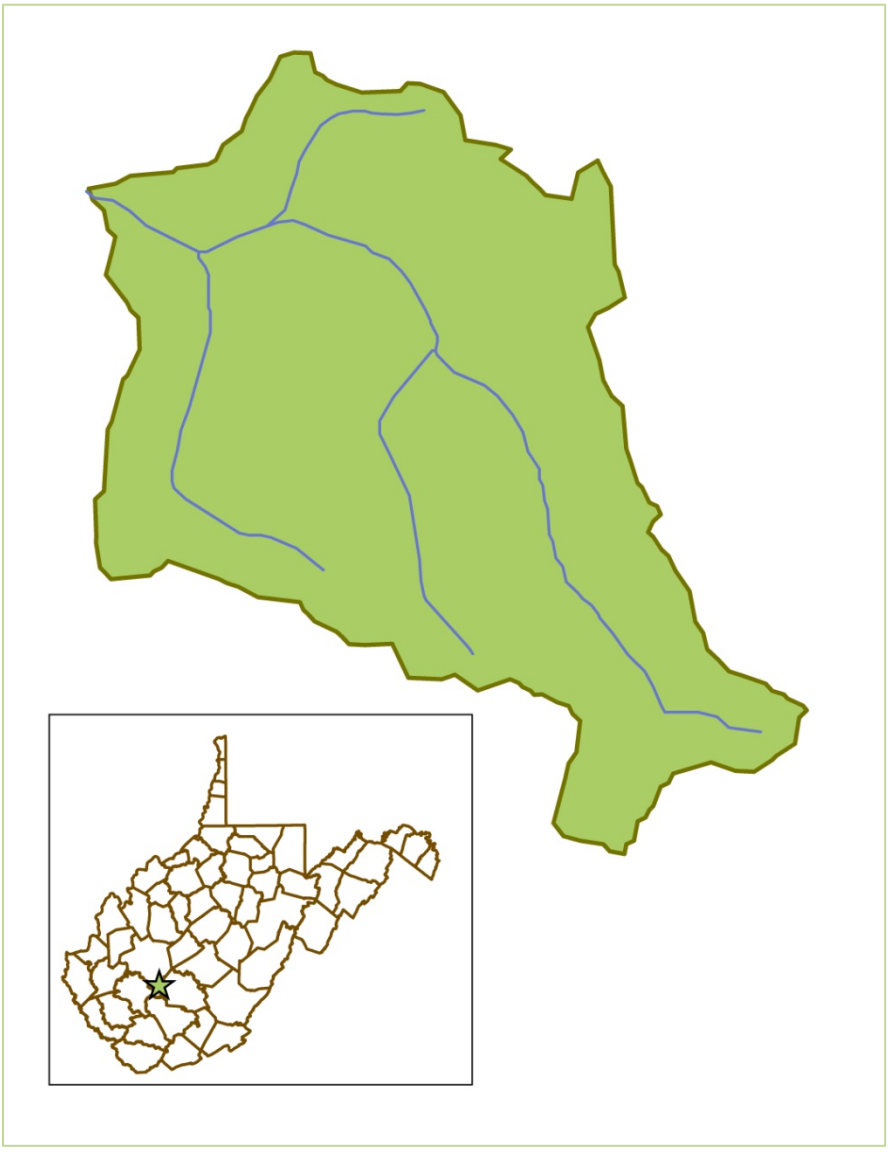
Cane Fork of Cabin Creek Watershed Based Plan

West Virginia Stream Code WVK-61-J

January 2012



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Nonpoint Source Program

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Introduction

Cane Fork (WVK-61-J) is a 3.16 mile long tributary of Cabin Creek of the Kanawha River. The watershed is approximately 1960 acres, or 3.06 square miles. It is located near the town of Eskdale in Kanawha County, WV. Land use in the Cane Fork watershed is predominately forest; however barren land and light intensity urban make up a small percentage of the watershed. Mining has been the predominant industry in Cane Fork since the early 1900's.

The Peerless coal seam of the Upper Kanawha Formation runs through Cane Fork and much of southern Kanawha County. When disturbed, this seam is known to be one of the most deleterious in southern West Virginia. Deep mining persisted in Cane Fork through the first half of the 20th century and strip mining of above drainage coal occurred during the 70's and 80's. In 1983, Imperial Colliery Co. permitted much of land near Cane Fork under permit O-016083. This permit has since been released and currently there are no active mining permits in the watershed.

Cane Fork was included in the 2004 Upper Kanawha River TMDL. TMDL's exist for Iron, Aluminum, Manganese and pH in Cane Fork and these impairments are listed as the cause of biological stress in the watershed. Much of Cane Fork is devoid of aquatic life and the streambed is badly stained and armored from iron and aluminum precipitate. This environmental blemish has lowered property values and had a negative impact on community pride.

