



Bureau of Abandoned Mine Reclamation

# OSMRE 2017 ABANDONED MINE LAND RECLAMATION AWARDS

## NATIONAL AWARD WINNER





**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Abandoned Mine Reclamation

# **THE HULING BRANCH AML RECLAMATION/ATV RECREATION & WATERSHED IMPROVEMENT PROJECT**

Tom Wolf, Governor

Patrick McDonnell, Secretary



**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL PROTECTION



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Abandoned Mine Reclamation

## Abandoned Mine Land Reclamation Awards



OSMRE first recognized outstanding abandoned mine land reclamation and exemplary reclamation techniques in 1992, when it started the annual **Abandoned Mine Land (AML) Reclamation Awards Program**. The program mirrors one of the objectives of the Surface Mining Control and Reclamation Act of 1977 to ensure that land mined for coal would be restored to beneficial use as part of the mining process, and that lands abandoned without reclamation prior to the law would be reclaimed.



### AWARD ELIGIBILITY

AML projects funded wholly or in part and completed by approved state or tribal programs are eligible for an award, including coal, non-coal, high-priority, and emergency projects. Abandoned mine reclamation completed by citizen groups or other non-state/nontribal organizations are not eligible for these awards. One project may be submitted by each state or tribal program each year.



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## Award Winners

OSMRE has traditionally given five awards:

- one national award
- one national award for small projects (restricted to projects receiving less than \$1 million in a state or tribe that receives less than \$6 million annually in AML funding)
- one award in each of OSMRE's three regions

Any entry is eligible for the national award. Eligible voters and organizations eligible to submit nominations are listed below.

View previous [AML Reclamation Award Winners](#).



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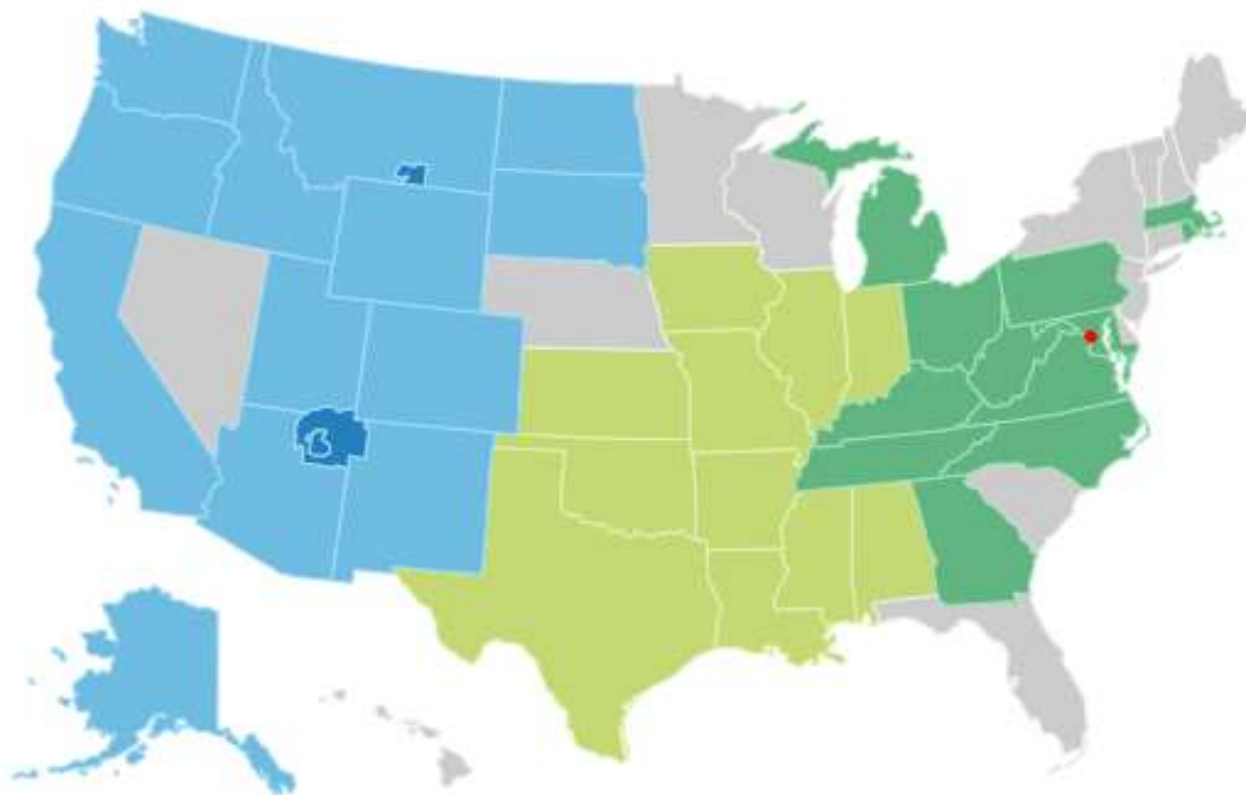


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## OSMRE Regional Map



### DETAILS

Click the map for more info...

- Tribes
- Western Region
- Mid-Continent Region
- Appalachian Region
- OSMRE Headquarters
- Non-OSMRE States

OSMRE Regional Map



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## Organizations Eligible to Submit Nominations - 27 Total

### Appalachian Region - 7

1	Pennsylvania Bureau of Abandoned Mine Reclamation
2	West Virginia Office of Abandoned Mine Lands and Reclamation
3	Virginia Division of Mine Land Reclamation
4	Tennessee Abandoned Mine Land Program
5	Ohio Division of Mines and Reclamation
6	Maryland Abandoned Mine Lands Section
7	Kentucky Division of Abandoned Mine Lands

### Mid-Continent Region - 10

8	Alabama Mining and Reclamation
9	Arkansas Dept. of Pollution Control and Ecology
10	Illinois Abandoned Mine Land Reclamation Division
11	Texas Surface Mining and Reclamation Division
12	Oklahoma AML Program
13	Louisiana Injection and Mining Division
14	Kansas Surface Mining Section
15	Missouri AML Section Land Reclamation Program
16	Indiana Division of Reclamation
17	Iowa AML Program

### Western Region, Tribes Included - 10

18	Wyoming AML Program
19	Utah Abandoned Mine Reclamation Program
20	North Dakota AML Division
21	New Mexico Mining and Minerals Division
22	Montana Abandoned Mine Reclamation Bureau
23	Colorado Office of Active and Inactive Mines
24	Alaska Division of Mining
25	Navajo Nation Abandoned Mine Land Reclamation Department
26	Hopi Tribe Abandoned Mine Land Program
27	Crow Tribe AML Program



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## 2017 JUDGING STANDARDS

1. Innovative use of current technology (12 pts.)
2. Difficulty of Achieving Reclamation under Existing Conditions (17 pts.)
  - a. Special and unique considerations (8)
  - b. On-site difficulty of the project (9)
  - c. Project start and completion dates and construction costs
  - d. Names of organizations responsible for the reclamation, including contractors
  - e. Date submitted
3. On-Site Effectiveness (23 pts.)
  - a. Effective/innovative use of technology (8)
  - b. Landscape conforms to the natural environment (8)
  - c. Elimination of significant health or safety problems (7)
4. Funding (12 pts.)
  - a. Effective use of funds (6)
  - b. Leveraging – use of partners for funding or technology (6)
5. Benefits to the Community (18 pts.)
  - a. Community support for the project (6)
  - b. Long-term benefits to the community (12)
6. Surface Mining Control and Reclamation Act (18 pts.)
  - a. Exceeds the spirit and intent of SMCRA (10)
  - b. Increased public awareness of SMCRA (4)
  - c. Transferability to other AML projects (4)



Bureau of Abandoned Mine Reclamation

## Eligible Voters - 43 Total

### OSMRE - 16

1	Chief, OSMRE Alton Field Division		
2	Chief, OSMRE Denver Field Division		
3	Chief, OSMRE Federal Reclamation Program Division		
4	Chief, OSMRE Pittsburgh Field Division		
5	Regional Director, OSMRE Appalachian Region		
6	Regional Director, OSMRE Mid-Continent Region		
7	Regional Director, OSMRE Western Region		
8	Field Office Director, OSMRE Tulsa Field Office		
9	Field Office Director, OSMRE Wyoming Field Office		
10	Field Office Director, OSMRE Birmingham Field Office		
11	Field Office Director, OSMRE Casper Field Office		
12	Field Office Director, OSMRE Charleston Field Office		
13	Field Office Director, OSMRE Knoxville Field Office		
14	Manager, OSMRE Olympia Office		
15	Environmental Specialist, OSMRE Pittsburgh Field Division		
16	AML Program Specialist, OSMRE Lexington Field Office		

### Appalachian Region - 7

17	Director, Pennsylvania Bureau of Abandoned Mine Rec.		
18	Chief, West Virginia Office of Abandoned Mine Lands and Rec.		
19	AML Manager, Virginia Division of Mined Land Reclamation		
20	Director, Tennessee AML Program		
21	Natural Resources Administrator, Ohio Div. of Mines and Rec.		
22	Supervisor, Maryland Abandoned Mine Lands Section		
23	Director, Kentucky Division of Abandoned Mine Lands		

### Mid-Continent Region - 10

24	Director, Alabama Mining and Reclamation Division		
25	Chief, Surface Mining and Reclamation Division, Arkansas		
26	Manager, Illinois Abandoned Mine Land Reclamation Division		
27	Director, Texas Surface Mining and Reclamation Division		
28	Director, Oklahoma AML Program		
29	Director, Injection and Mining Division, DNR, Louisiana		
30	Mining Section Chief, Kansas Surface Mining Section		
31	Chief, Missouri AML Section Land Reclamation Program		
32	Assistant Director Restoration, Indiana Division of Rec.		
33	Environmental Specialist – Senior, Div. of Soil Conserv., Iowa		

### Western Region, Tribes Included - 10

34	Director, Wyoming AML Program		
35	Chief, Utah Abandoned Mine Reclamation Program		
36	Director, North Dakota AML Division		
37	AML Program Manager, New Mexico Mining and Minerals Div.		
38	Chief, Montana Abandoned Mine Reclamation Bureau		
39	Director, Colorado Office of Active and Inactive Mines		
40	AML Program Coordinator, Alaska Division of Mining		
41	Director, Navajo Nation Abandoned Mine Land Rec. Depart.		
42	Manager, Hopi Tribe Abandoned Mine Land Program		
43	Director, Crow Tribe AML Program		



# NAAAML P

## NATIONAL ASSOCIATION

### OF ABANDONED MINE LAND RECLAMATION





Bureau of Abandoned Mine Reclamation

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**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

# The Huling Branch AML Reclamation/ATV Recreation & Watershed Improvement Project



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION  
Bureau of Abandoned Mine Reclamation



Pre-Construction Photo

## 2017 OSMRE Award Nomination



Post-Construction Photo



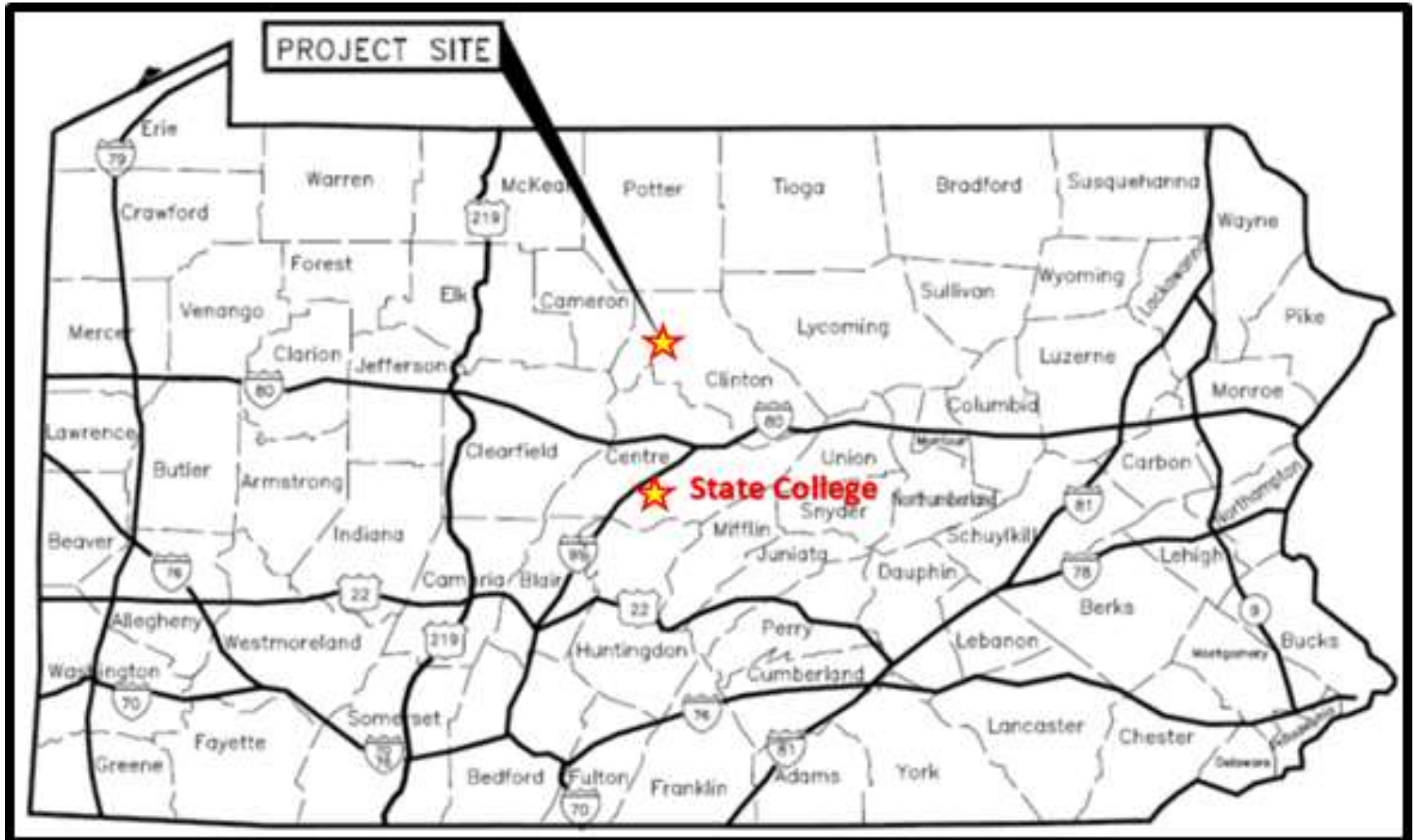
North Coast  
Water Road Association



# The Huling Branch AML Reclamation Project

## ◆ Project Location

- Problem Area 6672 (PA 6672) in Sproul State Forest
- Noyes and Leidy Townships, Clinton County, Pennsylvania



# The Huling Branch AML Reclamation Project

## ◆ Project Team:

- Director - Eric E. Cavazza, P.E., (ecavazza@pa.gov)
- Environmental Program Manager - Dean R. Baker, P.E.
- Clerical – Tammy Cree & Carol Layo
- Construction - Bill A. Dadamo, P.E. & Roger L. Rummel, P.E.
- Inspection - Ronald R. Lindemuth & Patrick R. Thompson
- NPDES Permitting – Craig R. Treese, P.E. & Patrick M. Webb, P.E.
- Design - Thomas C. Malesky, P.E. & Stephen Fisanick, III, P.E.
- Development - Patrick M. Webb, P.E. & Richard L. Beam, P.G.
- Investigation – Martin J. Hughes, P.E.

