Mitigation Monitoring Report

White Flame Energy, Inc.

Evans Ferrell Branch

Surface Mine No. 10
(Permit No. S-5015-01)

June 2010

Prepared By:

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1.0 Project Overview

1.1 Permit Numbers

~~WV DEP Permit No. S-5020-99~~ S-5015-01
~~USACE ID No. 200200264~~ 2003-467

1.2 Contact Information

Permittee: White Flame Energy, Inc.
148 Bristol East Road
Bristol, Virginia 25202

Consultant: Compliance Monitoring Labs Inc.
50 Caney Branch Road, Suite 1
Chapmanville, WV 25508

1.3 Parties

Compliance Monitoring Labs, Inc. (CMLI) was hired in 2010 to evaluate the White Flame Energy, Inc. Compensatory Mitigation Plan developed by Potesta & Associates, Inc. in July 2003. The mitigation sites were evaluated in June 2010.

1.4 Project Purpose and Summary

As stated in the approved mitigation plan, the purpose is to replace the aquatic resources that may be lost or adversely impacted as a result of the activities associated with Surface Mine No. 10. White Flame Energy is required to mitigate for 2,200 feet of ephemeral and 2,380 feet of intermittent stream channel to be permanently impacted by Valley Fill No. 3.

1.5 Location Description

Mitigation projects required as a result of authorized activities on Surface Mine No. 10 are located within Evans Ferrell branch a tributary of Pigeon Creek. Pigeon Creek is a tributary of the Tug Fork watershed. Tug Fork is a tributary of the Big Sandy River. These watersheds are located on the Delbarton, West Virginia United States Geological Survey (USGS) topographical quadrangle.

1.6 Mitigation Site Directions

From Interstate 64 eastbound, take Exit 58A onto US-119 South toward Williamson for approximately 60.6 miles. Turn left onto State Route (SR) 65 toward Delbarton and go for approximately 7.6 miles. Go straight through intersection with SR 52. Follow SR 52 south for approximately 2.2 miles toward Taylorville. Turn right onto Evans Ferrell Branch Road and proceed 0.1 miles. The mitigation area is Evans Ferrell Branch, which is located approximately 2.2 miles south of Delbarton, West Virginia.

1.7 Commencement/Completion Dates

The implementation plan provides general time frames for each phase of the mitigation plan. The time frames are divided into three phases and are presented in Table 1.

Table 1. Mitigation Plan Phases.

Phase	Activity
Phase I	State Mitigation Credits
Phase II	Creation of ephemeral stream on the surface of White Flame No. 9
Phase III	Restoration on Big Pigeonroost Branch
Phase IV	Restoration on Upper Curry Branch
Phase V	Restoration on Evans Ferrell branch

1.8 Performance Standard Compliance

Because mitigation activities are not fully completed, success as it relates to meeting specific performance standards cannot be quantified. However, upon completion of the mitigation projects, a professional biologist and a professional engineer shall certify to the U.S. Army Corps of Engineers that construction met or exceeded the specifications applicable under the Clean Water Act (CWA) Section 404 Permit.

During years 1, 2 & 4 only benthic macroinvertebrate and habitat assessments will be conducted. This will allow time for enhancement and other in stream mitigation activities to stabilize. This will also allow for more accurate sampling and the determination of the success of enhancement and mitigation activities. During years 3 & 5 all performance standards will be addressed (Section 2.2) to determine if mitigation and enhancement activities are in place and having the desired effect. This time frame will also allow for any corrective/maintenance activities that may be required prior to the end of the monitoring period.

1.9 Corrective/Maintenance Activity Dates

The approved mitigation plan states that the restoration areas shall be maintained in accordance with all permit requirements for a period of 5 years. All construction, maintenance, and monitoring shall be the responsibility of the environmental engineer with White Flame Energy, Inc. That person will ensure that qualified personnel, particularity engineers and biologists, are used during all phases of the restoration work. To date, no corrective or maintenance activity has been reported since mitigation activities have not been completed.

1.10 Recommendations

There are no recommendations at this time.