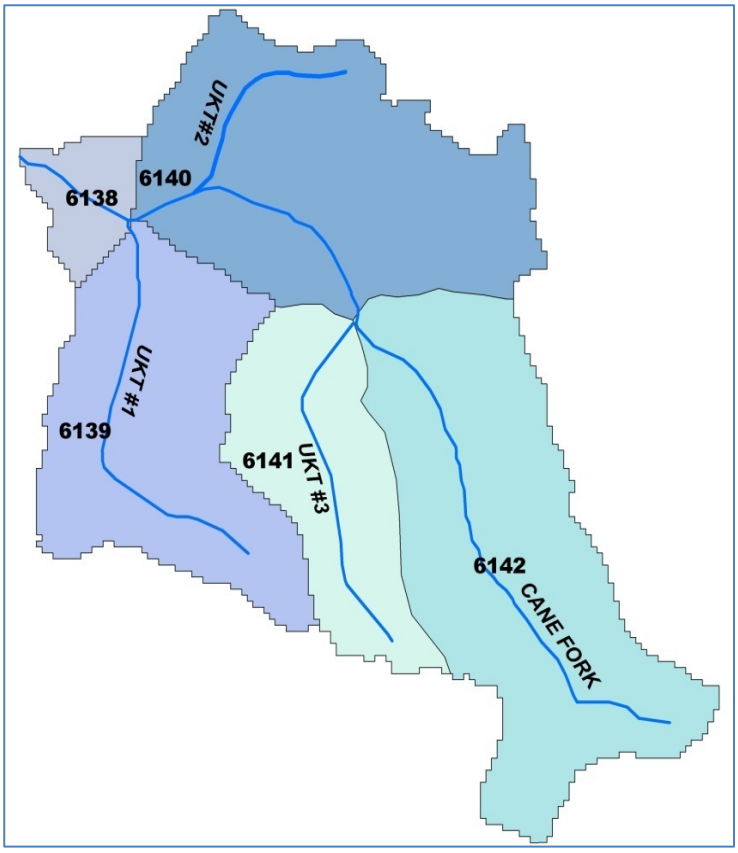

Figure 1: Cane Fork Subwatersheds

WVDEP Watershed Assessment Branch (WAB) data shows biological impairments ranging from slightly impaired in the upper reaches of UKT #3 to severely impaired at the mouth of Cane Fork. Corresponding water quality data collected by the WAB illustrates high levels of metals and low pH associated with AMD are characteristic of the tributaries of Cane Fork, with the cumulative impacts evident in mainstem Cane Fork as well as downstream portions of Cabin Creek.