Pennsylvania Department of Environmental Protection  
Bureau of Abandoned Mine Reclamation, Cambria District Office  
Ebensburg, PA, 15931  
814-472-1800

# The Huling Branch AML Reclamation Project

## ◆ Primary Project Partners:

- Office of Surface Mining Reclamation and Enforcement
- PA DEP, Bureau of Abandoned Mine Reclamation
- PA DCNR, Bureau of Forestry
- PA DEP, Moshannon District Mining Office
- American Chestnut Foundation of Asheville, North Carolina
- Michael Hanna, PA State Representative, 76th Legislative District
- Brandywine Enduro Riders (BER)
- American Motorcyclist Association (AMA)
- National Enduro Promotions Group (NEPG)
- Kettle Creek Watershed Association

# The Huling Branch AML Reclamation Project

## ◆ AML Problems:

- 4 Priority 2 (P2) Dangerous Highwalls (DH) at a combined length of over 6,000 L.F.
  - ◆ 2,800 L.F.
  - ◆ 1,500 L.F.
  - ◆ 1,200 L.F.
  - ◆ 500 L.F.
  - ◆ Unauthorized use of the AML site by ATV riders to areas off of PA DCNR's designated Whiskey Springs ATV trail within the Sproul State Forest
    - ◆ Rattlesnake National Enduro Championship Series
- 103 Acres of Priority 3 (P3) Acid Forming Spoil Area (SA)
- Multiple P3 Water Area (WA) problems from:
  - ◆ Acidic Deep Mine Drainage (AMD) Discharges
  - ◆ Acidic Mine Seeps
  - ◆ Acidic Buried Coal Refuse and Acidic Surface Mine Spoil
- P3 Equipment/Facility (EF)
- P3 Collapsed Mine Opening (MO)



# The Huling Branch AML Reclamation Project

- ◆ Project Start and Completion Dates:
  - September 9, 2013 to December 8, 2015
- ◆ Construction Costs:

<b>Huling Branch AML Reclamation /ATV Recreation &amp; Watershed Improvement Project</b>			
<b>OSMRE Title IV Health &amp; Safety Funds</b>	<b>OSMRE AMD Set-Aside Funds</b>	<b>PA State Growing Greener Funds</b>	<b>Project Total Cost</b>
<b>\$7,352,587</b>	<b>\$2,000,000</b>	<b>\$1,199,591</b>	<b>\$10,552,178</b>
<b>69.7%</b>	<b>19.0%</b>	<b>11.3%</b>	
<b>88.7%</b>			

# The Huling Branch AML Reclamation Project

- ◆ Leveraging – Use of Partners for Funding or Technology:
  - A Multi-Project Health & Safety (P2) and AMD (P3) Approach

**Funding Summary Table of the Twomile Run Subwatershed AML & AMD Projects (11 completed since 2000)**

Funding Source		Funding Percent	
<b>OSMRE Funds</b>	OSMRE Title IV Health & Safety Funds	54.70%	76.39%
	OSMRE AMD Set-Aside Funds	19.83%	
	Watershed Cooperative Agreement Program	1.86%	
<b>Other Source Funds</b>	Pennsylvania State Growing Greener Funds	20.57%	
	Foundation of Pennsylvania Watersheds	1.50%	
	Richard King Mellon Foundation	0.65%	
	United States Army Corps of Engineers	0.41%	
	National Fish & Wildlife Foundation	0.39%	
	Stream Restoration Incorporated	0.09%	



# The Huling Branch AML Reclamation Project

## ◆ Contractors:

- General - L.R. Costanzo Company Inc., Scranton, PA
- Major – Berner Construction, Inc., Gap, PA
- Material Transport – Confer Trucking Inc., Bellefonte, PA
- Tree Planting – Ron Rowles Energy, Curwensville, PA

# The Huling Branch AML Reclamation Project

## ◆ AML Problems:

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  - ◆ Acidic Mine Seeps
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- P3 Equipment/Facility (EF)
- P3 Collapsed Mine Opening (MO)

Huling Branch AML site  
PA 6672

LEIDY  
TOWNSHIP

PA6672

PA0888

PA1122

PA1124

PA6679

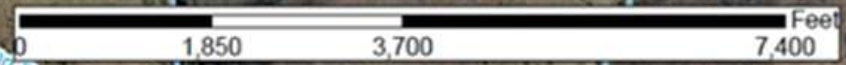
PA6673

PA1123

CLINTON COUNTY

NOYES  
TOWNSHIP

PA6674



PA1121



# The Huling Branch AML Reclamation Project

## ◆ Mining History:

- Underground mining of the Lower Kittanning Coal Seam
- By Kettle Creek Coal Company, Bitumen, PA
  - ◆ 1900s to 1945



# The Huling Branch AML Reclamation Project

## ◆ Mining History:

- Surface mining of the Lower Kittanning Coal Seam
- By D.G. Wertz and Richmond Coal Companies
  - ◆ 1950s to 1967



# The Huling Branch AML Reclamation Project

## ◆ AML Problems:

- 4 Priority 2 (P2) Dangerous Highwalls (DH) at a combined length of over 6,000 L.F.
  - ◆ 2,800 L.F.
  - ◆ 1,500 L.F.
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- P3 Collapsed Mine Opening (MO)





















# The Huling Branch AML Reclamation Project

- ◆ Difficulty of Achieving Reclamation Under Existing Conditions:
  - Could the 2012 Coal Market support an Active Mine Permit?
  - Could the size of the site be reclaimed as a Government Financed Construction Contract (GFCC)?
  - Brutally record breaking cold winters during 2 year contract
  - Deadly Timber Rattlesnake
    - ◆ Pennsylvania State Protected Special Species of Concern
    - ◆ Contractor had to be careful NOT to harm the snake
    - ◆ At the same time the contractor had to protect themselves from not be injured by the snake
  - 2.5 miles of Winter Road Maintenance & Safety,
    - ◆ 350,000 tons of materials transported to and from the site
    - ◆ Forced to night time hauling ONLY during late winter and early spring to maintain haul road system
  - Use of satellite phones
    - ◆ Maintain adequate communications
    - ◆ Ensure a safe and effective worksite



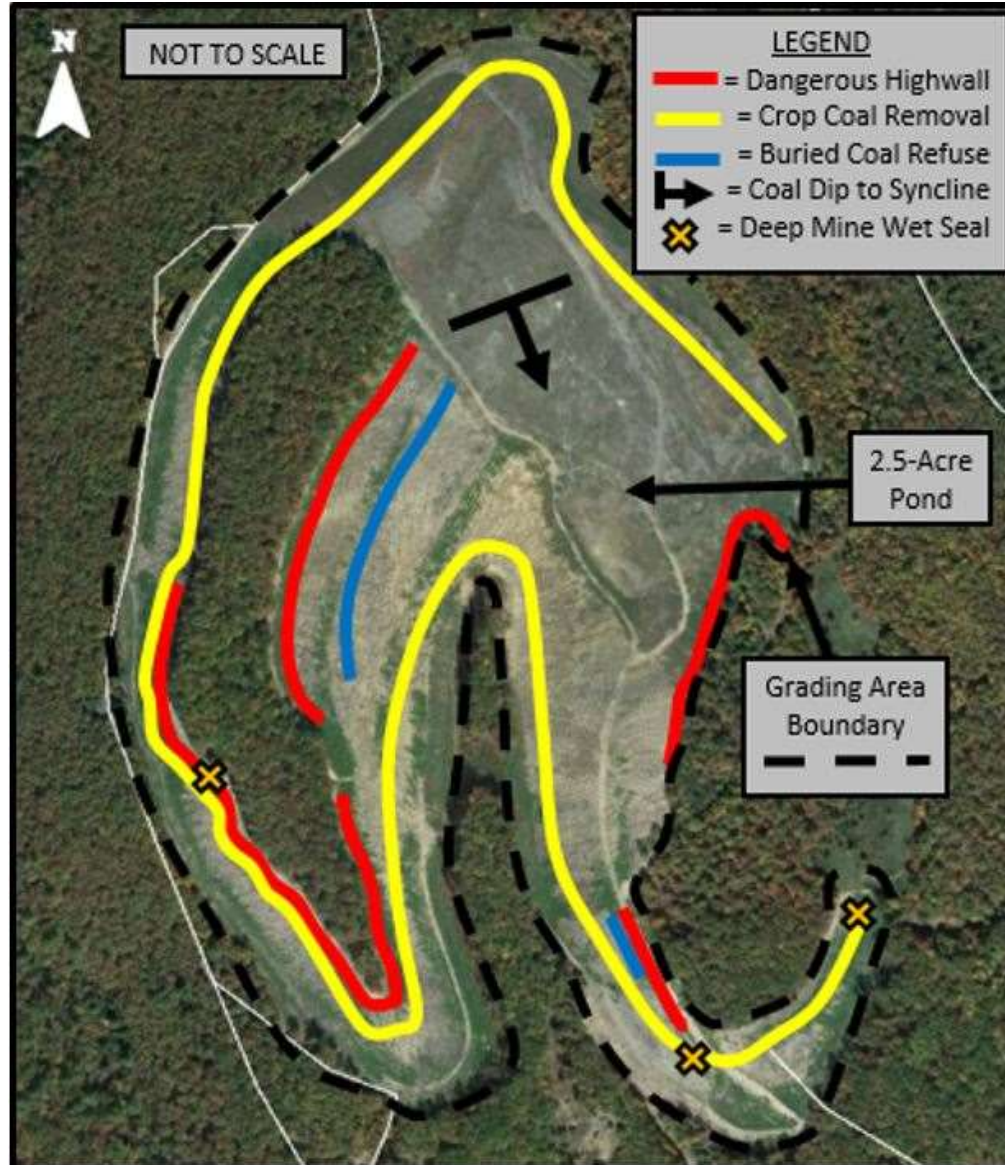
# The Huling Branch AML Reclamation Project

## ◆ 3 Primary Project Concerns/Objectives:

- 1<sup>st</sup> - Eliminate P2 DH Conditions of over 6,000 L.F.
  - ◆ Intense site visitation due to the unauthorized use of the AML site by ATV riders to areas off of PA DCNR's designated Whiskey Springs ATV trail within the Sproul State Forest
  - ◆ Whiskey Springs ATV trail is 50 miles long, 3.6 miles within project area
  - ◆ 40 acre ATV play area
  - ◆ Numerous accidents, several of which required life flight helicopter
  - ◆ Reforestation Initiative of Sproul State Forest
  
- 2<sup>nd</sup> – Maintain & Establish 3.6 miles of ATV trail
  - ◆ ATV trail supported recreational use by visitors of Sproul State Forest
  - ◆ Portions of the ATV trail used for the annual Rattlesnake National Enduro
  
- 3<sup>rd</sup> – Reduce site AMD impacts on both surface and groundwater
  - ◆ AMD Source Remediation through Alkaline Addition placement
  - ◆ Removal and or special handling of acid forming materials
  - ◆ Hydrologic controls and identification

# The Huling Branch AML Reclamation Project

## ◆ The Reclamation Plan:



# The Huling Branch AML Reclamation Project

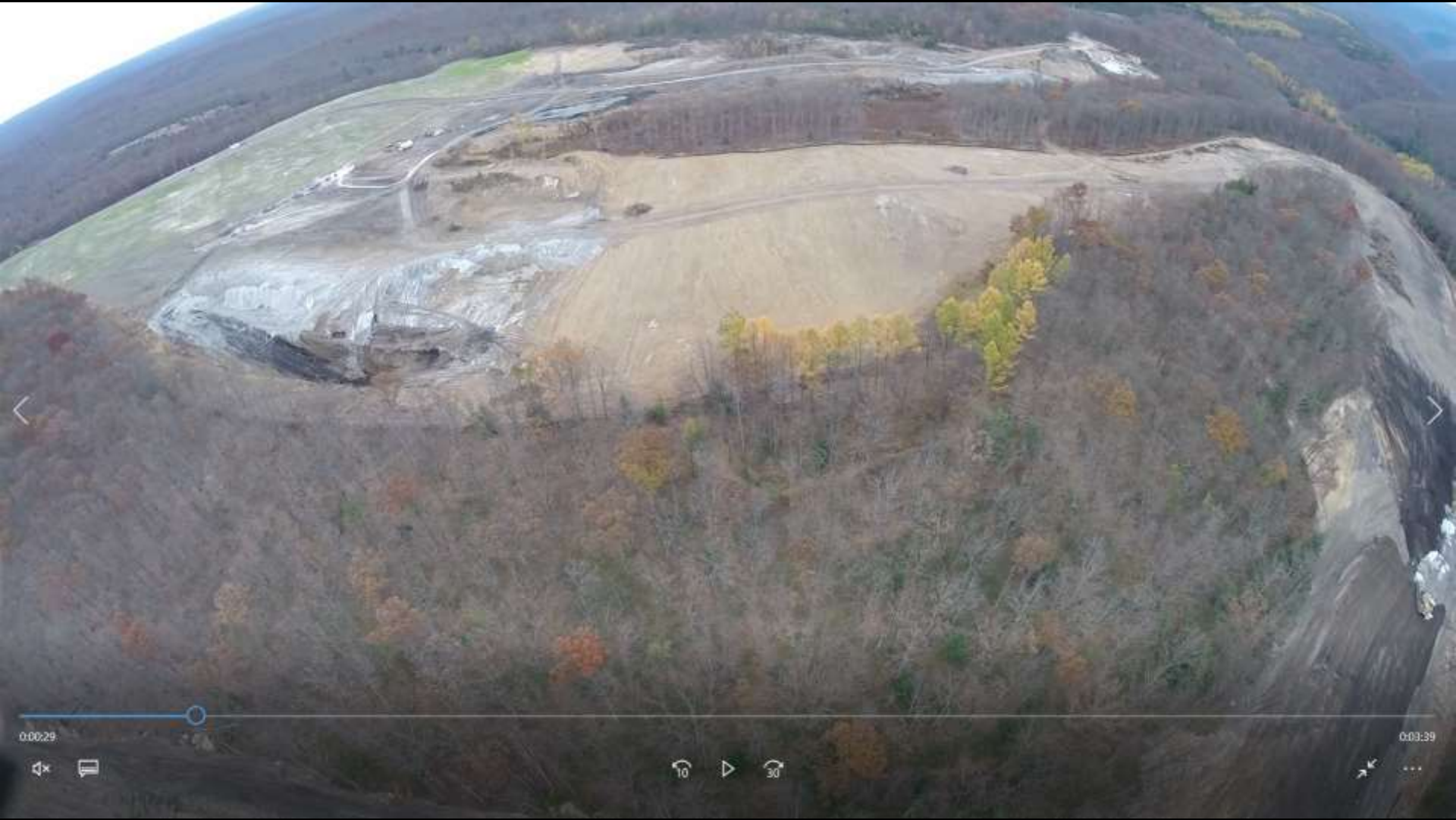
## ◆ Overall Items of Work:

- 41,300 tons of Acid Forming Materials Removed
  - ◆ 36,200 tons of Lower Kittanning Crop Coal
  - ◆ 5,100 tons of Buried Coal Refuse
- 3,000 linear feet of Subsurface Pipe Drains Installed
- 8,000 linear feet of Rock Underdrain Installed
- 310,000 tons of Alkaline Addition Materials
  - ◆ Pit Floor Lining - 1,800 tons per acre rate
  - ◆ Blended with Spoil Area materials – Variable rate
  - ◆ 3,000 ton per acre “Final” Alkaline Addition rate
- 787,000 cubic yards of Spoil Area grading
- 48,150 mixed Tree Seedlings, +100 American Chestnut Seedlings
- 2.5 acre E&SC shallow pond left to enhance wildlife habitat
- 3.6 miles of trail
  - ◆ Rehabilitated and maintained construction site access/ATV trail restored

# The Huling Branch AML Reclamation Project

## ◆ During-Construction Conditions:



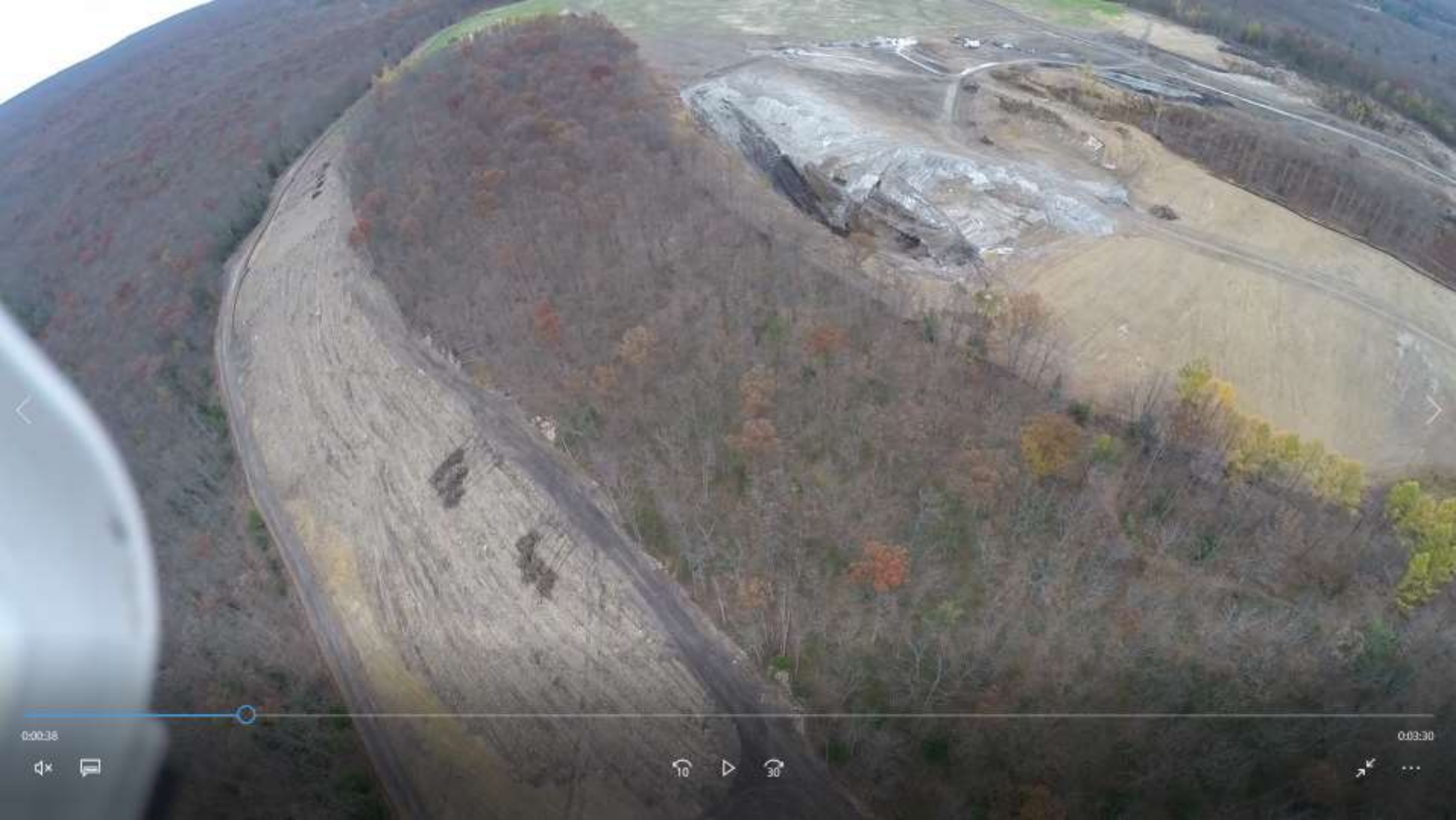


0:00:29



0:03:39





0:00:38

0:03:30







00:37



00:36





0:04.49

0:06.52







04.24.2014 14:55



















# The Huling Branch AML Reclamation Project

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– 3<sup>rd</sup> – Reduce site AMD impacts on both surface and groundwater

- ◆ AMD Source Remediation through Alkaline Addition placement
- ◆ Removal and or special handling of acid forming materials
- ◆ Hydrologic controls and identification

# ▶ The Huling Branch AML Reclamation Project

- ◆ The Huling Branch AML Reclamation Project was an AML Pilot Project - Before the Pilot Program's creation
- ◆ Long-Term Benefits to the Community & Their Support:
  - Increased Tourism for:
  - Safe Use of the Whiskey Springs ATV Trail in Sproul State Forest
  - Unauthorized trail use through P2 DHs now removed
  - Annual Rattlesnake National Enduro Race
  - Watershed Improvement for recreational fishing

# Sproul State Forest Whiskey Springs ATV Trail System

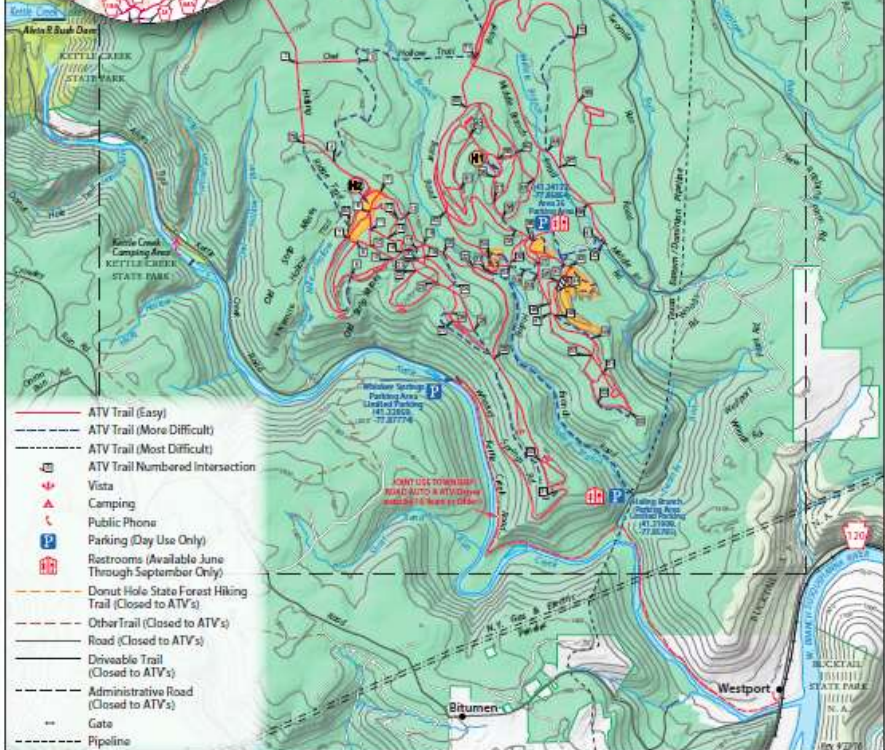


- State Forest
- State Park
- Natural Area
- Open Area
- Hazard Area

- H1 Holdipad (Decimal Degree Lat. Long.) (41.34695, -77.87274)
- H2 Holdipad (Decimal Degree Lat. Long.) (41.34463, -77.88703)
- H3 Holdipad (Decimal Degree Lat. Long.) (41.35915, -77.88428)

STAY ON DESIGNATED TRAILS  
ALL ATVS MUST BE REGISTERED AND INSURED  
ONLY ATVS WITH THREE OR MORE WHEELS ARE PERMITTED  
MOTORCYCLES AND TRIALBIKES ARE NOT PERMITTED  
Contours Are on 100 Ft. Intervals

SEE BACK OF MAP FOR ENLARGEMENT



1. Become familiar with and abide by State Forest Rules and Regulations and the ATV Law.
2. Do not dislodge or pursue wildlife with your vehicle.
3. Certain areas such as heavily seeded or planted areas and wild and natural areas are closed to ATVs. Preserve your sport by not entering areas.
4. Wear a helmet and eye protection at all times when operating an ATV. Whenever possible, ATV users should use the buddy system and sign in.
5. Whenever possible, ATV users should use the buddy system and sign in.
6. Be informed of local weather forecasts. Dress and equip yourself appropriately.
7. Respect the rights of others who use State Forest land. Stay on trails.
8. Do not carry passengers on your ATV, unless the vehicle is designed for them.
9. The ATV Law is contained in Chapter 77 of the Pennsylvania Vehicle Code. The following are a few of the items in the ATV Law and Regulations that you need to be aware of and obey:
  1. Pennsylvania residents owning and intending to use their ATV in and around the State Forest are required to register their ATVs with the DCFNR. Registration requires the proper display of a registration plate and expiration sticker on the back of the ATV and a registration certificate card.
  2. A PA General Registration requires the proper display of a registration plate and expiration sticker on the back of the ATV and a registration certificate card.
  3. With a Limited Registration (no tax and no expiration sticker) the ATV can be used only on the property of the owner.
  4. ATVs owned by non-residents covered by a valid registration from their home state do not need to re-register in PA if their home state honors a PA registration.
  5. Liability insurance coverage is required for all ATVs when they are operated on the property of the owner. Proof of this coverage should be carried by the operator.
  6. ATV riding on state forest land is restricted to trails and riding areas specifically designated for ATV use.
  7. Designated ATV trails on state forest land will be open from the Friday before Memorial Day through the last full weekend in September. Some ATV trails reopen after deer season and remain open until April 1, conditions permitting.
  8. The Bureau of Forestry's local District Forester is responsible for the trail and may close part or all of the facility in the event of hazardous conditions.
  9. Operation of an ATV in a residential or neighborhood manner is prohibited.
  10. Persons under 18 years of age may not operate an ATV on public land.
  11. Persons past their 18th birthday but under 18 years of age must complete a safety education course and possess a safety certificate before being permitted to operate an ATV on any public land.
  12. Age 8 or 9 year old operators are restricted to an engine size of 70cc or less.
  13. Discard all litter in waste containers provided or take it out with you.

### The ATVenturer's Pledge

- I will learn all the mechanical controls and safety devices of my ATV by reading the owner's manual and I will check them each time before I ride.
- I will wear a helmet at all times and other protective clothing suitable to the environment when I ride.
- I will only ride my ATV off-road, and will not ride on public roads or paved surfaces.
- I will not carry passengers on my ATV.
- I will not let young riders or inexperienced riders operate my ATVenturing unsupervised.
- I will not use alcohol or other drugs when I ride.
- I will only lend my ATV to someone I have personally instructed in its safe and appropriate use.
- I will ask an instructor or qualified rider to teach me proper riding skills and I will practice until my skills are well developed before entering an unfamiliar area.
- I will ride in the company of others, never alone.
- I will respect the laws when I ride and I will honor the rules when I ride.
- I will not modify the ATV exhaust system to create more noise.
- I will not litter the area nor damage plant life where I ride.
- I will be courteous to other riders and persons by offering right-of-way and respecting areas that are posted.

Every effort has been made to insure the accuracy of the map on the reverse side. Because of last minute changes and possible errors in reporting, the map should not be considered infallible.

**THINK SAFETY  
ACT SAFELY**

Revised 4/22/16

### EMERGENCY NUMBERS

Sproul State Forest District Office (Shinton, PA)  
(Weekdays 8:00 a.m. to 4:00 p.m.)  
570-923-6011

Public Information Center (Renovo)  
570-923-1000

Public Information Center (Lock Haven)  
911

Pennsylvania State Police  
570-225-6000

Kettle Creek State Park  
570-923-6004

Clinton County Sheriff's Office  
2. Renovo, PA  
3. Kettle Creek, PA

Clinton County Control Team  
1. Kettle Creek State Park (Lock Haven Campground)  
2. Renovo, PA  
3. Kettle Creek, PA

DCFR, Bureau of Forestry  
Sproul State Forest District  
1517 Renovo Road  
Renovo, PA 17754  
(570) 923-6011

Or drop in at the office located along Route 120 at Shinton, 3 miles west of Renovo.  
An overnight stay in the ATV area requires a camping permit. To obtain a camping permit call, write or stop in at the District Office during weekday office hours.

