UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
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Decision Rationale
Total Maximum Daily Loads
Brubaker Run Watershed
For Acid Mine Drainage Affected Segments

Signed
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Water Protection Division

Date: *8/30/2004*

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August 30, 2004

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, that may be discharged to a water quality-limited waterbody without violating water quality standards.

The Pennsylvania Department of the Environmental Protection (PADEP), Bureau of Watershed Conservation, submitted the *Brubaker Run Watershed TMDL*, dated June 29, 2004, (TMDL Report) electronically to EPA for final Agency review on June 29, 2004, followed by a printed copy which was received July 2, 2004. This report included Total Maximum Daily Loads (TMDLs) for three metals (aluminum, iron, and manganese), other inorganics (sulfates), and pH, and addresses one segment on Pennsylvania's 1996 Section 303(d) list of impaired waters, Brubaker Run, which was re-numbered and expanded on the 2002 and the proposed 2004 Section 303(d) lists of impaired waters.

EPA's rationale is based on the TMDL Report and information contained in the attachments to the report. EPA's review determined that the TMDL meets the following eight regulatory requirements pursuant to 40 CFR Part 130.

1. The TMDLs are designed to implement the applicable water quality standards.
2. The TMDLs include a total allowable load as well as individual Wasteload Allocations (WLAs) and Load Allocations (LAs).
3. The TMDLs consider the impacts of background pollutant contributions.
4. The TMDLs consider critical environmental conditions.
5. The TMDLs consider seasonal environmental variations.
6. The TMDLs include a Margin Of Safety (MOS).
7. There is reasonable assurance that the proposed TMDLs can be met.
8. The TMDLs have been subject to public participation.

II. Summary

Table 1 presents the 1996, 1998, and 2002 Section 303(d) listing information for the water quality limited segments listed in 1996. The segment was re-numbered in 2002.

Table 1. 303(d) Sub-List

State Water Plan (SWP) Subbasin: 08-C Clearfield Creek

Year	Miles	Segment ID	DEP Stream Code	Stream Name	Designated Use	Data Source	Source	EPA 305(b) Cause Code
1996	0.8 2	4026	26489	Brubaker Run	CWF	305(b) Report	RE	Other Inorganics & Metals
1998	2.9	4026	26489	Brubaker Run	CWF	SWMP	AMD	Other Inorganics & Metals
2002	New survey; new segment id (990819-0920-LMS)							
1996	Not on 303(d) list							
1998	Not on 303(d) list							
2002	7.23	990819-0920-LMS	26489	Brubaker Run	CWF	SWAP	AMD	Metals & pH

Resource Extraction=RE
Cold Water Fishes = CWF
Surface Water Monitoring Program = SWMP
Surface Water Assessment Program = SWAP
Abandoned Mine Drainage = AMD

The TMDLs were developed using a statistical procedure to ensure that water quality criteria are met 99 percent of the time as required by Pennsylvania's water quality standards at Pennsylvania Code Title 25, Chapter 96.3(c). Table 2 shows the TMDLs for Brubaker Run Watershed at the downstream-most point in the watershed.

TMDLs are a defined as the summation of the point source waste load allocations (WLAs) plus the summation of the nonpoint source load allocations (LAs) plus a margin of safety (MOS) and are often shown as:

$$TMDL = \sum WLAS + \sum LAS + MOS$$

The Brubaker Run Watershed TMDLs are shown Table 2 below.

Table 2. TMDL Summary

BrubakerRun TMDLs	Parameter	TMDL (lbs/day)	WLA (lbs/day)	LA (lbs/day)	MOS (lbs/day)
Brubaker Run Watershed 990819-0920-LMS	Fe	12.8	5.9	6.9	implicit
	Mn	16.4	8.8	7.6	implicit
	Al	13.6	5.9	7.7	implicit
	Acidity	0	0	0	implicit

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 which considers current and foreseeable conditions, the best available data, and accounts for uncertainty with the inclusion of a MOS value. Conditions, available data, and the understanding of the natural processes can change more than anticipated by the MOS. The option is always available to refine the TMDL for resubmittal to EPA for approval.