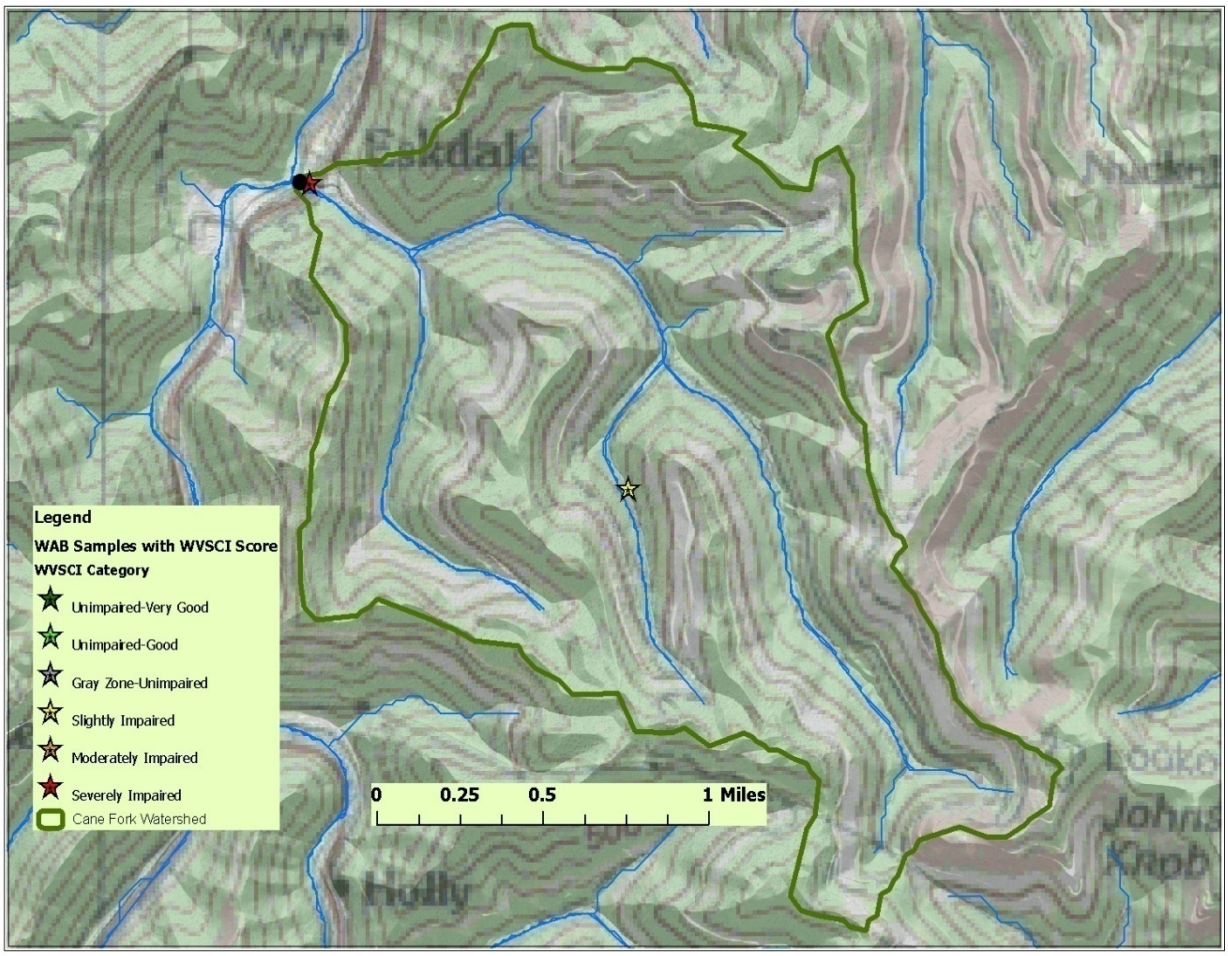

Figure 2: WVSCI rankings for Cane Fork (WVDEP WAB data)

A watershed association was created in Cabin Creek in 2000 to address important issues that affect the small communities in the area. The Cabin Creek Watershed Association (CCWA) was once very active and has formed many partnerships over the years with local, state and federal agencies as well as industry and business. A Cabin Creek Project Team also existed and this group supported any and all efforts to improve water quality within the watershed, including Cane Fork. A Clean Water Act Section 319 Proposal, Cane Fork AMD Passive Treatment Project 1**,** was approved for Fiscal Year 2009 contingent of the development and approval of the Cane Fork Watershed Based Plan. In the past few years, the Cabin Creek Watershed Association has become less active due to an aging demographic within the group. Though the core of the association still exists, the approval of the Watershed Based Plan and implementation of the first project may generate a renewed interest in an area that has endured the negative impacts of mining.

A. Causes and Sources of Impairment

Acid Mine Drainage from Abandoned Mine Lands

Metals and pH pollution from Acid Mine Drainage (AMD) are the primary sources of impairment in Cane Fork. There are eleven known AMD discharge points within the watershed, as shown in Figure 1. These sites are classified as Abandoned Mine Lands (AML), resulting from mining prior to the passing of SMCRA in 1977 and have been identified as the major stressors in the watershed. Early to mid 20th century deep mining has left the Peerless coal seam exposed resulting in polluted runoff and seepage. Strip mining of multiple Upper Kanawha Formation coal seams also occurred in the watershed as recently as the 1980's. The Cane Fork TMDL calls for reductions in aluminum and iron from barren land resulting from post-SMCRA mining activity, as well as from roads in SWS 6142.

Subwatershed	Stream code	Stream name	Al	Fe	Mn	pH	Bio
Cabin Creek	WVK-61-J	Cane Fork	X	X	X	X	X

The Cane Fork TMDL was created in 2004. It is important to note that since then water quality standards pertaining to manganese have changed. Since Cane Fork is not within five miles of a public water intake, this plan will not address manganese reductions. However, the AMD treatment systems that will be recommended for the treatment and removal of iron and aluminum will also treat and reduce manganese.