If you have an emergency, suggest a fire or injury on the trail, please call us. We may be writing or calling you at:

1. "Whiskey Springs," where an old woods road intersects Kettle Creek Road between Westport and Kettle Creek State Park.
2. The intersection of Hiding Branch and Two Mile Road.
3. Before the gate on Shinton Run Road.

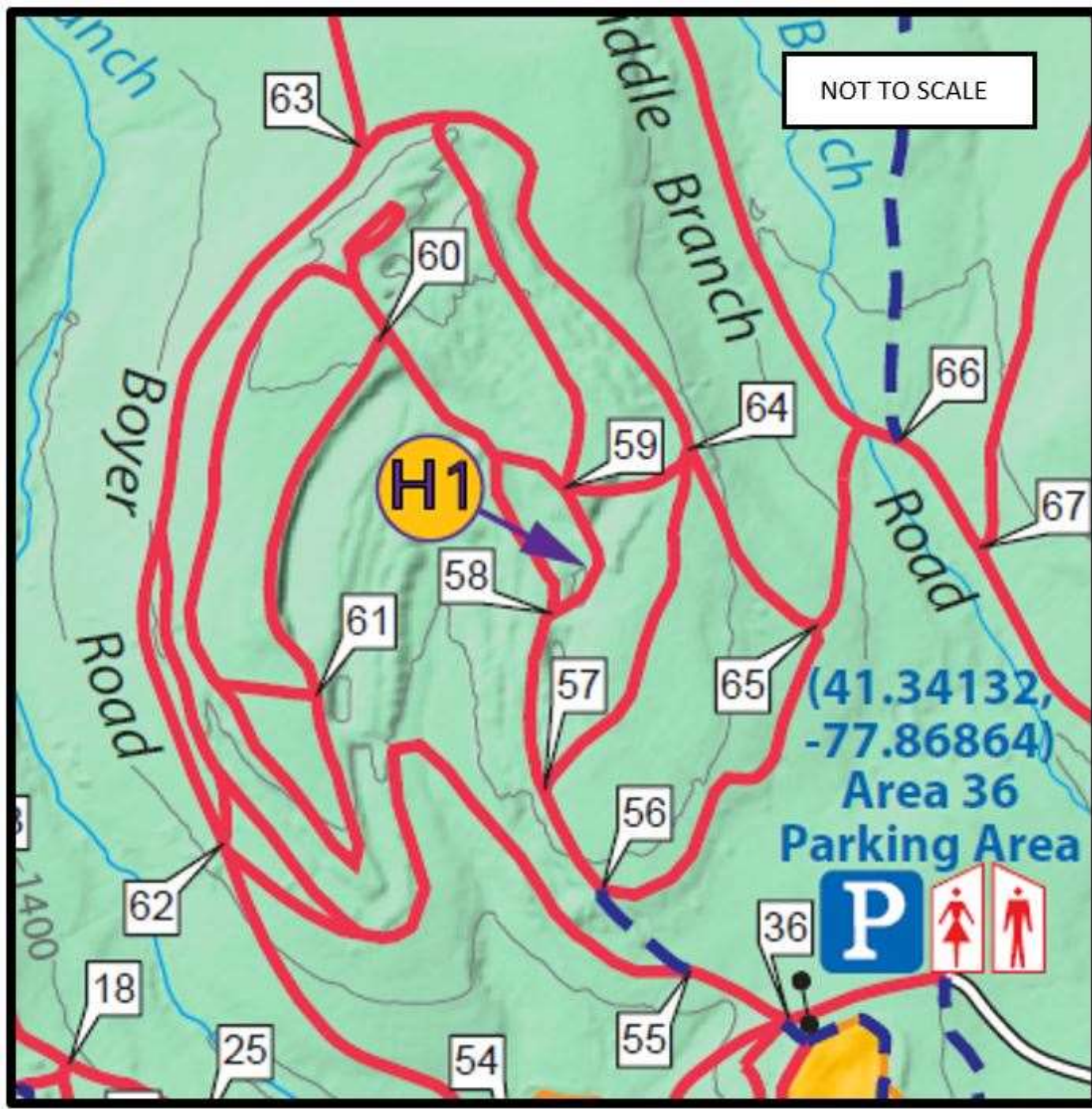
You have been encouraged to enjoy the trail at a pleasant rate.

Monday through Friday 8:00 a.m. to 4:00 p.m.  
An overnight stay in the ATV area requires a camping permit. To obtain a camping permit call, write or stop in at the District Office during weekday office hours.

## SPROUL STATE FOREST WHISKEY SPRINGS ALL-TERRAIN VEHICLE TRAIL

LOCATED IN CLINTON COUNTY

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES  
BUREAU OF FORESTRY







**pennsylvania**  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES

TOM WOLF, GOVERNOR | CINDY ADAMS DUNN, SECRETARY



- STATE PARKS
- RESERVATIONS
- STATE FORESTS
- FIND A TRAIL
- GRANTS
- GEOLOGY
- LOCAL PARKS
- EVENTS

DCNR > Recreation > What to Do > ATV Riding > ATV Trails in State Forests

## ATV TRAILS IN STATE FORESTS

All state forest ATV trails are designated with signs. Stay on the marked trail. Roads for joint use by ATV's and vehicular traffic are marked with caution signs at all road junctions. All municipal and state-owned roadways open to ATV use are designated as such with the following sign:

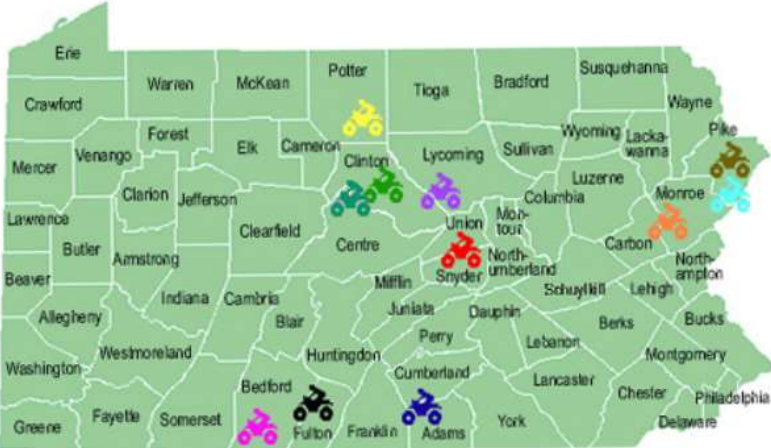
- ATV operation for people with disabilities

# ATV TRAILS IN STATE FORESTS

All state forest ATV trails are designated with signs. Stay on the marked trail. Roads for joint use by ATV's and vehicular traffic are marked with caution signs at all road junctions. All municipal and state-owned roadways open to ATV use are designated as such with the following sign:

- ATV operation for people with disabilities

State forests throughout Pennsylvania have designated and maintained the following ATV trails to accommodate trail enthusiasts:



## ATV TRAILS OPEN DURING THE SUMMER SEASON

These trails are typically open from the Friday before Memorial Day through the last full weekend in September. Check the forest district web pages for current access advisories.

## ATV TRAILS OPEN DURING THE SUMMER SEASON

These trails are typically open from the Friday before Memorial Day through the last full weekend in September. Check the forest district web pages for current access advisories.



**Martin Hill -- Bedford County** -- 18 miles of summer trail. Access to the trail is from the parking area located on Route 326 two miles south of Rainsburg.

**Trail head GPS location:** N 39° 52' 24.69" W 78° 30' 34.80"

**Contact:** [Buchanan State Forest](#), 440 Buchanan Trail, McConnellsburg, PA 17233

**Phone:** 717-485-3148



**Sideling Hill -- Fulton County** -- 15 miles of summer trail in the Wells Tannery area. Access is from Ray's Cove Road or Childers Ridge Road.

**Trail head GPS location:** N 40° 5' 0.28 W 78° 10' 12.17"

**Contact:** [Buchanan State Forest](#), 440 Buchanan Trail, McConnellsburg, PA 17233.

**Phone:** 717-485-3148



**Potter County** -- 43 miles of summer trail. A loop trail located south of Denton Hill State Park. Access to the trail is from Lyman Run State Park, on SR 44 north of Cherry Springs, or the intersection of Rock Run Road and the Ridge Trail (ATV trail). Registered Class II ATV's are permitted on this trail that are less than 58" in width and less than 1,200 pounds.

**Contact:** [Susquehannock State Forest](#), PO Box 673, Coudersport, PA 16915

**Phone:** 814-274-3600



**Maple Run Tract, Pike County** -- 8 miles of summer trail. Access is from a parking area on Route 402 1-3/4 miles north of the village of Pecks Pond. Registered Class II ATV's less than 58" in width and less than 1,200 pounds .are permitted on this trail.

**Contact:** [Delaware State Forest](#), 2174A Route 611, Swiftwater, PA 18370-7746

**Phone:** 570-895-4000

## SUMMER AND WINTER TRAILS

These summer season runs from the Friday before Memorial Day through the last full weekend in September.

The winter season runs from the day following the last day of the regular or extended antlerless deer season as established by the Game Commission through the following April 1.

There are some trails that remain closed until after the late muzzleloader season. Please check the [forest district web pages](#) for current access advisories on when trails open for the winter season.



**Pike County -- Burnt Mills** -- 7 miles of summer and winter trail. Access is from a parking area on Route 402 one mile south of Porters Lake. Registered Class II ATV's are permitted on this trail that are less than 58" in width and less than 1,200 pounds.

**Contact:** [Delaware State Forest](#), 2174A Route 611, Swiftwater, PA 18370-7746

**Phone:** 570-895-4000



**Adams and Cumberland Counties** -- 36 miles of summer trail. During the winter season the trail system is expanded to 42 miles by using some dirt roads that are gated during the winter. Part of the trail system is shared with snowmobiles when there is sufficient snowfall. The trail is located between Big Flat and Pine Grove Furnace State Park. Access to these are from parking lots located at Big Flat along Shippensburg Road about 1-1/4 miles north of its intersection with Route 233 and on Piney Mountain along Bendersville Road south of Pine Grove Furnace State Park.

**Contact:** [Michaux State Forest](#), 10099 Lincoln Way East, Fayetteville, PA 17222

**Phone:** 717-352-2211



**Snyder and Union Counties** -- 15.4 miles of summer trails. Access is at the Jacks Mountain Trailhead located along Route 235 three miles south of Glen Iron. The trail includes the East Kettle Road which has been closed to other types of motor vehicles. Registered Class II ATV's are permitted on this trail that are less than 58" in width and less than 1,200 pounds.

**Contact:** [Bald Eagle State Forest](#), 18865 Old Turnpike Rd, Millmont, PA 17845

**Phone:** 570-922-3344

## SUMMER AND WINTER TRAILS



**Clinton County** -- The [Whiskey Springs ATV Trail \(PDF\)](#) -- 50 miles of summer and winter trails. The Whiskey Springs ATV Trail is located Southeast of Kettle Creek State Park. Trailhead access is from SR 120 in Westport along Kettle Creek for approximately 1.5 miles then North on Two-Mile Road. Trails are open to registered Class II ATV's less than 58" in width and less than 1,200 pounds.

**Contact:** [Sproul State Forest](#), 15187 Renovo Road, Renovo, PA 17764

**Phone:** 570-923-6011



**Centre and Clinton County** -- [Bloody Skillet ATV Trail \(PDF\)](#) -- 38 miles of summer and winter trails. Access from SR 144 approximately 19 miles north of the Snow Shoe Exit of US Route 80. Turn right onto De Haas Road and travel 5.3 miles South, to the Northern Terminus Trailhead. Trails are open to registered Class II ATV's less than 58" in width and less than 1,200 pounds.

**Contact:** [Sproul State Forest](#), 15187 Renovo Road, Renovo, PA 17764

**Phone:** 570-923-6011



**Lycoming County** -- 17 miles of summer and winter trail. Trails are located near Haneyville and include the Button Road and a network of wooded trails built by the Civilian Conservation Corps in the 1930's. Access to the trail is from a parking area located at the former parking area located at the CCC Camp along Route 44 one mile south of Haneyville.

**Contact:** [Tiadaghton State Forest](#), 10 Lower Pine Bottom Rd, Waterville, PA 17776

**Phone:** 570-753-5409



**Dixon R. Miller Recreation Area -- (Formerly the Pohopoco Tract), Monroe County** -- 13 miles of summer and winter trails. Access is from Route 115 five miles south of I-80. Registered Class II ATV's are permitted on this trail that are less than 58" in width and less than 1,200 pounds.

**Contact:** [Delaware State Forest](#), 2174A Route 611, Swiftwater, PA 18370-7746

**Phone:** 570-895-4000



- HOME
- OHV TRAILS
- ARTICLES
- CALENDAR
- SUPPORT CENTER
- GOOD STUFF

Home > Pennsylvania > Whiskey Springs

Scroll down for trail contact information and re

## Whiskey Springs ATV Riding Area

Wednesday, August 30, 2017

- [Print](#)
- [Slideshow](#)
- [Street Map](#)
- [Trail Map](#)

Alt Names	Whiskey Springs ATV Trail, Sproul State Forest, Kettle Creek Road, Hurling Branch, Two Mile Run, Boyer Road, Fivemile Hollow, Owl Hollow Trail, Robbins Hollow, Mackintosh Hollow, Packing Patch Hollow
Last Known Status	Open

Located in the Sproul State Forest, this area offers about 45 miles of gravel and logging roads. Previous mining activity has left several play pit areas. Scenic vista points can be seen throughout the trail system.

This trail system is closed seasonally from the last weekend of September until the end of the flintlock/muzzleloader hunting season (generally around mid-January) and closes from April 1 though the Friday before Memorial Day.



There is no charge for camping but a permit is required and reservations must be made in advance by contacting the Sproul State Forest.

- [Trail Map...](#)
- [Driving Map...](#)
- [Best Nearby Trails...](#)

Like 3

## Whiskey Springs Trail Photo



Photo Submitted 6/24/2012 (Thanks!)

## Whiskey Springs Trail Photo





permit is required and reservations must be made in advance by contacting the Sproul State Forest.

[Trail Map...](#)
[Driving Map...](#)  
[Best Nearby Trails...](#)

Like 3

### Whiskey Springs Trail Photo



Photo Submitted 6/24/2012 (Thanks!)

### Whiskey Springs Trail Photo

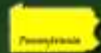


Photo Submitted 5/8/2012 (Thanks!)