Pennsylvania's Unassessed Waters Protocol, PADEP's method of conducting biological assessments of Pennsylvania's waters, was developed in 1996 and implementation began in 1997. PADEP's goal is a statewide assessment of surface waters in Pennsylvania. After completion of the initial assessments, the long-range goal is to reassess all waters on a five-year cycle. Therefore, while the TMDL should not be modified at the expense of achieving water quality standards expeditiously, the TMDL may be modified when warranted by additional data or other information.

III. Background

The Brubaker Run Watershed is located in West Central Pennsylvania, in the northeastern corner of Cambria County. The area within the Brubaker Run watershed covers approximately 3.82 square miles with most of the land within the watershed forested and previously mined land. The mainstem of Brubaker Run is approximately 3.16 miles from its source to its confluence with Clearfield Creek at the village of Dean. Brubaker Run is designated as a cold-water fishery in PA Title 25 Chapter 93.

Multiple seams of coal, and in some cases the clay underlying the coal, have been extensively mined in the Brubaker Run watershed by numerous operators and clay refractories over many decades. Much of the affected area was left unreclaimed and several mine discharges resulted. Approximately 30-40 percent of Brubaker Run watershed has been previously affected by mining activities. Normally before surface mining activities commence, all saleable timber is removed from the site.

The last two active surface mine permits in the Brubaker Run watershed are E.P. Bender Coal Company, Surface Mine Permit (SMP) 11793025 in Dean Township, Cambria County, and

Cooney Brothers Coal Company, Mine Drainage Permit (MDP) 4270BSM1 also in Dean Township, Cambria County. There are two point source discharges for which E.P. Bender has incurred liability which are being treated together and discharged to the stream. There is one discharge on the Cooney Brothers site. These discharges have been identified as BEND and COON for the E.P. Bender and Cooney Brothers sites respectively and are shown on the map in Attachment A.

Mining is complete on both permits; however, both operations are actively treating post-mining discharges. Since liability exists for these discharges, they are considered to be point-source discharges and will be assigned waste load allocations. All other discharges in the watershed are from abandoned mines and will be treated as non-point sources.

Sampling point BRBK02 is a former clay mine discharge. The site discharges significant loads to Brubaker Run. A local watershed group has engaged the Army Corps of Engineers to do a aquatic ecosystem restoration project on the site. Allocations are made to the site as LAs.

For purposes of these TMDLs only, point sources are identified as permitted discharge points and nonpoint sources are identified as other discharges from abandoned mine lands which can include tunnel discharges, seeps, and surface runoff. Abandoned and reclaimed mine lands were treated in the allocations as nonpoint sources because there are no National Pollutant Discharge Elimination System (NPDES) permits associated with these areas. As such, the discharges associated with these landuses were assigned LAs (as opposed to WLAs). The decision to assign LAs to abandoned and reclaimed mine lands does not reflect any determination by EPA as to whether there are unpermitted point source discharges within these landuses. In addition, by approving these TMDLs with mine drainage discharges treated as LAs, EPA is not determining that these discharges are exempt from NPDES permitting requirements. PADEP treats each segment ad defined by the sampling points as a separate TMDL. The TMDLs are expressed as long-term averages. See the *Brubaker Run Watershed TMDL* report, Attachment D, for TMDL calculations.

The Surface Mining Control and Reclamation Act of 1977 (SMCRA, Public Law 95-87) and its subsequent revisions were enacted to established a nationwide program to, among other things, protect the beneficial uses of land or water resources, and public health and safety from the adverse effects of current surface coal mining operations, as well as promote the reclamation of mined areas left without adequate reclamation prior to August 3, 1977. SMCRA requires a permit for the development of new, previously mined, or abandoned sites for the purpose of surface mining. Permittees are required to post a performance bond that will be sufficient to ensure the completion of reclamation requirements by the regulatory authority in the event that the applicant forfeits. Mines that ceased operating by the effective date of SMCRA (often called “pre-law” mines), are not subject to the requirements of SMCRA.

These TMDLs were completed by PADEP to meet the eighth year (2005) TMDL milestone commitment under the requirements of the 1997 TMDL lawsuit settlement agreement. Eighth year milestones include the development of TMDLs for 40 percent of the waters listed on

Pennsylvania's 1996 Section 303(d) list of impaired waters by the effects of Acid Mine Drainage or 40 waters since 2003, and 80 percent of waters listed impaired by non-AMD related impacts or 34 waters since 2003. Delisted waters may count for 20 percent of the requirement.