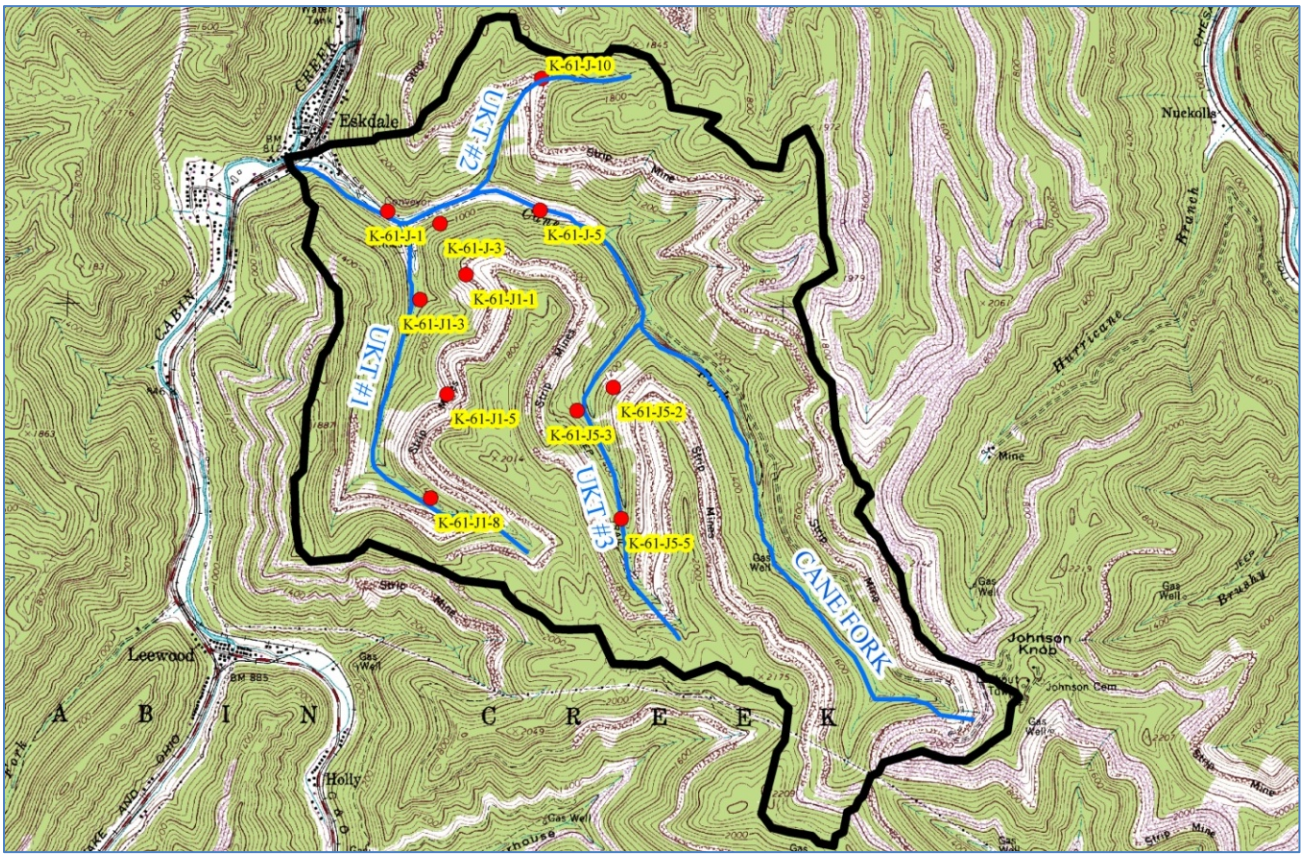

Figure 3: AMD discharge points within the Cane Fork watershed.

Sediment

Though no TMDL for sediment exists for Cane Fork, sediment reductions are called for in Cane Fork as part of the Cabin Creek TMDL. Specific sources include barren land, roads, oil and gas and grasslands. There are 30 active oil and gas wells and approximately 34 miles of dirt roads in the watershed. Roads are primarily oil and gas well service roads along with abandoned roads from previous mining. Grassland and barren land within the watershed has resulted mainly from surface mining activities. There are no current mining permits in the area; all permittee's have been released and the affected land reclaimed. Until total reforesting occurs sedimentation will continue to be a problem.

B. Load Reductions

Iron and Aluminum

The load reductions planned in this WBP are based on the TMDL. The TMDL is a Load Allocation (LA) plus a 5% Margin of Safety (MOS). Subtract the TMDL from the Baseline Load to determine the required load reductions needed to restore water quality standards to the stream. Figure 3 shows the TMDL table for Cane Fork by land uses. To achieve success 45,620 lbs/yr of aluminum and 22,843 lbs/yr of iron must be removed from AML sources. Reductions from other sources should include 845 lbs/yr of aluminum and 706 lbs/yr of iron.

Metal	SWS	ABANDONED MINES				ROADS				BARREN LAND			
		Baseline Load (lbs/yr)	Allocated Load (lbs/yr)	% Reduction	Reduction lbs/yr	Baseline Load (lbs/yr)	Allocated Load (lbs/yr)	% Reduction	Reduction lbs/yr	Baseline Load (lbs/yr)	Allocated Load (lbs/yr)	% Reduction	Reduction lbs/yr
Aluminum	6138	221	134	39	87	225	225	0	0	0	0	0	0
Iron	6138	118	118	0	0	188	188	0	0	0	0	0	0
Aluminum	6139	30,032	336	99	29,696	213	213	0	0	49	49	0	0
Iron	6139	17,215	1,382	92	15,833	102	102	0	0	23	23	0	0
Aluminum	6140	14,682	297	98	14,385	702	702	0	0	38	38	0	0
Iron	6140	9,463	2,474	74	6,989	587	587	0	0	32	32	0	0
Aluminum	6141	1,579	138	91	1,441	218	218	0	0	47	47	0	0
Iron	6141	208	208	0	0	52	52	0	0	11	11	0	0
Aluminum	6142	12	0	98	12	1,158	579	50	579	532	266	50	266
Iron	6142	21	0	98	20	968	484	50	484	445	222	50	222
T Al		46,526			45,620	2,516			579	666			266
T Fe		27,026			22,843	1,897			484	511			222