### DRIVING DIRECTIONS

Nearest City

Renovo, PA



From: Williamsport, PA

- 1) Take US-220 west to Lock Haven Exit
- 2) Turn right (north) off exit ramp on SR-120, continue .8 miles
- 3) Turn left (west) on SR-120, continue 34.1 miles
- 4) Turn right (north) on Kettle Creek Road, continue 1.6 miles
- 5) Staging area is on the right (east).

[Street Map](#)

[Trail Map](#)

### TYPE OF AREA

Area	Trail
Land	State Forest

### RATINGS

Our Rating  Good   
 Recommended Stay 1-2 Days  
 Comments *(Scroll Down For Visitor Reviews & Comments)*

Photo Submitted 5/8/2012 (Thanks!)

## TERRAIN

Miles Of Trail	45	
Climate Type	Forest	
Elevation	1000 to 1500 ft.	
Trail Maintenance	Not Marked, Not Rated, Lightly Maintained	
Loose Dirt		Mostly
Hard Pack		Some
Sand		None
Mud		Some
Dust		Little
Rocks		Some
Trees		All
Steep Hills		Few
Water Crossings		Few
Small Jumps		None
Large Jumps		None
Berms		None
Single Track		None
Intersections		Some
Rider Traffic		Some
Hazards		Few
Novice		Some
Amateur		Mostly
Expert		Little

*(hazards assumed marked but use caution)*

## Whiskey Springs Trail Photo



Photo Submitted 5/8/2012 (Thanks!)

## REGULATIONS

Permit Required	No	ATVs must be registered and have proof of liability insurance.
Dates Open	Friday before Memorial Day through last full weekend of September; re-opens mid January through April 1	
Spark Arrestor	Yes	A spark arresting <b>silencer</b> or <b>end cap</b> is required for all vehicles.
Noise Limit	Yes (99 dB)	



## REGULATIONS

Permit Required	No	ATVs must be registered and have proof of liability insurance.
Dates Open	Friday before Memorial Day through last full weekend of September; re-opens mid January through April 1	
Spark Arrestor	Yes	A spark arresting <b>silencer</b> or <b>end cap</b> is required for all vehicles.
Noise Limit	Yes (99 dB)	
Whip Flags	Not Required	
Maximum Vehicle Width	Yes (58 inches)	has entrance gate or posts
Motorcycles	Prohibited	
ATVs	Permitted	(maximum width 58 inches)
UTVs / SXS	Permitted	(maximum width 58 inches)
SUVs / Jeeps (registered)	Prohibited	
Dune Buggy/Sand Rail 4x4 (unregistered)	Prohibited	
Two Strokes / 2 Cycle Engines	No Restriction	
Helmets Required	Yes	helmets required by state law
Bicycles	No Restriction	
Hiking	No Restriction	
Horseback	No Restriction	
Camping	Some Areas	(camp in developed sites only)
Campfires		
Night Riding	Unknown	
Cross Country	Prohibited	stay on trail
Emergency / Law Enforcement		
Insurance	*Disclaimer: Be Safe! RiderPlanet recommends insurance for all riders and visitors to the destinations depicted on this website.	

## FEES & PASSES

Parking (None)



Photo Submitted 5/8/2012 (Thanks!)



## Whiskey Springs Trail Photo



Brandywine Enduro Ride



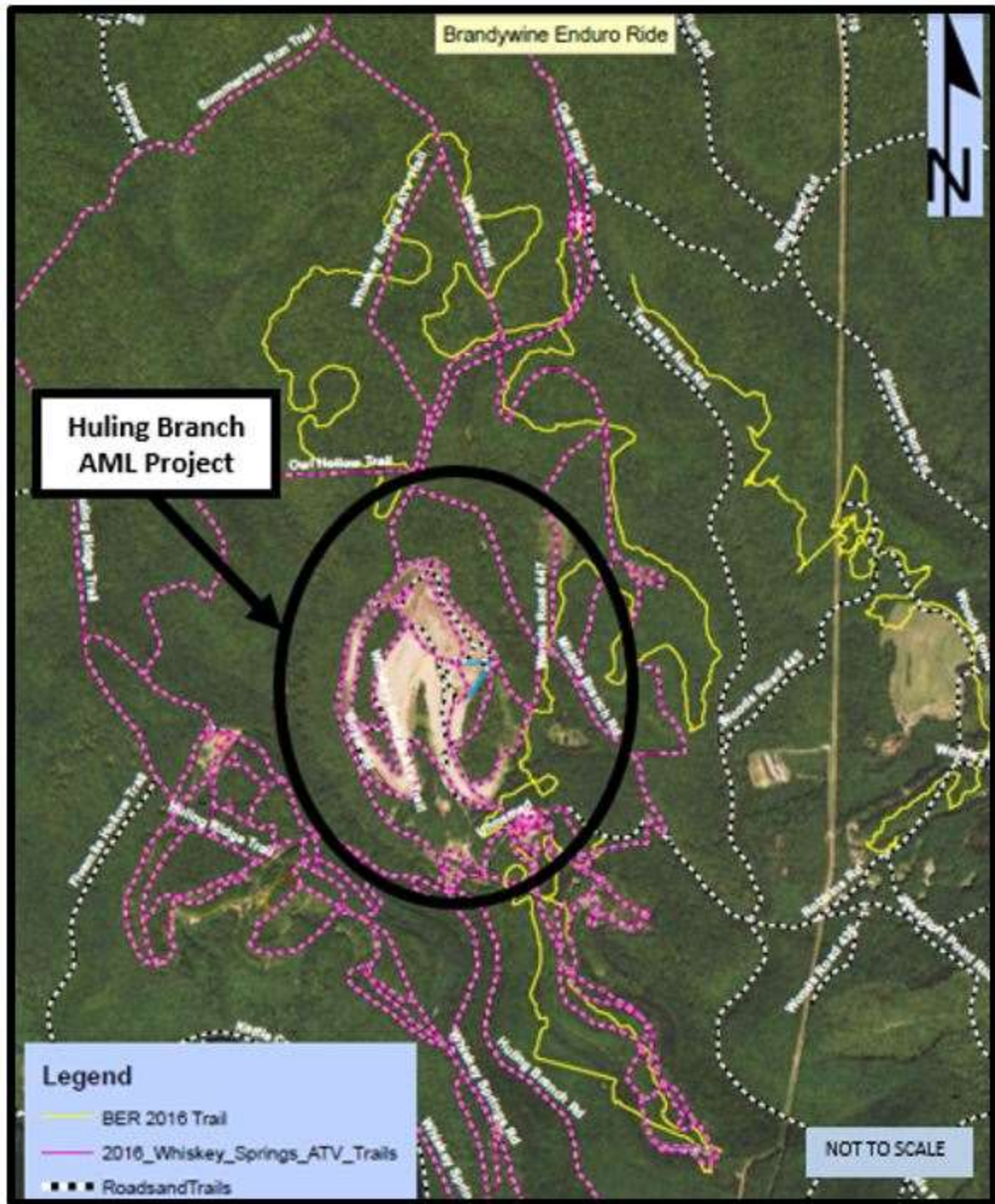
Huling Branch  
AML Project



**Legend**

- BER 2016 Trail
- 2016\_Whiskey\_Springs\_ATV\_Trails
- ■ ■ RoadsandTrails

NOT TO SCALE



# Rattlesnake National Enduro

Rd #5 Rattlesnake National Enduro, Cross Fork PA  
NEPG



- Print results
- Export CSV
- Time Format
- Presentation



Filter By:

Select class:

- 60+
- 66+
- A 200
- A 250
- A 30+
- A 40+
- A 45+
- A 50+
- A 55+
- A Open
- B 200
- B 250
- B 30+
- B 40+
- B 45+
- B 50+

Overall	C.Pos	G.Pos	Group	Number	Name	Class	Brand	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Early	Tot. Time
1	1			31A	Thad Duvall	Pro	Husqvarna	17m 17s 862 (2)	19m 51s 414 (2)	17m 27s 728 (9)	19m 15s 405 (4)	15m 51s 565 (2)	27m 35s 703 (1)		117m 19s 677
2	2			42A	Josh Strang	Pro	Husqvarna	17m 16s 501 (1)	20m 967 (3)	17m 15s 351 (4)	19m 9s 490 (3)	15m 51s 430 (1)	27m 53s 279 (4)		117m 26s 978
3	3			33A	Josh Toth	Pro	Yamaha	17m 42s 60 (8)	19m 39s 788 (1)	16m 59s 780 (1)	18m 52s 722 (1)	16m 4s 694 (5)	28m 23s 177 (8)		117m 42s 221
4	4			32A	Steward Baylor Jr	Pro	KTM	17m 28s 690 (5)	20m 24s 362 (9)	17m 14s 230 (3)	19m 18s 477 (5)	15m 58s 111 (3)	27m 38s 249 (3)		118m 2s 119
5	5			49A	Ben Kelley	Pro	KTM	17m 32s 168 (6)	20m 18s 751 (7)	17m 7s 263 (2)	19m 33s 168 (11)	16m 2s 686 (4)	27m 35s 813 (2)		118m 9s 849
6	6			37A	Jesse Groemm	Pro	KTM	17m 47s 809 (10)	20m 18s 525 (6)	17m 27s 504 (8)	18m 55s 69 (2)	16m 19s 150 (10)	27m 59s 158 (5)		118m 47s 215
7	7			36A	Cory Buttrick	Pro	KTM	17m 23s 729 (3)	20m 22s 333 (8)	17m 21s 919 (5)	19m 21s 591 (7)	16m 16s 978 (9)	28m 804 (6)		118m 47s 354
8	8			34A	Grant Baylor	Pro	Husqvarna	17m 25s 20 (4)	20m 25s 388 (10)	17m 24s 446 (7)	19m 18s 903 (6)	16m 6s 08 (6)	28m 38s 401 (11)		119m 18s 176
9	9			35A	Russell Bobbitt	Pro	KTM	17m 40s 600 (7)	20m 18s 247 (5)	17m 30s 344 (10)	19m 23s 831 (8)	16m 6s 248 (7)	28m 35s 38 (10)		119m 34s 312
10	10			47A	Ryder Lafferty	Pro	KTM	17m 44s 592 (9)	20m 27s 232 (11)	17m 44s 857 (12)	19m 27s 519 (10)	16m 7s 300 (8)	28m 20s 231 (7)		119m 51s 731
11	11			38A	Evan Smith	Pro	KTM	17m 52s 30 (11)	20m 18s 216 (4)	17m 22s 835 (6)	19m 25s 692 (9)	16m 27s 29 (11)	28m 59s 861 (12)		120m 25s 663
12	12			44A	Nick Fahringer	Pro	Sherco	18m 21s 232 (15)	21m 9s 512 (16)	17m 45s 126 (13)	19m 45s 541 (13)	16m 38s 855 (13)	28m 23s 227 (9)		122m 3s 493
13	1			21A	Thorn Devlin	Expert-AA	Husqvarna	19m 25s 672 (36)	20m 56s 309 (13)	17m 40s 133 (11)	19m 50s 559 (14)	16m 33s 484 (12)	30m 5s 730 (16)		124m 32s 87



## QUALITY SINGLE-TRACK RACING



### About the NEPG

The NEPG was formed by a group of Enduro enthusiasts to assist the AMA in promotion and management of the AMA National Enduro Series. Our objective is to work with the riders, clubs and sponsors to raise the level of participation and awareness to Enduro competition.

### About the AMA National Enduro Series

Enduros are the oldest form of off-road motorcycle competition in the USA. Enduros can trace their beginnings back to 1920 and perhaps even earlier and it is still the premier off road motorcycle competition around the world today.

### Evolution

The sport has evolved several times over the years and the newest evolution was designed to meet the needs of today's motorcyclists. The NEPG is the promotional partner of the AMA National Enduro Championship Series and will work with clubs to build awareness and increase ridership at Enduro's. Our goal is to make sure that the oldest form of off road competition will remain strong and viable well into the future.







## Top Rider Participation



**JOSH STRANG**  
ROCKSTAR ENERGY HUSQVARNA



**TEGAN TEMPLE**  
BETA USA



**RUSSELL BOBBITT**  
FMF/KTM



**ANDREW DELONG**  
ROCKSTAR ENERGY HUSQVARNA



**THAD DUVAL**  
KR4 Racing



**KAILUB RUSSELL**  
FMF/KTM



**GRANT BAYLOR**  
AM PRO YAMAHA



**CORY BUTTRICK**  
SRT RACING



**STEWART BAYLOR**  
SRT RACING

# PRESENTATION





# OEM DEMOS



# FACTORY PARTICIPATION



# PARTNER PROMOTIONS



# KEY TIME

## THE MANY FACES OF ENDURO RACING

DIRT RIDER

Story and Photos by Dean Moore

Most of us have helped out at a local motorcycle race by flagging or scoring an event and have learned that there's a lot involved with working an event, not to mention putting one on. Imagine what it takes to run an entire national series, especially one as big and prestigious as the Honda AMA National Enduro Series! There's plenty more going on behind the scenes than you might think at a national enduro, and *Dirt Rider* went under cover with Alan Randt, head of the National Enduro Promotions Group, to find out just what happens before and after key time.



Reciter: Every Husqvarna Factory Racing's Josh Strang came on strong at the end of the season, narrowly missing his first national enduro win on second behind Taylor.

### IN THE BEGINNING

The main objective of the National Enduro Promotions Group (NEPG) is to guarantee consistency from event to event. Since the races are hosted by a different local club at each different location on the schedule, there needs to be some continuity between events so the riders know that every race on the calendar is going to be a quality event. So before any work on the course is started, the NEPG

has the course fully arrowed and the mileage markers are up. That's when the NEPG goes to work, riding the course to see that time check locations are marked so they can guarantee that the course is easily accessible not only for the track crews but for the NEPG staff as well. A spot for the actual scoring equipment is then marked out at the start and end of each test.

When running the course for the first time, the NEPG crew rides it with an

ing down from them so if someone would happen to blow a turn, they go underneath and don't break down the ribbon for the next guy, so that course marking would stay intact from the first guy to the last guy."

### TAKING CARE OF BUSINESS

Melissa Randt is Alan's wife and right-hand man... er, woman. Melissa is in charge of taking care of the



Eight-time national enduro champ Mike Lafferty (left) and Alan Randt check out markers as they pre-ride the course at last year'silly ending round.



Melissa Randt talks to Andrew DeLong and others about what his team will have access.

sends each club an information packet giving them guidelines such as the recommended length of the tests and the recommended total mileage. According to Randt, the recommended length of a test ranges from 6 to 12 miles, and events usually consist of six tests with the C riders usually riding only four of those and the B riders dropping out after five.