Computational Procedure

The TMDLs were developed using a statistical procedure to ensure that water quality criteria are met 99 percent of the time as required by Pennsylvania's water quality standards. The Brubaker Run TMDL allocates loading to three sampling points along Brubaker Run and to two unnamed tributaries. Between March 2002 and November 2002, six samples were collected in the Brubaker Run Watershed at each of the sampling points.

A critical flow could not be identified, and the reductions specified in this TMDL apply at all flow conditions. Regression and correlation analyses between flow and concentration almost always produce little or no correlation and disclose no critical condition.

TMDLs for each parameter were determined using a Monte Carlo simulation, @RISK,[1] with the measured, or existing, pollutant concentration data. For each source and pollutant, it was assumed that the observed data are lognormally distributed. Each pollutant was evaluated separately using @RISK.

Using the collected sample concentration parameters, mean and standard deviation, the simulation performs 5000 iterations and predicts an existing long-term average concentration and this analysis shows whether or not the existing data is from a population where water quality standards are exceeded more than one percent of the time. A second simulation of 5000 iterations is performed to calculate the percent reduction necessary to meet the criteria 99 percent of the time. Finally, using the calculated percent reductions, a final simulation is run to confirm that the target value for a long-term average concentration will result in meeting water quality criteria 99 percent of the time.

The existing and allowable long-term average loads were computed using the mean concentration from @RISK multiplied by the average flow. The TMDL Report points out that the loads are being computed based on average annual flow and should not be taken out of the context for which they are intended, which is to depict how the pollutants affect the watershed and where the sources and sinks are located spatially in the watershed.

IV. Discussions of Regulatory Requirements

[1]@RISK - Risk Analysis and Simulation Add-in for Microsoft Excel®, Palisade Corporation, Newfield, NY.

EPA has determined that these TMDLs are consistent with statutory and regulatory requirements and EPA policy and guidance.

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

Water quality standards are state regulations that define the water quality goals of a waterbody. Standards are comprised of three components, including: (1) designated uses, (2) criteria necessary to protect those uses, and (3) antidegradation provisions that prevent the degradation of water quality. All of the stream segments evaluated in the BrubakerRun Watershed have been designated by Pennsylvania as Cold Water Fishes with criteria to protect the aquatic life uses. The designations for these stream segments can be found at Pennsylvania Title 25 § 93.9. To protect the designated uses, as well as the existing uses, the water quality criteria shown in Table 3 apply to all evaluated segments. The table includes the instream numeric criterion for each parameter and any associated specifications.

Table 3. Applicable Water Quality Criteria

Parameter	Criterion Value (mg/l)	Duration	Total Recoverable/ Dissolved
Aluminum (Al)	0.75	Maximum	Total Recoverable
Iron (Fe)	1.5 0.3	30-day Average Maximum	Total Recoverable Dissolved
Manganese (Mn)	1.0	Maximum	Total Recoverable
pH	6.0 - 9.0	Inclusive	N/A
Sulfate (SO_4)	250*	Maximum	N/A

*Applicable at potable water supply

Pennsylvania Title 25 § 96.3(c) requires that water quality criteria be achieved at least 99 percent of the time, and TMDLs expressed as long-term average concentrations, are expected to meet these requirements. That is, the statistical Monte Carlo simulation used to develop TMDLs and LAs for each parameter results in a determination that any required percent pollutant reduction assures that the water quality criteria will be met instream at least 99 percent of the time. The Monte Carlo simulation used 5000 iterations where each iteration was independent of all other iterations, and the observed data were assumed to be lognormally distributed for each source and pollutant.

EPA finds that these TMDLs will attain and maintain the applicable narrative and numerical water quality standards. For iron, the TMDL endpoint was expressed as total recoverable iron because all monitoring data was expressed as total recoverable iron.

The pH values shown in Table 3 were used as the TMDL endpoints for these TMDLs. In the case of freestone streams with little or no buffering capacity, the allowable TMDL endpoint for pH may be the natural background water quality; these values can get as low as 5.4 (Pennsylvania Fish and Boat Commission). However, PADEP chose to set the pH standard between 6.0 to 9.0, inclusive, which is presumed to be met when the net alkalinity is maintained above zero. This presumption is based on the relationship between net alkalinity and pH, on which PADEP based its methodology to addressing pH in the watershed. See the *BrubakerRun Watershed TMDL* report, Attachment B. A summary of the methodology is presented as follows.