Table 1: TMDL Table

While not a part of the TMDL, two vital parameters needed to design passive treatment systems are pH and acidity. Most passive treatment systems are designed to neutralize acid and raise pH to a point where the metals come out of solution and settle in a collecting structure or remain within the system. The National Mine Lands Reclamation Center (NMLRC) of West Virginia University (WVU) monitored part of this watershed prior to the development of the 2008 Section 319 grant proposal. The results of that monitoring are included in Figure 4. Passive systems can be designed to neutralize any percentage of the acid required, even to the point of making the stream alkaline. For

this WBP the systems discussed in Section C will only achieve the necessary load reductions. The percentage reductions required in the TMDL (Figure 3) shows that for SWS 6139, 6140, 6141 and 6142 the amount of neutralization and metal reductions will have to approach 100%.

Sub Watershed	pH	Net Acidity	Modeled Flow	Acid load (ton/yr)
SWS 6138	3.54	61.48	5.53	334.66
SWS 6139	2.97	138.51	1.2	163.3
SWS 6141	3.79	48.93	0.81	39.17

Table 2: NMLRC acidity data

Cane Fork is a relatively small watershed and as shown in Figure 3 the AML discharges are scattered throughout the subwatersheds. Therefore each subwatershed will be a separate project as all discharges are gathered and routed into the treatment system. SWS 6142 is not impacted by AMLs but by erosion from roads and barren land and will require erosion control style projects.

Project Load Reduction Estimates		
SWS/Project	*Fe Reduction lbs/yr*	*Al Reduction lbs/yr*
6138	46	87
6139	17,043	29,696
6140	9,274	14,385
6141	189	1,441
6142	726	857
Totals	27,278	46,466

Table 3: Estimated Project Load Reductions

Table 3 indicates that iron reductions will actually exceed the reductions called for in the TMDL. This is because it is impossible to separate the treatment of the two metals within the system. If aluminum is the greater pollutant of concern then the system will be designed to reduce it to the desired levels. The iron will receive the same treatment and can be expected to be reduced by a similar percentage.

In SWS 6142 metal reductions will have to come from erosion control projects on dirt roads and barren land. This subwatershed has 10.87 miles of unpaved roads. Load reductions from road restorations needs to equal or exceed 579 lbs/yr of aluminum and 484 lbs/yr or iron. This subwatershed contains approximately 617 acres of land of which a small part is barren. According to the TMDL reductions for barren lands should be 262 lbs/yr of aluminum and 222 lbs/yr of iron.

C. Nonpoint Source Management Measures

The largest source of metals contamination in Cane Fork comes from AMD discharges. A series of passive AMD treatment systems should be put in place to treat the impaired water. The West Virginia University Water Research Institute and NMLRC have designed the initial project using a combination of passive treatment technologies in subwatershed 6141 (K-61-J-5). Reductions of iron

and aluminum are also called for from roads and barren land in subwatershed (SWS) 6142 so land reclamation will be included in the plan. Ideally, metals reduction implementation will occur as five separate projects in Cane Fork.

Project 1- A project proposal for this implementation measure titled Cane Fork AMD Passive Treatment, Project 1, was submitted to the EPA in August 2008. This project will focus on SWS 6141 and UKT #3; it will include AMD discharge points K-61-J5-5, K-61-J5-3 and K-61-J5-2. The proposal calls for three limestone leach beds and an open limestone channel. Only aluminum reductions are required in the TMDL for SWS 6141. However, the conceptual design for this project will reduce iron loads as well. This project will yield the removal of 1,441 lbs/yr of aluminum, 189 lbs/yr of iron and 151 pounds per year of manganese.

Project 2- This project will encompass all of SWS 6139 (K-61-J1-8, K-61-J1-5, K-61-J1-3). AMD seeps will be passively treated using techniques listed below and comparable to those discussed in the Project 1 project proposal. Further water quality testing and a survey will be necessary before engineering a specific design. The passive treatment system in SWS 6139 will be designed to remove the aluminum since it is a greater quantity. Expected load reductions for the subwatershed project are 29,696 lbs/yr of aluminum and 17, 043 of iron.

Project 3- This project will treat a single AMD discharge from SWS 6140 (K-61-J-10). Passive treatment techniques will be used in this project as well to neutralize the acid and allow the metals to settle out of the water. This discharge into an intermittent stream has not been adequately measured. Water quality and engineering assessments must be made prior to the project.

