with jurisdiction over land uses for which LA changes may be impacted. It is also expected that MDE will require periodic monitoring of the point source(s),

through the NPDES permit process, in order to monitor and determine compliance with the TMDL's WLAs.

3) The TMDLs consider the impacts of background pollutant contributions.

Background pollutants including atmospheric deposition and runoff from background (uncontaminated) land surfaces, were considered in the TMDLs development.

4) The TMDLs consider critical environmental conditions.

Federal regulations (40 CFR 130.7(c)(1)) require that TMDLs take into account critical conditions for stream flow, loading, and water quality parameters. The intent of this requirement is to ensure that the water quality of the waterbody is protected during times when it is vulnerable. Critical conditions are the set of environmental conditions that should be accounted for to ensure the attainment of water quality targets. Critical conditions were accomplished in the Upper North Branch Potomac River metals TMDLs through dynamic model simulation (i.e., using the model to predict conditions over a long period of time that represents wet, dry, and average flow periods).

5) The TMDLs consider seasonal environmental variations.

The TMDL must also consider seasonal variations. In the Upper North Branch Potomac River watershed, the MDAS model simulation for a multi-year period inherently accounted for seasonal variations. The continuous simulation represents the seasonal variability in hydrology and source loadings.

6. The TMDLs include a Margin of Safety.

The MOS is the portion of the pollutant loading reserved to account for uncertainty in the TMDL development process. There are two ways to incorporate the MOS: (1) implicitly, by using conservative model assumptions to develop allocations, or (2) explicitly specify a portion of the TMDL as the MOS and use the remainder for allocations. For this TMDL, a five percent explicit MOS was used to account for uncertainty in the modeling process.

While the MOS is an allocation for scientific uncertainty, future allocation (FA) is an allocation for growth. Ten percent of the load was allocated for FA in the area covered by the TMDL. This growth includes future urban developments, including point sources, coal mining areas, agriculture, and other nonpoint sources. The FA could also be used for sources not accounted for or unknown and, therefore, not otherwise included in the TMDL.

7) The TMDLs have been subject to public participation.

MDE provided an opportunity for public review and comment on the metals TMDL for the Upper North Branch Potomac River watershed. The public review and comment period was open from August 13, 2009 through September 11, 2009. There was one written comment received and responded to during the comment period.

Copies of the reports were sent to the U.S. Fish and Wildlife Service pursuant to Section 7(c) of the Endangered Species Act, requesting the Service's concurrence with EPA's findings that approval of this TMDL does not adversely affect any listed endangered and threatened species, and their critical habitats.

V. Discussion of Reasonable Assurance

Section 303(d) of the CWA and EPA regulations require reasonable assurance that TMDLs will be implemented. TMDLs quantify the pollutant load that can be present in a waterbody and still ensure attainment and maintenance of water quality standards. The Upper North Branch Potomac River watershed TMDLs identify the necessary overall load reductions for those pollutants causing use impairments and distributes those reduction goals to the appropriate sources. Reaching the reduction goals established by these TMDLs will occur only through changes in current land use practices, including the remediation of Acid Mine Drainage (AMD) and implementing the Clean Air Interstate Rule, which will reduce acid deposition and, therefore, metals released into the environment.

There are several installed and operating AMD treatment systems in the western Maryland watersheds, as well as pending systems that are being designed and planned for construction in the next few years.

The agency responsible for protecting the environment from potential impacts from active mining and promoting the restoration of abandoned mine lands and water resources is the Maryland Bureau of Mines. Their restoration activities are ongoing, but are limited by the amount of funding available.

Individuals or local watershed groups interested in improving conditions in the watersheds are strongly encouraged to review funding sources available through MDE and other state and federal agencies. Numerous state programs, including CWA Section 319 programs, are available. Other Maryland programs include the Small Creeks and Estuaries Restoration Program and the State Revolving Loan Fund.

For the surface mining permits in the watershed, the Surface Mining Control and Reclamation Act of 1977 (SMCRA, Public Law 95-87) requires a permitee for developing new, previously mined, or abandoned sites to post a performance bond that will be sufficient to ensure the completion of reclamation. Mines that ceased operations before the effective date of SMCRA (often called *pre-law* mines) are not subject to the requirements of SMCRA.

To account for the upstream impairments in the West Virginia portion of the Upper North Branch Potomac River watershed, the West Virginia Department of Environmental Protection (WVDEP) has developed two TMDLs for metals in the affected watershed. Reasonable assurance for the maintenance and improvement of water quality in the Upper North Branch Potomac River watershed rests primarily with three separate programs. Two of these programs are wholly within WVDEP, and the third program is a cooperative effort involving many state and federal agencies. Within WVDEP, the programs involved in the effort include the NPDES

Permitting Program and the Abandoned Mine Lands Program. In addition, WVDEP is involved with the West Virginia Watershed Management Network/Watershed Management Framework, which includes many state and federal agencies dealing with the protection and restoration of water resources.