### CHECKING THE COURSE

When Randt and his crew show up at the venue—usually on Wednesday or Thursday—the hosting club already

eye toward the average rider while also taking into consideration the pro riders. The objective is to make it fun for everyone.

"You have to keep all of those things in mind," Randt says, "particularly when it comes to course markings. The pro riders are going so much faster than what a lot of the club riders are familiar with, so you need to have turn arrows far enough ahead to warn them there's a corner coming up, and not necessarily just arrows right at the turn. We also like having our ribbons up high with some streamers hang-

ings and riders. She puts together a map for the teams and the video and photography personnel so that they know where they need to be and what time they need to be there during the race. Then on Saturday she'll take the pro teams around and physically show them where their riders will be at certain times and what access they have to the course. The NEPG tries to have access after every test somewhere between the end and the beginning of the next test for those teams to refuel and do maintenance.

The former national enduro champions, Russell Boddie (left) and Andrew DeLong, joke around while setting their ribbons today time.

# The Huling Branch AML Reclamation Project

## ◆ 3 Primary Project Concerns/Objectives:

- 1<sup>st</sup> - Eliminate P2 DH Conditions of over 6,000 L.F.
  - ◆ Intense site visitation due to the unauthorized use of the AML site by ATV riders to areas off of PA DCNR's designated Whiskey Springs ATV trail within the Sproul State Forest
  - ◆ Whiskey Springs ATV trail is 50 miles long, 3.6 miles within project area
  - ◆ 40 acre ATV play area
  - ◆ Numerous accidents, several of which required life flight helicopter
  - ◆ Reforestation Initiative of Sproul State Forest
- 2<sup>nd</sup> – Maintain & Establish 3.6 miles of ATV trail
  - ◆ ATV trail supported recreational use by visitors of Sproul State Forest
  - ◆ Portions of the ATV trail used for the annual Rattlesnake National Enduro
- 3<sup>rd</sup> – Reduce site AMD impacts on both surface and groundwater
  - ◆ AMD Source Remediation through Alkaline Addition placement
  - ◆ Removal and or special handling of acid forming materials
  - ◆ Hydrologic controls and identification

# ACID MINE DRAINAGE IN THE KETTLE CREEK WATERSHED

THE KETTLE CREEK WATERSHED encompasses approximately 244 sq. miles, ranging from its headwaters in southwestern Tioga County, through Potter County to its confluence with the West Branch of the Susquehanna River in northwestern Clinton County. Although the majority of the watershed is classified as having exceptional water quality, the lower basin of Kettle Creek is polluted with acid mine drainage (AMD). AMD is a result of historic coal mining practices that began over 100 years ago.

AMD is caused by the flow of water, through abandoned and poorly reclaimed coal mine environments. AMD directly impacts many of the streams in the lower Kettle Creek watershed, rendering them essentially lifeless. The last 6 miles of Kettle Creek and many miles of tributaries are impacted by AMD, and this polluted water flows into the West Branch of the Susquehanna River, polluting it as well.



## WHAT ARE THE EFFECTS OF ACID MINE DRAINAGE ?

High acidity [ low pH ]  
High metal concentrations [ aluminum, iron, and manganese ]  
High sulfate levels  
Excess sediment  
All the above create conditions in which fish and other aquatic organisms cannot survive.

## VISUAL EFFECTS OF ACID MINE DRAINAGE

Iron causes yellow - orange to rust colored staining that is apparent on the rocks  
Aluminum is responsible for the white color often seen on exposed rocks  
Manganese will stain rocks black

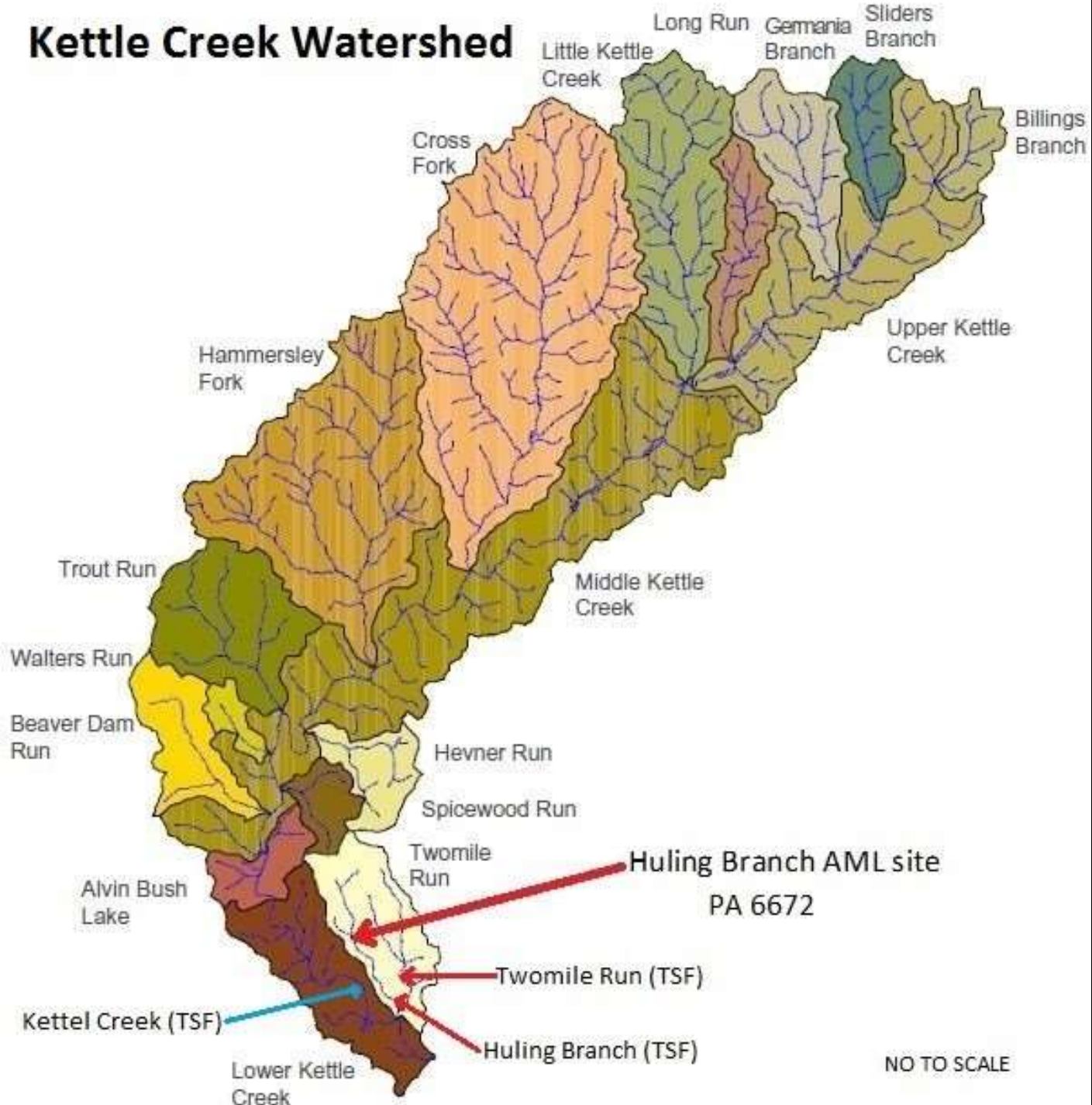
## WHAT IS BEING DONE TO TREAT THE KETTLE CREEK AMD ?

Kettle Creek Watershed Association, a local non-profit organization, is working to restore the lower KettleCreek watershed through treatment of AMD. The KCWA works closely with Trout Unlimited and many other partners to develop and implement treatment strategies using the best technical solutions. See the opposite side on this sign for more information on the Middle Branch passive treatment system.

For up-to-date information, please write to: KCWA, P. O. Box 317, Cross Fork, PA 17729 or check the website at [WWW.kettlecreek.org](http://WWW.kettlecreek.org)



# Kettle Creek Watershed



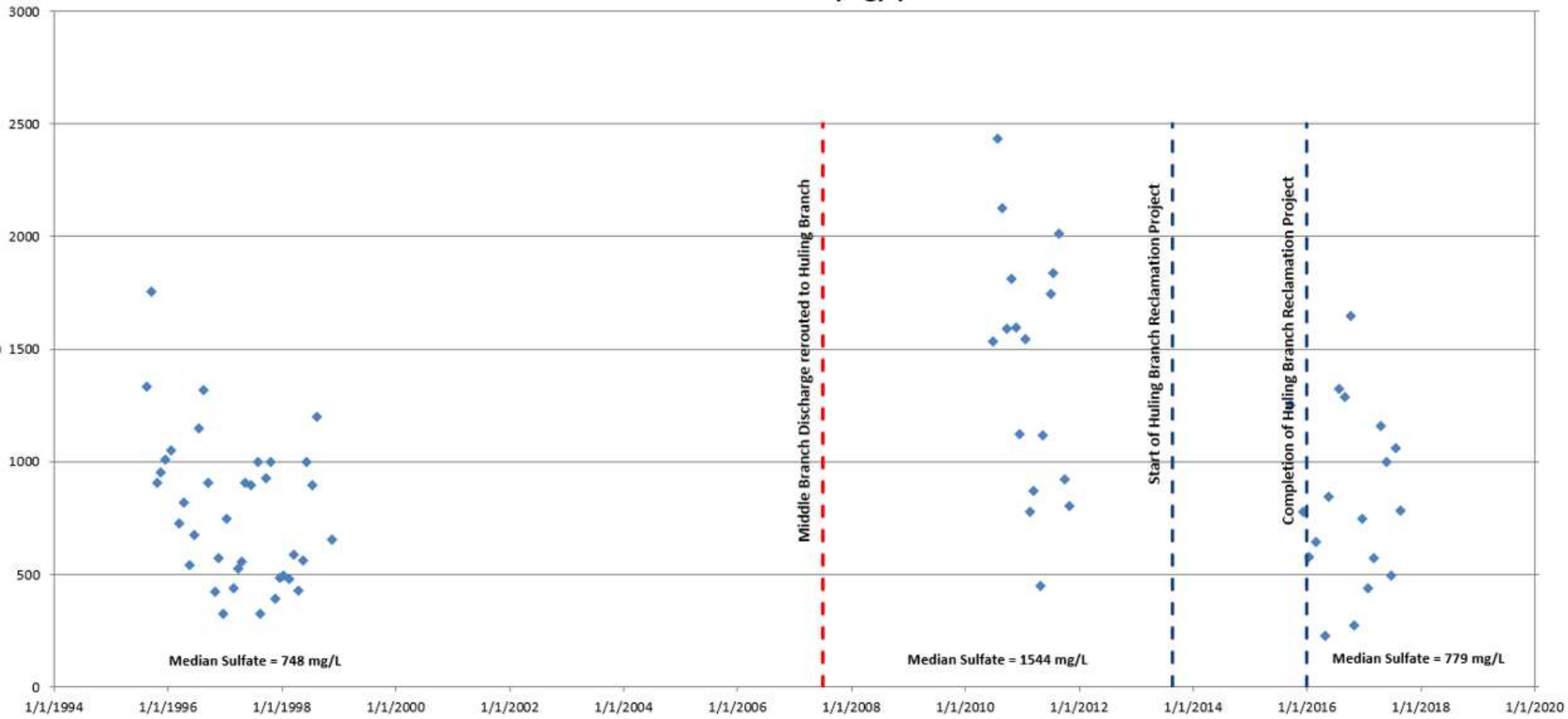
# The Huling Branch AML Reclamation Project

- ◆ Innovative Use of Current Technology:
  - Forestry Reclamation Approach (FRA) Grading
  - Reduce site AMD impacts on both surface and groundwater
    - ◆ AMD Source Remediation through Alkaline Addition placement
    - ◆ Removal and or special handling of acid forming materials
    - ◆ Hydrologic controls and identification
  
- ◆ Site 4 Discharge Pre-Condition vs. Post-Condition:
  - Median Values of Sulfate Concentration decreased by 50%
  - Median Values of Acidity Concentration decreased by 37%
  - Median Values of Manganese Concentration decreased by 49%