Project 4- Three AMD discharges (K-61-J1-1 (SWS 6138), K-61-J-3, K-61-J-1 (SWS 6140)), occur along the mainstem of Cane Fork, within 1 mile of the mouth. Project implementation will be more difficult here because of topographical constraints and limited space. The stream banks and surrounding area of the lower mainstem of Cane Fork are comprised almost entirely of coal mining spoil and refuse also known as gob. Metals are likely being leached by surface water as it filters through the soils surrounding Cane Fork and are being deposited into the stream. The area of refuse involves approximately 5 acres in direct contact with the stream. This project should achieve reductions of 14,472 lbs/yr aluminum and 9,320 lbs/yr of iron in these two subwatersheds.

Treatments such as alkaline injection and/or land reclamation offer options to treat these sources. The possible options include:

1. Alkaline injection, in this option injection wells are drilled into the refuse so an alkaline solution may be injected into the refuse. Neutralization of the acid bearing materials occurs inside the refuse pile.
2. Another form of alkaline injection is more passive. It involves removing the refuse and mixing with alkaline materials then covering in place.
3. Covering in-place, in this option the refuse is left in place but covered with an impermeable cover, such as clay, and then covered with soil and vegetated. Surface water runoff is diverted away from the pile as much as possible. Generally, this method has not proven to be highly effective in treating AMD. However, covering the pile with alkaline materials such as kiln dust or limestone sand before the impermeable layer has improved water quality.

4. Removal and disposal of the refuse, this option may include remining or removal and encapsulating in another location.

Option 1 requires funding for timely injections to be effective over a long period of time. Option 2 would be costly as it would require the removal of the refuse for mixing then returned and covered. However it has been shown to be completely effective in treating AMD. Option 3 would likely be the least expensive as the refuse itself is compacted and not greatly disturbed. Average costs for this option would start at $30,000 per acre and would rise with additional treatments or structures. In this option some form of stream bank protection would be needed to protect the refuse from natural stream erosion. Option 4 would have higher costs than Option 3, unless it was remined, but would have the greatest impact on improving water quality. Remining is highly unlikely in today's economy. Full water quality and engineering assessments will be needed to determine the option that is most cost effective. However, Option 3 is the most likely option and will be used for cost estimates.

Project 5- This project includes the upgrades to any of the dirt roads within the watershed and the restoration of barren lands. This is considered to be the only source of metals in SWS 6142. In SWS 6142 there are approximately 10.87 miles of unpaved roads in the watershed, which are the primary source of iron and aluminum from sediment according to the TMDL. Fifty-two per cent of the dirt roads are no longer in use, having been abandoned after mining ceased in the 1980's. Forty-two per cent, or 5.29 miles, are still used as access roads for oil and gas activity. An effective road restoration project throughout the subwatershed can be expected to reduce aluminum by 106.5 lbs/yr per mile and reduce iron by 89 lbs/yr per mile restored. To achieve the TMDL 5.4 miles of erodible roads must be upgraded. The activities involved in road upgrades can include: proper drainage of the roads, routing water away from the road, grading and covering with limestone gravel. The NPS program and the CCWA will work with the land owner, Ohley Land Company, and the oil and gas industry to install proper drainage and use other BMP's to ensure that existing roads are stabilized. Abandoned roads can be vegetated and blocked from further use.

Road intersection in SWS 6142

Nature often restores barren lands but if any actions are needed to enhance natural reclamation these could include tree planting and hydro-seeding barren areas. A comparison of aerial photos between 1996 and 2009 show improved vegetative density; it can be assumed that the vegetation has continued to stabilize those disturbed areas over the last five years since the TMDL data was gathered. Barren land restoration, natural or man-made, can be expected to reduce aluminum by 0.86 lbs/yr and iron by 0.72 lbs/yr per acre restored.

The load estimates for SWS 6142 are based on averages for the entire subwatershed. However, the nature of this kind of impairment is that most of the problem occurs in "hot spots" where excessive erosion occurs, especially in the barren land category. Problems with dirt roads can exist through the entire course of the road or be due to "hot spots". Surveys of the subwatershed's roads and barren land will be needed to focus actions. Individual project's load reductions may exceed the average.

The following technologies will be incorporated into the first four passive treatment projects:

Open Limestone Channels –The primary function of the OLC will be to treat the water coming from mining located in the upper extents of the valley and to collect the effluent from the limestone beds located at the known sources. The secondary function of the channel will be to collect any precipitate that may gather in the channel. Approximate cost for the OLC is $25 per linear ft of channel.

Limestone Leach Beds –Limestone leach beds will be installed in conjunction with the channel system. One leachbed will be installed at each known AML discharge location. The leach beds for Project 1 will be approximately 100 feet long x 25 feet wide x 3 feet deep and cost $14,693 each. The exact sizing of the beds at each project will be determined after a survey is complete and water chemistry at the seeps has been analyzed.