The parameter of pH, a measurement of hydrogen ion acidity presented as a negative logarithm of effective hydrogen ion concentration, is not conducive to standard statistics. Additionally, pH does not measure latent acidity that can be produced from the hydrolysis of metals. PADEP is using the following approach to address the stream impairments noted on the Section 303(d) list due to pH. Because the concentration of acidity in a stream is partially dependent upon metals, it is extremely difficult to predict the exact pH values which would result from treatment of AMD. Therefore, net alkalinity will be used to evaluate pH in these TMDL calculations. This methodology assures that the standard for pH will be met because net alkalinity is able to measure the reduction of acidity. When acidity in a stream is neutralized or is restored to natural levels, pH will be acceptable ($\geq$6.0). Therefore, the measured instream alkalinity at the point of evaluation in the stream will serve as the goal for reducing total acidity at that point. The methodology that is used to calculate the required alkalinity (and therefore, pH) is the same as that used for other parameters such as iron, aluminum, and manganese that have numeric water quality criteria. EPA finds this approach to pH to be reasonable.

PADEP also has an alkalinity standard. Alkalinity (of a minimum 20 mg/l calcium carbonate except where natural conditions are less) is related to but not identical with pH. Alkalinity is a measure of the buffering capacity of the water. Adequate buffering prevents large swings in pH with additions of small amounts of acid. Although many of the AMD-impacted streams are naturally low in alkalinity, available monitoring data does not always include upstream waters unimpacted by AMD. As PADEP does not list waters for inadequate alkalinity, TMDLs are not being developed for alkalinity but PADEP should monitor the waters for alkalinity and if, after these TMDLs are implemented, alkalinity is less than 20 mg/l or natural conditions, PADEP should list the waters for alkalinity and develop TMDLs.

Although segments are listed for other "inorganics" (*i.e.*, sulfate), PADEP recently modified Pennsylvania Code Title 25 § 96.3 to include (d) to limit the application of the sulfate criterion to the point of all existing or planned surface potable water supply. Routine monitoring for AMD-impacted waters includes sulfates and the average sulfate result at BRBK01 is 1,087 mg/L, greater than the criterion.

The TMDL Report identifies the nearest potable water intake as Shawville Power Plant (PWSID 6170333) located on the West Branch Susquehanna River approximately 65 miles downstream from the mouth of Brubaker Run. A water quality monitoring station, WQN0422, is

located approximately 15 miles upstream from the power plant on Clearfield Creek. The water quality monitoring station is approximately 50 miles downstream of Brubaker Run. PADEP provided nine years of monthly sulfate data, which averages 192.8 mg/l. However, data has a large standard deviation and the 99th percentile is 592 mg/l using @RISK indicating the sulfate criterion is not met 99 percent of the time. However, PADEP has not listed Clearfield Creek as impaired by sulfates and it is presumed that no potable drinking water intakes are affected and the water quality standards are met.

2. *The TMDLs include a total allowable load as well as individual WLAs and LAs.*

There are two permitted dischargers treating post-mining discharges in the watershed which are receiving WLAs. For purposes of these TMDLs only, point sources are identified as permitted discharge points and nonpoint sources are identified as other discharges from abandoned mine lands which can include, but are not limited to, tunnel discharges, seeps, and surface runoff. Abandoned and reclaimed mine lands were treated in the allocations as nonpoint sources because there are no NPDES permits associated with these areas. As such, the discharges associated with these landuses were assigned LAs (as opposed to WLAs). The decision to assign LAs to abandoned and reclaimed mine lands does not reflect any determination by EPA as to whether there are unpermitted point source discharges within these landuses. In addition, by approving these TMDLs with mine drainage discharges treated as LAs, EPA is not determining that these discharges are exempt from NPDES permitting requirements.

The LA for each sampling point was computed using water-quality data collected from that point. The instream TMDLs for sampling points BRBK06 and BRBK02 consist of LAs made to the area above those points. The instream TMDLs for sampling points BRBK04 and BRBK03 consist of LAs to the area between them and the upstream sample point, point source discharge, and upstream load; point BRBK13 consists of a LA to the area between it and sample points BRBK02 and BRBK03 and the upstream loads; and point BRBK01 consists of the LA between it and BRBK13 and the upstream load at BRBK13. The sampling points are shown on the map in Attachment A.