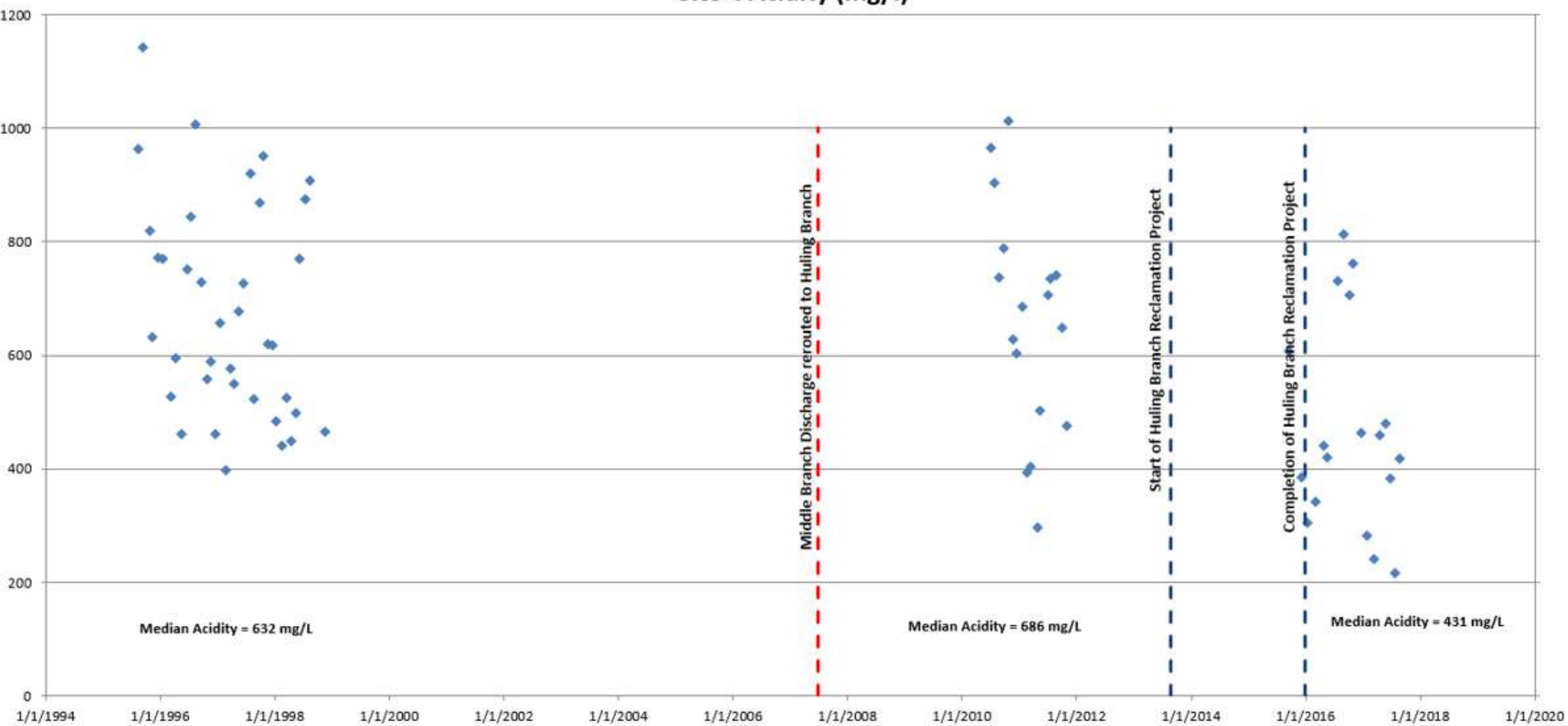




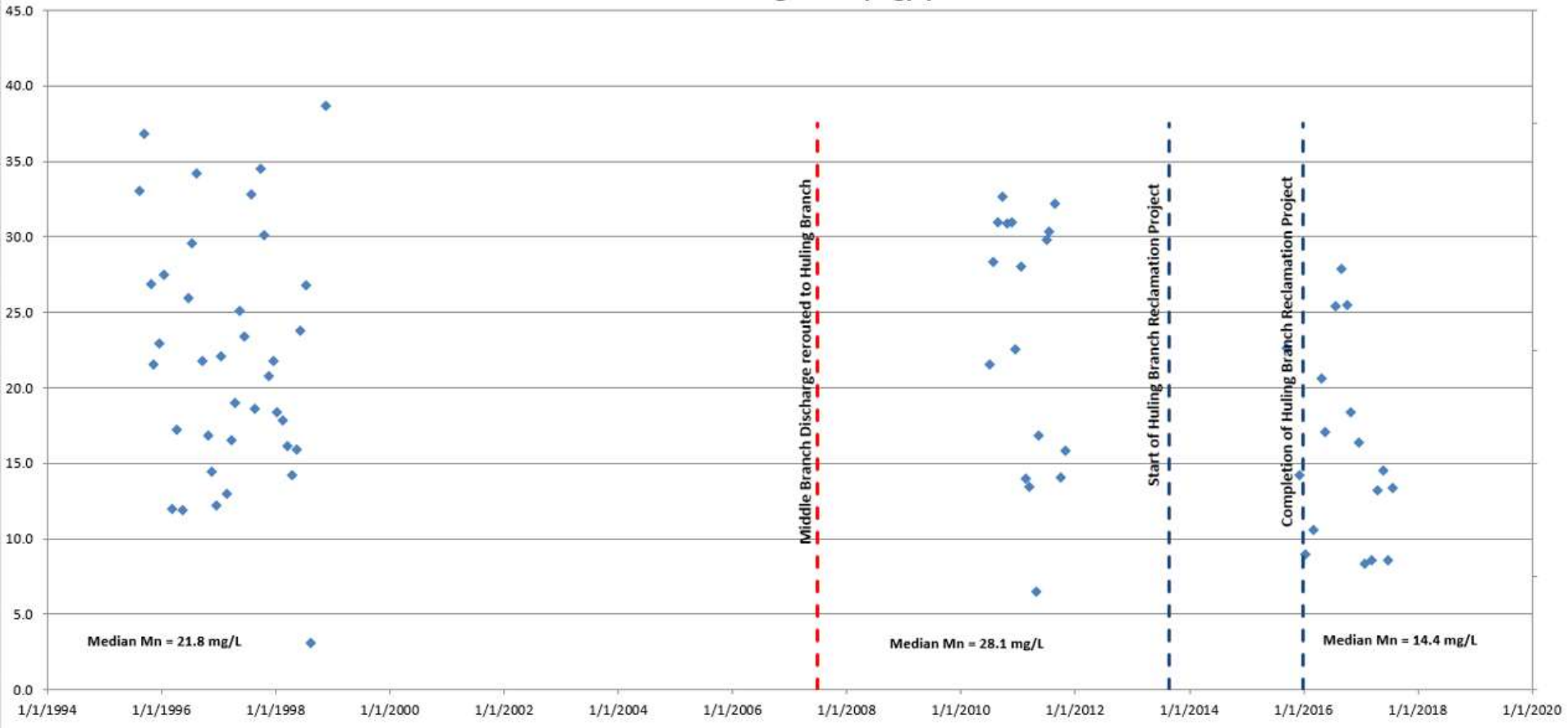
### Site 4 Sulfate (mg/l)



### Site 4 Acidity (mg/l)



# Site 4 Manganese (mg/l)











### Area 7 Central Tributary

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l
1/26/2017	7485404	30	5.8	11.0	-4.4	0.02	0.470	0.408	155.4
3/8/2017	7485503	40	5.8	13.0	0.8	0.042	0.348	0.323	134.8
4/19/2017	7485521	5	6.0	12.8	-0.4	0.056	0.698	0.2	124
6/21/2017	7485404	15	6.2	22.0	-9.2	0.102	0.578	0.2	70





**Area 7 West Side Drain**

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
12/22/2016	7485202	2.5	2.7	0	701.40	36.90	18.60	80.70	761.0	21.1
1/26/2017	7485403	33	2.9	0	503.60	30.70	13.70	61.70	884.1	199.8
3/8/2017	7485502	6.5	2.8	0	555.4	24.92	17.91	80.61	1216	43.4
4/19/2017	7485518	3.5	2.8	0	625.6	33.48	14.2	65.12	1213	26.3
5/24/2017	7485702	1.0	2.8	0	722.6	21.87	21.9	88.9	1289	8.7
6/21/2017	7485403	40	2.8	0	482.4	34.5	9.46	42.4	645.2	231.9
	<b>Median</b>				<b>590.50</b>	<b>32.09</b>	<b>16.06</b>	<b>72.87</b>	<b>1048.55</b>	<b>34.86</b>



**Area 7 East Side Drain**

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
1/26/2017	7485405	15	3.10	0	197.60	24.60	1.92	17.0	393.00	35.6
3/8/2017	7485504	5	2.8	0	372.6	49.21	3.54	31.43	718.9	22.4
4/19/2017	7485519	5	2.8	0	349.6	38.1	3.219	24.34	650.1	21.0
5/24/2017	7485503	3	2.8	0	415.6	46.3	3.72	31.11	744.4	15.0
6/21/2017	7485405	15	3.0	0	179.8	19.0	1.59	12.6	274.1	32.4
	<b>Median</b>				<b>349.60</b>	<b>38.10</b>	<b>3.22</b>	<b>24.34</b>	<b>650.10</b>	<b>22.39</b>



**Area 7 Far East Side Drain**

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
1/26/2017	7485406	72	2.6	0	748.4	64.2	11.3	79.7	1415.00	647.7
3/8/2017	7485505	18	2.7	0	668.2	50.44	11.6	82.1	1185	144.6
4/19/2017	7485520	18	2.6	0	1007.8	57.86	15.62	108.5	1585	218.0
5/24/2017	7485704	14	2.7	0	845.2	55.65	15.45	100.6	1235	142.2
6/21/2017	7485406	100	2.6	0	711.2	60.1	10.49	75.8	815.6	854.9
	<b>Median</b>				<b>748.40</b>	<b>57.86</b>	<b>11.60</b>	<b>82.10</b>	<b>1235.00</b>	<b>218.05</b>

# The Huling Branch AML Reclamation Project

## Area 7 West Side Drain

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
12/22/2016	7485202	2.5	2.7	0	701.40	36.90	18.60	80.70	761.0	21.1
1/26/2017	7485403	33	2.9	0	503.60	30.70	13.70	61.70	884.1	199.8
3/8/2017	7485502	6.5	2.8	0	555.4	24.92	17.91	80.61	1216	43.4
4/19/2017	7485518	3.5	2.8	0	625.6	33.48	14.2	65.12	1213	26.3
5/24/2017	7485702	1.0	2.8	0	722.6	21.87	21.9	88.9	1289	8.7
6/21/2017	7485403	40	2.8	0	482.4	34.5	9.46	42.4	645.2	231.9
<b>Median</b>					<b>590.50</b>	<b>32.09</b>	<b>16.06</b>	<b>72.87</b>	<b>1048.55</b>	<b>34.86</b>

## Area 7 East Side Drain

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
1/26/2017	7485405	15	3.10	0	197.60	24.60	1.92	17.0	393.00	35.6
3/8/2017	7485504	5	2.8	0	372.6	49.21	3.54	31.43	718.9	22.4
4/19/2017	7485519	5	2.8	0	349.6	38.1	3.219	24.34	650.1	21.0
5/24/2017	7485503	3	2.8	0	415.6	46.3	3.72	31.11	744.4	15.0
6/21/2017	7485405	15	3.0	0	179.8	19.0	1.59	12.6	274.1	32.4
<b>Median</b>					<b>349.60</b>	<b>38.10</b>	<b>3.22</b>	<b>24.34</b>	<b>650.10</b>	<b>22.39</b>

## Area 7 Far East Side Drain

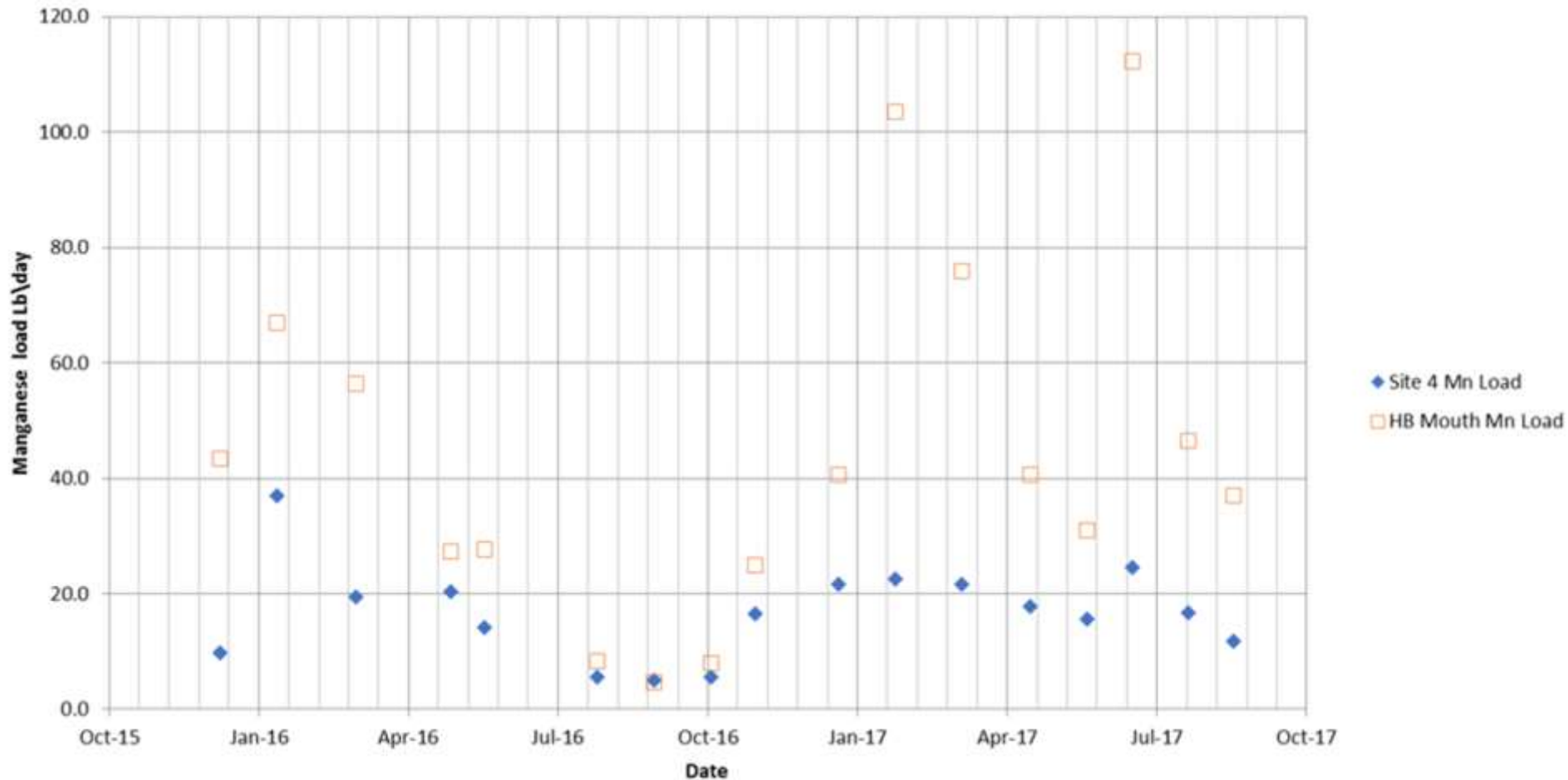
Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l	Acid Load lbs/day
1/26/2017	7485406	72	2.6	0	748.4	64.2	11.3	79.7	1415.00	647.7
3/8/2017	7485505	18	2.7	0	668.2	50.44	11.6	82.1	1185	144.6
4/19/2017	7485520	18	2.6	0	1007.8	57.86	15.62	108.5	1585	218.0
5/24/2017	7485704	14	2.7	0	845.2	55.65	15.45	100.6	1235	142.2
6/21/2017	7485406	100	2.6	0	711.2	60.1	10.49	75.8	815.6	854.9
<b>Median</b>					<b>748.40</b>	<b>57.86</b>	<b>11.60</b>	<b>82.10</b>	<b>1235.00</b>	<b>218.05</b>