The passive treatment systems will be designed to achieve the maximum amount of reductions possible at each seep location. Pre-construction and historic data will be used to size the systems properly and achieve complete neutralization of the acid loading entering Cane Fork.

D: Technical Assistance and Funding

In order for successful implementation of this Watershed Based Plan, several partners including federal and state agencies, the watershed association, consultants, nonprofit assistance providers, academic institutions, and citizens will collaborate in order to provide the technical and financial resources.

All or relevant parts of this WBP will be published and distributed to potential technical and/or financial assistance providers in order to provide background information, demonstrate the need for the projects being proposed, and leverage the resources needed to implement this plan.

The initial project under this plan has been submitted to EPA. Partners included the WVDEP, WV Water Research Institute, NMLRC, Office of Surface Mining(OSM), and the CCWA. Development of the remaining projects shall include the above referenced entities as well as the WVDEP Abandoned Mine Lands Program, which has cooperated and assisted with past AMD related projects in the area.

Funding for the projects can be provided by several sources including CWA 319 funding, administered by the WVDEP Nonpoint Source Program, Watershed Cooperative Agreement Program (WCAP) administered by OSM, AML funds and mitigation funding from WVDEP's Division of Mining and Reclamation. The funding will be used for sampling and monitoring, administration, engineering and construction. NMLRC is providing technical and administrative assistance for the AMD systems.

The OSM-WCAP funding may be used to pay for the construction and administrative costs. The preliminary construction estimate for the first project site is $ 99,000 which includes mobilization/demobilization, construction of the three limestone leach beds and open limestone channels, as well as miscellaneous costs such as erosion control, pipes from the leach beds, and

other miscellaneous costs. $1,000 of the WCAP will be used for administrative costs. The budget breakdown below is for Project 1 and reflects cost estimates for passive AMD treatment.

Project Cost Share	WVDEP	OSM-WCAP	Total
Administration (NMLRC/CCWA)	$15,915	$1,000	$16,915
Implementation	$23,269		$28,474
Engineering	$18,355		$18,355
Construction	$87,256	$99,000	$186,256
Total	$150,000	$100,000	$250,000

Budget Breakdown

The following project budget breakdown assumes a 60% CWA 319 funding and 40% matching funds from other sources classified as non-federal funds.

Project	**CWA 319**	**Match**	**Total**
Project 1	$150,000	$100,000	$250,000
Project 2*	$625,000	$417,000	$1,042,500
Project 3**	$100,000	$66,667	$166,667
Project 4***	$142,000	$112,000	$254,000
Project 5****	$27,000	$18,000	$45,000
Total	$1,044,000	$713,667	$1,757,667

** Project 2 is large enough it may be desirable to divide this into two phases in order to acquire adequate funding.*
*** Project 3 needs additional assessment to determine accurate costs but is smaller than Project 1, which was used for cost estimates.*
**** Project 4 assumes the base cost of the least expensive option and the least expensive form of stream bank protection. If other options are employed costs will be higher.*
*****Project 5 assumes a $5000 cost per mile, which has been used in other projects, and match will come from donation of plants and materials and labor provided by CCWA.*

E: Education Component

As part of the education and outreach component of these projects, the National Mine Land Reclamation Center will present any significant findings associated with this project at professional conferences through talks and/or poster presentations. The project will also be listed on WVDEP's website. Additionally, with landowner permission, an informational sign designating the project and its sponsors will be displayed near the mouth of Cane Fork.

The WVDEP will work closely with the CCWA to communicate progress and other information to the local residents. The CCWA will inform residents through their newsletter and meetings. The WVDEP will also provide outreach to the local communities through the WV Save Our Streams (WVSOS) Program. WVSOS instructs citizens on how to monitor streams but also covers nonpoint source pollution with cause and impact examples. Another program in WVDEP, Project Wet, can be used to reach the teachers in Sharon Elementary School just downstream from Cane Fork. Using these contacts and programs, tours open to school children and residents can be arranged to inform them of the reason and benefits of the projects.

The projects should also give the local communities and watershed organization a renewed sense of accomplishment that is desperately needed in these rural reaches of Kanawha County. Through the development and implementation of projects proposed in this plan, the local community will be a valuable resource and key component to achieving success. By partnering with several state and federal agencies, as well as research institutions, the framework will be arranged to serve as a model for other restoration efforts in the Southwestern region of West Virginia.

Section F, G, & H: Schedule for Implementing NPS Management Measures,

Description of Milestones, and Measurable Goals

The project team will function to coordinate and monitor the success of implementation. The WVDEP Western Basin Coordinator and NP Coordinator will also monitor the implementation schedule. The milestone schedule will serve as measurable milestones. If any milestone appears to be falling behind schedule the project team with the coordinators will assess the reasons and recommend actions to correct any problems. Each project will occur in five phases: pre-construction sampling, survey/engineering, permitting, construction, and post-construction sampling.