Once PADEP determined the allowable concentration and load for each pollutant, a mass-balance accounting was performed starting at the top of the watershed and working down in sequence, see the flow diagram in Attachment A. This mass-balance or load tracking is explained below. Load tracking through the watershed utilizes the change in measured loads from sample location to sample location as a guide for expected changes in the allowable loads.

PADEP used are two basic rules for the load tracking between two ends of a stream segment; (1) if the measured upstream loads are less than the downstream loads, it is indicative that there is an increase in load between the points being evaluated and no instream processes are assumed. (2) If the sum of the measured loads from the upstream points is greater than the measured load at the downstream point this is indicative that there is a loss of instream load between the points, and the ratio of the decrease shall be applied to the allowable load being tracked from the upstream point.

Tracking loads through the watershed provides picture of how the pollutants are affecting the watershed, based on the available information. The analysis is done to insure that water quality standards will be met at all points in the stream. EPA finds this approach reasonable.

Table 4 presents a summary of the allowable loads for the Brubaker Run Watershed. Note the reduction identified for sampling points BRBK01, BRBK013, BRBK03, BRBK04, and BRBK05 are the reductions necessary after upstream reductions have been made.

Table 4. Summary Table for BrubakerRun Watershed

Station	Parameter	Existing Load (lbs/day)	TMDL Allowable Load (lbs/day)	WLA (lbs/day)	LA (lbs/day)	Load Reduction (lbs/day)	Reduction Identified* %
BRBK06 Upstream Point	Fe	40.8	1.6	0	1.6	39.2	96
	Mn	3.3	3.3	NA	NA	0	0
	Al	23.9	1.9	0	1.9	22.0	92
	Acidity	423.3	0	0	0	423.3	100
	Alkalinity	0					
BRBK05 Upstream Bender Coal	Fe	116.9	2.3	0	2.3	78.8	97
	Mn	72.0	0	0	0	72.0	100
	Al	100.1	1.0	0	1.0	77.2	99
	Acidity	1220.3	0	0	0	797.0	100
	Alkalinity	0					
BRBK04 Upstream Cooney Br. Coal	Fe	346.3	5.9	3.5	2.4	225.8	97
	Mn	670.9	5.2	5.2	0	593.6	99
	Al	357.2	4.6	3.5	1.1	253.4	98
	Acidity	6407.9	0	0	0	5187.6	100
	Alkalinity	0					
BRBK03 Downstream Cooney Br. Coal	Fe	459.4	9.2	2.4	6.8	109.8	92
	Mn	891.4	8.9	3.6	5.3	216.8	96
	Al	511.9	7.2	2.4	4.8	152.1	96
	Acidity	7619. 9	0	0	0	1212.0	100
	Alkalinity	0					
BRBK02 Clay Mine Discharge	Fe	143.9	2.9	0	2.9	141.0	83
	Mn	1102.5	0	0	0	1102.5	100
	Al	304.7	3.0	0	3.0	301.7	99
	Acidity	4101.8	0	0	0	4101.8	0
	Alkalinity	0					
BRBK13 Brubaker Run Downstream Clay Mine	Fe	577.8	12.1	0	12.1	0	0
	Mn	1799.4	16.2	0	16.2	0	0
	Al	826.9	10.7	0	10.7	9.8	48
	Acidity	10526.2	0	0	0	0	0
	Alkalinity	0					
BRBK01 Mouth Brubaker Run	Fe	640.4	12.8	0	12.8	61.3	93
	Mn	1636.3	16.4	0	16.4	0	0
	Al	909.7	13.6	0	13.6	80.0	85

Station	Parameter	Existing Load (lbs/day)	TMDL Allowable Load (lbs/day)	WLA (lbs/day)	LA (lbs/day)	Load Reduction (lbs/day)	Reduction Identified* %
	Acidity	12140.8	0	0	0	1614.6	100
	Alkalinity	0					

LTA = Long Term Average
WLA = point source loads
LA = total nonpoint loads entering segment, including any upstream loads
*Reduction required after upstream reductions are made

PADEP allocated only to two point sources. Where there are active mining operations or post-mining discharge treatment in the watershed, Federal regulations require that subsequent to TMDL development and approval, point sources permitted effluent limitations be water quality-based.[2] In addition, PA Title 25, Chapter 96, Section 96.4(d) requires that WLAs shall serve as the basis for determination of permit limits for point source discharges regulated under Chapter 92 (relating to NPDES permitting, monitoring and compliance). Therefore, no new mining may be permitted within the watershed without reallocation of the TMDL.