2.0 REQUIREMENTS

2.1 Monitoring requirements

1. Channel establishment and restoration, EPA Rapid Bioassessment Protocol Habitat Assessment Parameters: Epifaunal Substrate/Cover, Embeddedness, Velocity/Depth Regime, Sediment Deposition, Channel Flow Status, Channel Alteration, and Frequency of Riffles.
2. Erosion control and bank stability, EPA Rapid Bioassessment Protocol Habitat Assessment Parameter: Bank Stability
3 Establishment of riparian vegetation, EPA Rapid Bioassessment Protocol Habitat Assessment Parameters: Vegetation Protection and Riparian Zone Width

2.2 Performance Standards

Parameter/Observation	Success Standard	Method of Determination
Macroinvertebrate	Report Only	Benthic Survey
Epifaunal Substrate	Minimum 70% favorable Substrate	Pebble count; Estimate of available cover
Embeddedness	Minimum 20% embeddedness	Pebble count; measure embeddedness
Velocity/Depth Regime	Maintain step-pool or riffle-pool sequences in accordance with as-built	Longitudinal profile
Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition	Pebble count in pools
Channel Flow Status	Maintain width/depth ratio in accordance with as-built	Determine from x-sections
Channel Alteration	Maintain minimal channelization in accordance with as-built	Longitudinal profile: x-sections
Frequency of Riffles	Maintain step-pool or riffle-pool sequences in accordance with as-built	Longitudinal profile
Bank Stability	Banks Stable	Bank Erosion Index; observe density & depth of plant roots, near bank shear stress
Vegetative Protection	Approved width of riparian zone planted with min. 805 stems/acre surviving	Quadrangle and transect surveys for species composition and abundance
Riparian Zone	Riparian zone with a variety of species alive and healthy	Quadrangle and transect surveys for species composition and abundance

2.3 Success of Performance Standards

Because mitigation activities are not fully completed, success as it relates to meeting specific performance standards cannot be quantified. However, upon completion of the mitigation projects, a professional biologist and a professional engineer shall certify to the U S. Army Corps of Engineers that construction met or exceeded the specifications applicable under the Clean Water Act (CWA) Section 404 Permit.

3.0 SUMMARY OF DATA

3.1 Data at the Evans Ferrell Branch Mitigation Site

The mitigation and enhancement activities for Evans Ferrell Branch CMP have been completed (Table 1). A single habitat approach was used to sample benthic macroinvertebrates using the United States Environmental Protection Agency (EPA), Rapid Bioassessment Protocols for use in Streams and Wadeable Rivers. Habitat, benthic, and species richness values collected downstream of mitigation activities of Evans Ferrell Branch (Fig. 1), reflected a suboptimal habitat (142) with a fair WVSCI score (55.38) and a species richness values of eight (Tables 2 and 3).

Figure 1. Benthic site 2010.

Table 2. Summary of benthic macroinvertebrate collection on Evans Ferrell Branch.

Taxa	Functional Feeding Group[1]	Sample Site 2010
Ephemeroptera		
Ameletidae	CG	
Odonata		
Gomphidae	P	
Plecoptera		
Chloroperlidae	P, Sc, CG	
Perlodidae	P	
Trichoptera		
Hydropsychidae	CG	121
Limnephilidae		1
Philopotamidae	CF	
Coleoptera		
Elmidae	CG, Sc	10
Psephenidae	Sc	6
Decapoda		5
Diptera		
Chironomidae	CG	3
Empididae	CF	2
Tipulidae	Sh, CG	
Collembola	CG	
Magaloptera		
Corydalidae	P	2

Table 3. Metrics for benthic macroinvertebrates collected from Evans Ferrell Branch.[2]

Benthic Metrics	Sample Site 2010
Total Taxa Score	38.09
EPT Taxa Score	15.38
% EPT Taxa	88.50
% Chironomidae Score	98.97
% 2 Dominant Taxa Score	19.79
HBI Score	71.55
WV Stream Condition Index	**55.38**

[1]Merritt and Cummins, Third Edition: 1996: An Introduction to the Aquatic Insects of North America.
CG= Collector/ Gatherer; **CF** = Collector/ Filterer; **Sh**= Shredder; **Sc**=Scraper; **P**=Predator

[2] Calculations performed with the West Virginia Division of Natural Resources, Protocol Workshop Access Database.