# The Huling Branch AML Reclamation Project

	Site 4 Discharge Area 7			Huling Branch Mouth		
	<u>Mn load</u>	<u>Acid Id.</u>	<u>SO4 load</u>	<u>Mn load</u>	<u>Acid Id.</u>	<u>SO4 load</u>
	<u>#/day</u>	<u>#/day</u>	<u>#/day</u>	<u>#/day</u>	<u>#/day</u>	<u>#/day</u>
12/8/2015	9.8	265.5	536.8	43.3	972.7	2451.6
1/12/2016	37.0	1260.6	2382.1	67.0	1818.6	4702.1
3/1/2016	19.5	627.2	1181.4	56.4	2078.7	3211.2
4/28/2016	20.3	434.8	226.0	27.3	460.1	1430.1
5/19/2016	14.1	347.5	698.4	27.7	692.2	1746.2
7/27/2016	5.5	157.9	286.5	8.3	137.3	464.9
8/31/2016	5.0	146.6	232.4	4.7	84.5	251.6
10/5/2016	5.5	152.9	356.8	8.0	139.9	423.1
11/1/2016	16.6	687	247	24.9	702.5	1430.8
12/22/2016	21.7	613	986.5	40.7	980.3	8748
1/26/2017	22.5	765.1	1177.3	103.5	2539.3	4747
3/8/2017	21.6	607.6	1440.6	75.9	1894.3	4346
4/19/2017	17.8	642.2	1567.3	40.6	1082.2	2457
5/24/2017	15.7	519.5	1078.7	30.9	870.1	1908
6/21/2017	24.6	1105	1422.5	112.3	1221.0	6973
7/25/2017	16.8	272.8	1335.3	46.5	1060.6	3726
8/22/2017	11.7	361.3	675.5	37.02	764.0	7945

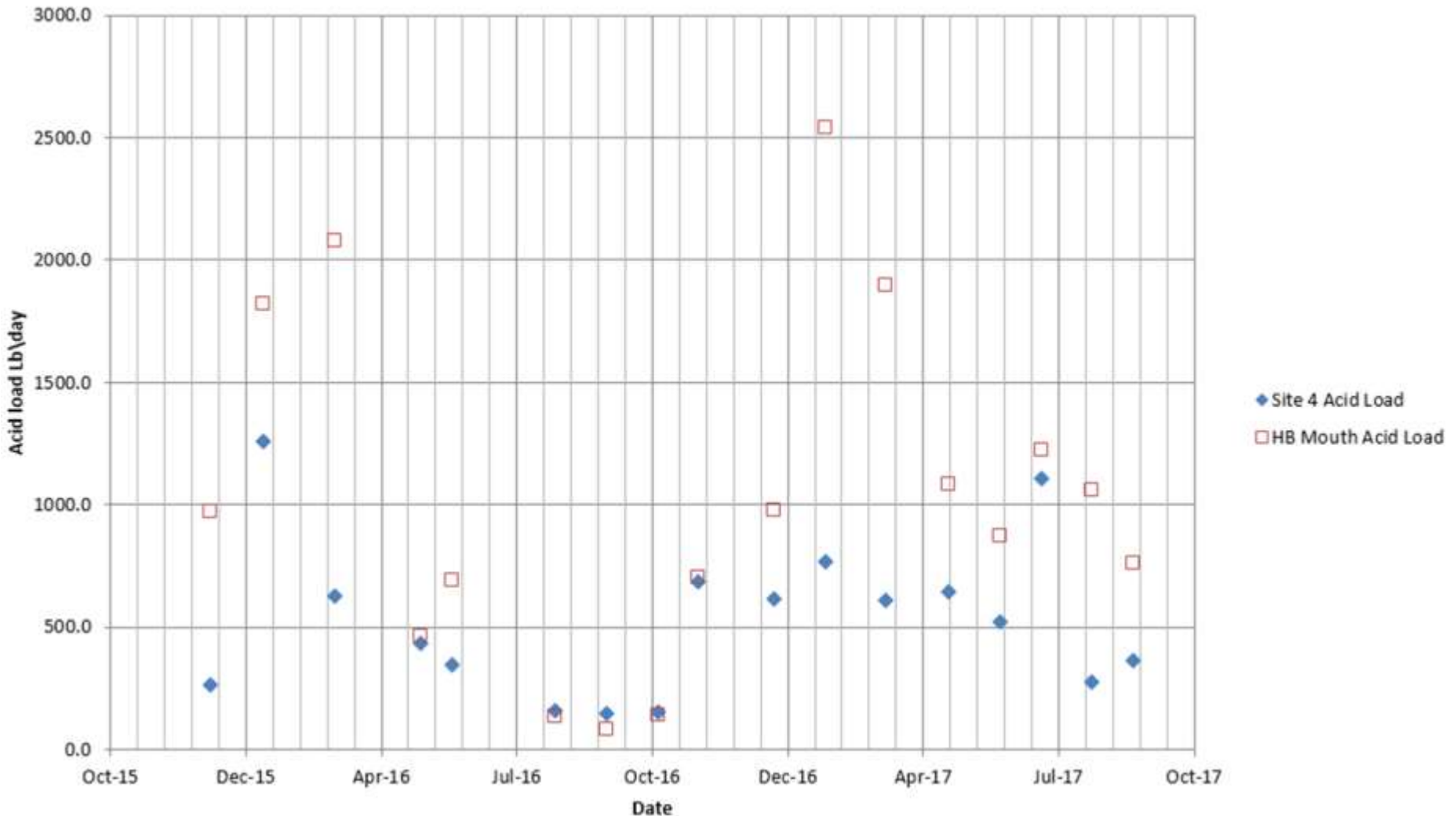
# The Huling Branch AML Reclamation Project

## ◆ Manganese Loading – Site 4 vs. Huling Branch Mouth



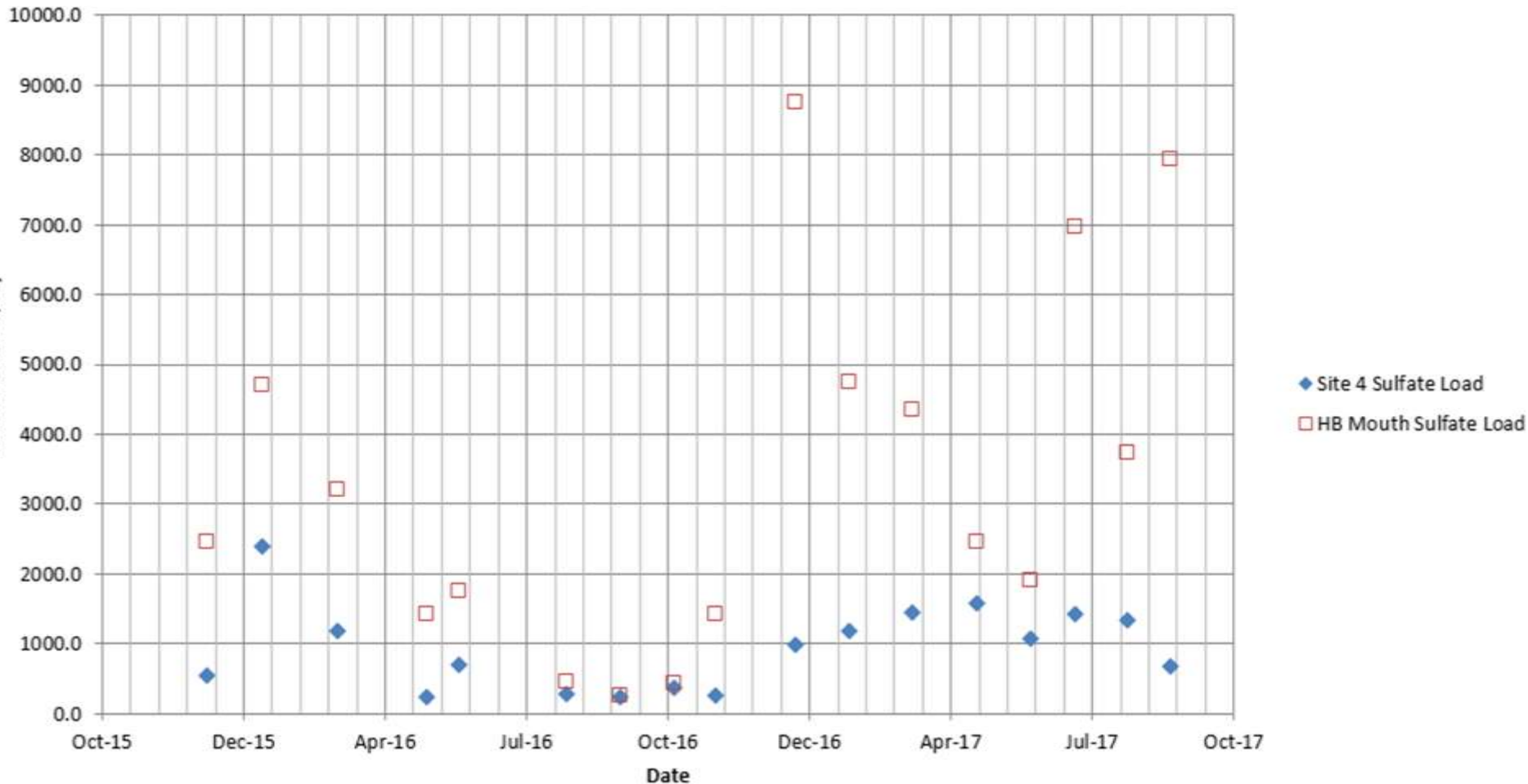
# The Huling Branch AML Reclamation Project

## ◆ Acid Loading – Site 4 vs. Huling Branch Mouth



# The Huling Branch AML Reclamation Project

## ◆ Sulfate Loading – Site 4 vs. Huling Branch Mouth





# The Huling Branch AML Reclamation Project



## Area 6 Underground Mine Discharge to Huling Branch

Date	Sample Number	Flow (gpm)	pH	Alkalinity mg/l	Hot Acidity mg/l	Iron (D) mg/l	Manganese (D) mg/l	Aluminum (D) mg/l	Sulfate (D) mg/l
12/8/2015	7485603	5	3.8	0	78.2	0.06	2.466	9.04	124.5
3/1/2016	7485204	50	3.8	0	61.4	0.06	2.132	7.84	118.6

## Area 5 & 6 Groundwater Monitor Wells

7/26/2017	7485050		3.7	0.00	115.4	0.2	2.67	17.4	165.2
7/26/2017	7485010		5.1	9.60	20	3.74	7.08	0.2	155
7/26/2017	7485020		4.1	3.20	139.6	42.6	5.05	8.53	272.5

**Pre 2010 to Post 2016 Water Quality Monitoring Values (Identical Alkaline Addition Rate) of The Dents Run AML/AMD Ecosystem Restoration Project Versus The Huling Branch AML Reclamation Project**

Point Description	# of samples (N)	Pre / Post	pH	Alkalinity (mg/l)	Hot Acidity (mg/l)	Total Fe (mg/l)	Mn (mg/l)	Al (mg/l)	Sulfate (mg/l)
Point 8 Left fork of 1st upstream trib	15	Pre 2010 Median	3.5	0	66	3.9	7.8	1.7	271
	4	Post 2010 Median	3.5	0	38.3	1.7	4.5	1.1	195
	% Change					-42%	-56%	-42%	-35%
Point 9 Right fork of 1st upstream trib	15	Pre 2010 Median	3.5	0	122.1	3.3	13.0	11.9	543.2
	4	Post 2010 Median	3.7	0	85.5	1.8	7.9	8.1	450.5
	% Change					-30%	-45%	-39%	-32%
Point 11 Trib mouth north PA 3897	14	Pre 2010 Median	3.7	0	132	7.5	45.3	2.6	2042.15
	5	Post 2010 Median	4	1	68	0.28	20.0	2.4	1109
	% Change					-48%	-96%	-56%	-8%
Point 13 Pond discharge PA 3898	12	Pre 2010 Median	3.7	0	210.4	2.0	18.6	27.5	731.65
	4	Post 2010 Median	4.3	7.9	87.7	0.53	8.5	11.5	487
	% Change					-58%	-74%	-54%	-58%
Point 14 Pit Discharge PA 3898	10	Pre 2010 Median	2.8	0	615	29.2	23.3	62.2	1083.65
	3	Post 2010 Median	4	0	112	0.34	5.8	7.8	1142
	% Change					-82%	-99%	-75%	-87%
Point 15 Trib Mouth PA 3898	12	Pre 2010 Median	3.4	0	228	4.2	29.2	25.7	1300
	4	Post 2010 Median	4.1	2.9	78	0.66	19.4	8.7	1076
	% Change					-66%	-84%	-34%	-66%
Point 17 Discharge PA 1934	43	Pre 2010 Median	2.8	0	1433.2	300	24.3	102.7	2950.3
	11	Post 2010 Median	2.8	0	1599	300	26.2	114.5	2887
	% Change					12%	0%	8%	11%
Point 19 Discharge PA 1934	15	Pre 2010 Median	3.1	0	369	15000	45.4	33.2	1564.4
	4	Post 2010 Median	3.4	0	145	7828	25.7	13.4	1235
	% Change					-61%	-48%	-43%	-60%
Point 20 Artesian Discharge PA 3897	14	Pre 2010 Median	6.8	31	287	18.5	33.3	0.61	2025.9
	4	Post 2010 Median	6.0	66.5	280	16.8	31.8	0.51	2189
	% Change					-2%	-9%	-5%	-16%
Huling Branch Site 4 Discharge	17	Pre 2010 Median	2.6	0	686	58.3	28.1	52	1545
	13	Post 2010 Median	2.7	0	441	53	17.1	23.6	741
	% Change					-36%	-9%	-39%	-55%

Note: This subset of sample points represent only reclamation areas where source abatement and alkaline material addition techniques were deployed. No passive or active treatment is occurring in connection with these locations. The 320 acre Dents Run AML/AMD Ecosystem Restoration Project started in October 2002 and was completed in March 2012.

# The Huling Branch AML Reclamation Project

- ◆ Transferability to Other AML Projects:
  - Same Alkaline Addition method to abate AMD of the Huling Branch AML Reclamation Project will be applied to the FY2016 AML Pilot Project of “Fran Contracting Camp Run No. 2”
  - Fran Contracting Camp Run No. 2
    - ◆ 50 acres site of highly acidic mine SA
    - ◆ Located in nearby East Keating Township, Clinton County
    - ◆ Construction scheduled to begin in the fall of 2017

# ▶ The Huling Branch AML Reclamation Project

## ◆ Post-Construction Conditions:







































8.27  
25.5

PH °C/F

waterproof



Bureau of Abandoned Mine Reclamation

- ◆ Nomination and media (pictures and video) are available at:

<http://www.dep.pa.gov/Business/Land/Mining/AbandonedMineReclamation/ProgramAccomplishments/Pages/PA'sAwardWinningReclamationProjects.aspx>

# THANK YOU

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