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

Brubaker Run is located in an area that was extensively mined. The TMDLs were developed using instream data which account for existing background conditions.

4. The TMDLs consider critical environmental conditions.

The reductions specified in this TMDL apply at all flow conditions. A critical flow condition could not be identified from the data used for this analysis. The average flow for each sampling site was used to derive loading values for the TMDL.

5. The TMDLs consider seasonal environmental variations.

All sample sets included data points from various seasons, which together with the lack of correlations between flow and concentration, indicate that PADEP considered seasonal variations to the extent that data was available.

6. The TMDLs include a MOS.

The CWA and Federal regulations require TMDLs to include a MOS to take into account any lack of knowledge concerning the relationship between effluent limitations and water quality. EPA guidance suggests two approaches to satisfy the MOS requirement. First, it can be met

[2]It should be noted that technology-based permit limits may be converted to water quality-based limits according to EPA's *Technical Support Document For Water Quality-based Toxics Control*, March 1991, recommendations.

implicitly by using conservative model assumptions to develop the allocations. Alternately, it can be met explicitly by allocating a portion of the allowable load to the MOS.

PADEP used an implicit MOS in these TMDLs by assuming the treated instream concentration variability to be the same as the untreated stream's concentration variability. This is a more conservative assumption than the general assumption that a treated discharge has less variability than an untreated discharge. By retaining variability in the treated discharge, a lower average concentration is required to meet water quality criteria 99 percent of the time than if the variability of the treated discharge is reduced.

With respect to iron, PADEP identified an additional implicit MOS in the analysis and TMDL development by treating the iron water quality criterion as if the 1.50 mg/l were a maximum value instead of a thirty-day average value.

7. There is reasonable assurance that the proposed TMDLs can be met.

Currently, the Army Corps of Engineers has been engaged by a local watershed group to do a Section 206 Aquatic Ecosystem Restoration Project on the abandoned Brubaker Run clay mine. This project is in the very early stages. First, the Corps must do a feasibility study that should take 12 to 24 months to complete. Upon completion of the feasibility study and design of a treatment system for the discharge is completed by the Corps, the watershed group must sign a construction agreement with the Corps and provide 35 percent match monies for the total project. Remediation/ treatment of this discharge is several years at the earliest.

E.P. Bender and Cooney Brothers operators are currently working with the Cambria District Mining Office to calculate trust fund agreements to insure adequate funding will be available to provide perpetual treatment for their respective discharges.

In addition, the *Recommendations* section highlights what can be done in the watershed to eliminate or treat pollutant sources. Aside from PADEP's primary efforts to improve water quality in the BrubakerRun Watershed through reclamation of abandoned mine lands and through the NPDES permit program, additional opportunities for reasonable assurance exist. PADEP expects activities, such as research conducted by its Bureau of Abandoned Mine Reclamation (BAMR), funding from EPA's 319 grant program, and Pennsylvania's Growing Greener program will also help remedy abandoned mine drainage impacts. PADEP also has in place an initiative that aims to maximize reclamation of Pennsylvania's abandoned mineral extraction lands. Through Reclaim PA, Pennsylvania's goal is to accomplish complete reclamation of abandoned mine lands and plugging of orphaned wells. Pennsylvania strives to achieve this objective through legislative and policy land management efforts, and activities described in the TMDL report.