4.0 MAPS

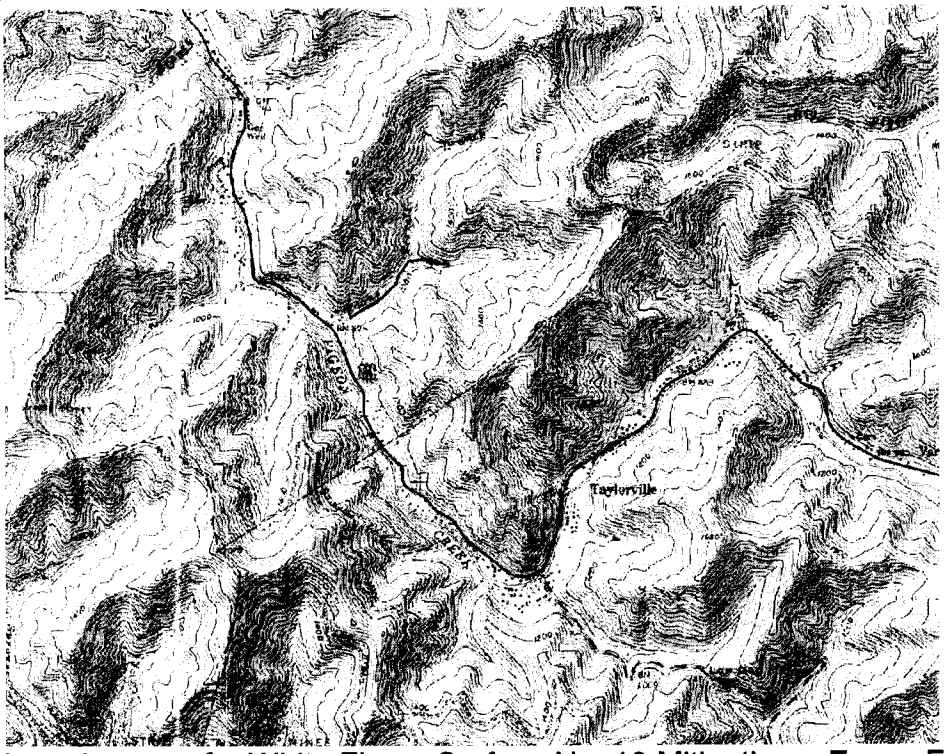

Figure 3. Location map for White Flame Surface No. 10 Mitigation – Evans Ferrell Branch.

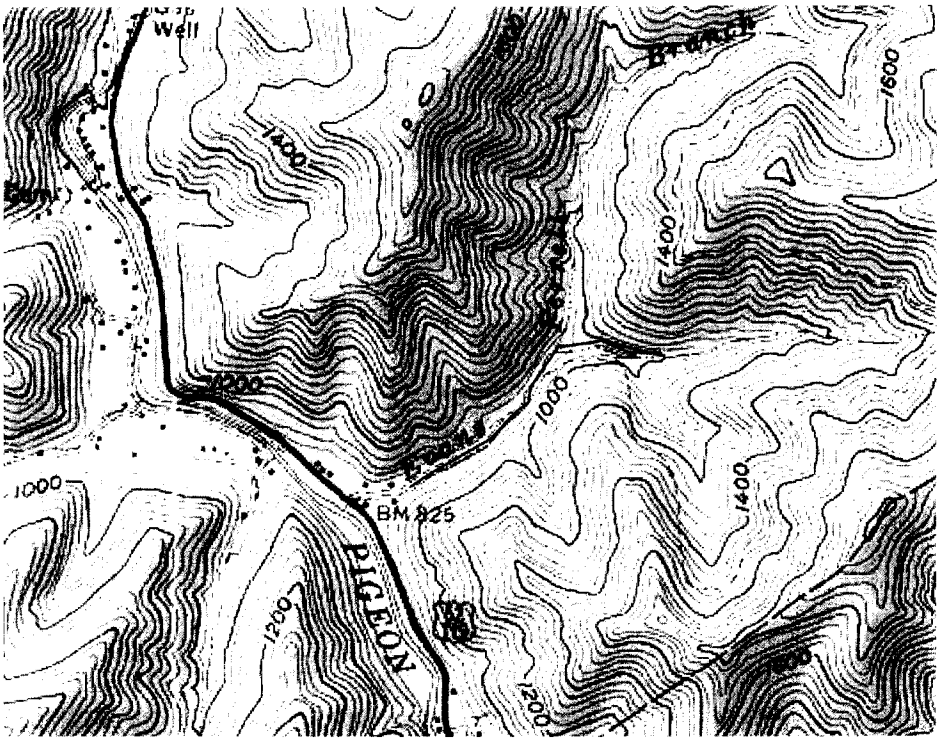

Figure 4. The portion of Evans Ferrell Branch (red) to be enhanced by White Flame Energy.

5.0 CONCLUSIONS

The approved Compensatory Mitigation Plan (CMP) for White Flame Energy, Inc. Surface Mine No. 10 proposes to enhance 2,583 feet of Evans Ferrell Branch. Restoration activities were completed in May of 2009.

Habitat and benthic values reflected a suboptimal stream channel with good species richness (8 species) and a WVSCI value in the fair range. These values are indicative of a stream that has had moderate impacts, in this case from the restoration efforts. But, these values also demonstrate the streams natural resilience and ability to rebound from limited impacts. If the area remains of limited access (most of restoration area is behind a locked gate), I would expect to see continued improvement in habitat, benthic and species richness values over subsequent years.