Upon approval of the Cane Fork WBP, implementation of the first 319 Incremental Grant Proposal: AMD Passive Treatment Project 1 will start. This project will have to be implemented at an accelerated pace to finish before the end of the grant on September 30, 2012.

Cane Fork AMD Passive Treatment Project 1 Milestones and Schedule:

Duration	2009				2010				2011				2012			
Quarters	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task																
Pre-const sampling																
Surveying/engineering																
Permitting																
Construction																
Post-const sampling																

By the first quarter of 2013 sufficient data and analysis should have been developed to determine success. The expected load reductions are: 1,441 lbs/yr of aluminum and 189 lbs/yr of iron or 3% of required aluminum reductions and .08% of iron reductions.

Cane Fork AMD Passive Treatment Project 2 Milestones and Schedule: Proposal submission 2012

Duration	2013				2014				2015				2016			
Quarters	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task																
Pre-const sampling																
Surveying/engineering																
Permitting																
Construction																
Post-const sampling																

By the first quarter of 2017 sufficient data and analysis should have been developed to determine success. The expected load reductions are: 29,696 lbs/yr of aluminum or 64% and 17,043 lbs/yr of iron or 72.3% of TMDL required reductions.

Cane Fork AMD Passive Treatment Project 3 Milestones and Schedule: Proposal submission 2013

Duration	2014				2015				2016				2017			
Quarters	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task																
Pre-const sampling																
Surveying/engineering																
Permitting																
Construction																
Post-const sampling																

This project will require a project team pre-proposal reconnaissance to determine its real status as to whether it can be incorporated into another project or be a stand-alone project. This reconnaissance will occur in 2012 with a project team decision made prior to the submission of the proposal for Project 2.

Cane Fork AMD Passive Treatment Project 4 Milestones and Schedule: Proposal submission 2014

Duration	2014				2015				2016				2017			
Quarters	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task																
Pre-const sampling																
Surveying/engineering																
Permitting																
Construction																
Post-const sampling																

Project 4 is a different type of passive treatment that will involve different partners and so can be pursued at the same time as Project 3. By the first quarter of 2018 sufficient data and analysis should have been developed to determine success. The expected load reductions are: 14,385 lbs/yr of aluminum or 31% and 9274 lbs/yr of iron or 39% of TMDL required reductions. At this time aluminum should be reduced by 98% and iron reductions will have already surpassed required TMDL reductions.

Project 5, the abandoned road and barren land reclamation project, will require identification of specific project areas, coordination with property owners, and development of a strategic reclamation plan for these areas. These tasks should be completed by 2012. A project proposal can be submitted by July 2013 with completion by the fall of 2014. The environmental results from this project are expected to be 857 lbs/yr or aluminum or 2% and 726 lbs/yr of iron or 3% of the required reductions.

I: Monitoring

Each project listed in this plan will be implemented by a grant or mitigation applicant who will monitor their projects for success. Overall responsibility for compiling the data, reporting the results and supplementing for any data gaps will be with the Nonpoint Source Program (NPS) within WVDEP. All data to be considered must be collected with the protocols of an EPA approved Quality Assurance Project Plan (QAPP) or submit a QAPP for approval.

Project 1 has already been submitted as a workplan from NMLRC. Their monitoring plan calls for monthly sampling of acidity, alkalinity, pH, flow, Fe, Al, Mn, Ca, Mg, and SO_4. The other projects will also include a monitoring plan that will, at a minimum:

- Do project monitoring for acidity, pH, flow, Al, Fe and Mn. Additional samples and parameters can be added.
- The monitoring sites will be at the project outfalls to measure project load reductions.
- Monitoring will be conducted enough times to represent varying flow conditions, at least twice a year.

Two additional sites will be selected at the first suitable riffle near the mouth of Cane Fork (SWS 6138) and SWS 6142. Monitoring will occur at these sites at least before all projects start and after all projects finish. The site at the mouth of Cane Fork will be used to determine when the entire stream has attained water quality standards. These two sites will include, in addition to the above listed parameters, conductivity and biological (macroinvertebrates) sampling. Biological sampling will be done by using the WVSOS Level 3 protocols, which are a simplified family level identification.

The Watershed Assessment Branch (WAB) of WVDEP monitors all the watersheds of the state on a five year cycle. The Upper Kanawha watershed which includes Cabin Creek and Cane Fork will be monitored by WAB in 2016 and 2021. The NPS will request monitoring at the appropriate time for WAB to include the mouth of Cane Fork in the assessments. When the data from the projects and NPS shows that Cane Fork has reached water quality standards, that data will be presented to WAB to determine if Cane Fork will be removed from the impaired streams list.

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