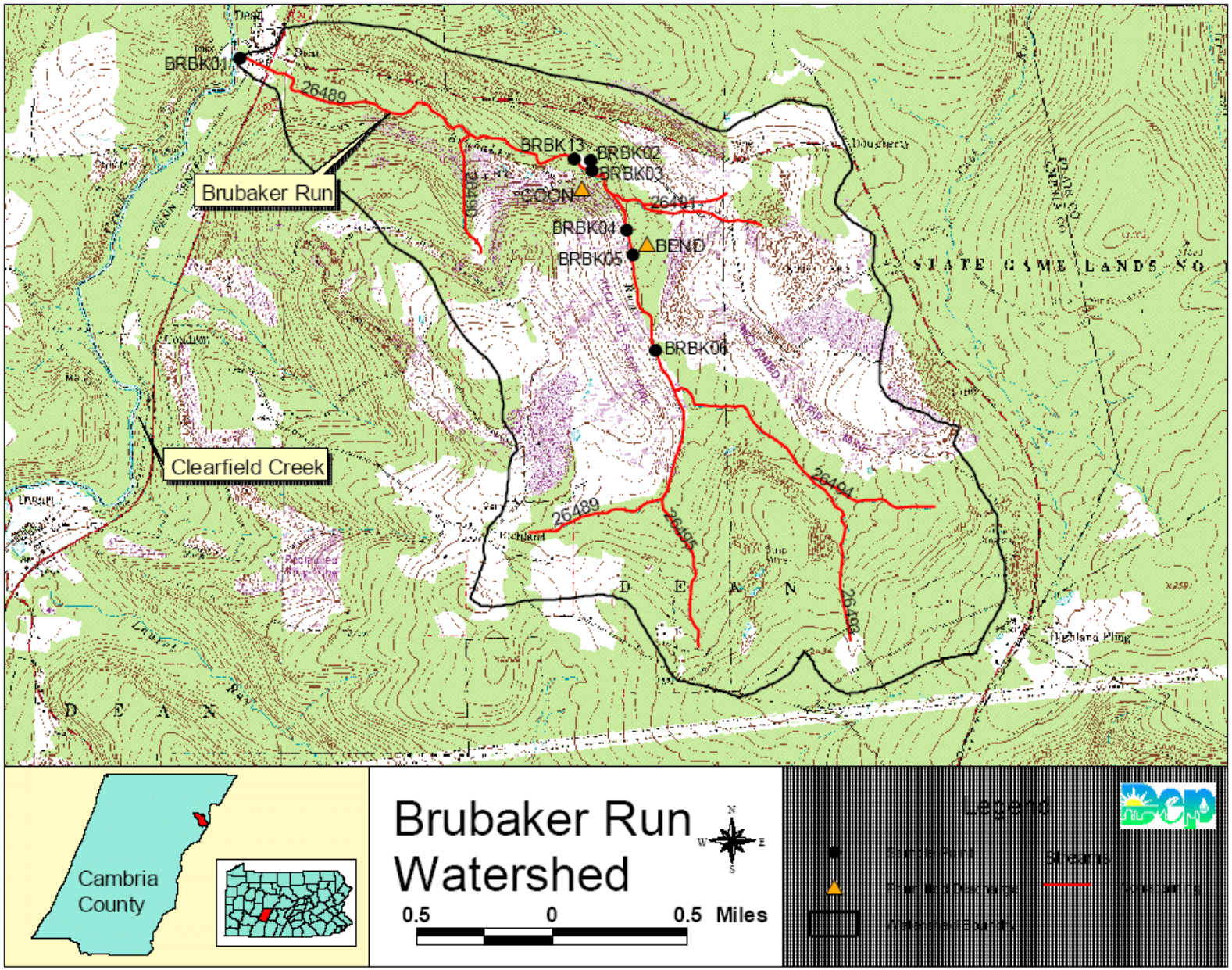
8. The TMDLs have been subject to public participation.

PADEP public noticed the draft TMDLs in the *Pennsylvania Bulletin* on February 7, 2004, and in the *Sumerset Daily American* on February 4, 2004. A public meeting was held on March 4, 2004, at the Confluence community Center in Confluence, Pennsylvania, to discuss the proposed TMDLS.

Although not specifically stated in the TMDL Report, PADEP routinely posts the approved TMDL report their web site: www.dep.state.pa.us/watermanagement_apps/tmdl/.

Attachment A

BrubakerRun Watershed Maps


BRBK01
26489
Brubaker Run
BRBK13
BRBK02
BRBK03
COON
26491
BRBK04
BEND
BRBK05
STATE GAME LANDS
BRBK06
Clearfield Creek
26489
26491
26495
26492
Cambria County
Brubaker Run Watershed
N
W
E
S
0.5 0 0.5 Miles
Legend

Brubaker Run Sampling Station Diagram
Arrows indicate direction of flow.
(Diagram not to scale)