



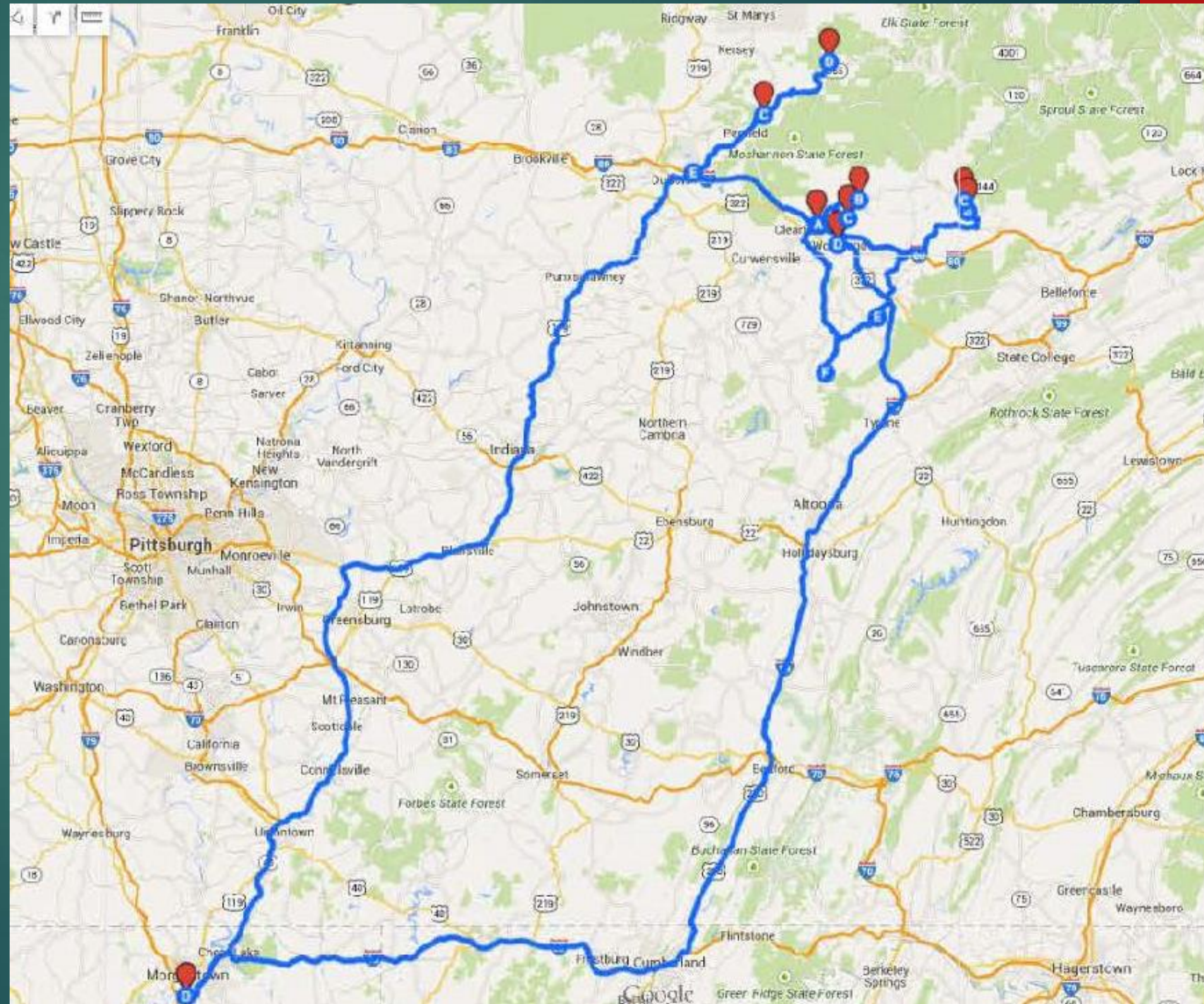
2014 West Virginia Mine Drainage Task Force Fall Tour

TIM DANEHY, QEP, BIOMOST, INC. MINING & RECLAMATION SERVICES

2015 WVMDTF SYMPOSIUM, MARCH 31ST, 2015, MORGANTOWN, WV

DESTINATION: PA WILDS

- ▶ OBJECTIVES:
- ▶ Tour Mine Drainage Treatment Facilities
- ▶ See Technology In Action
- ▶ Talk to Operators
- ▶ Learn Stuff
- ▶ Eat
- ▶ Shoot Guns
- ▶ Visit Mine Sites
- ▶ Eat some more....
- ▶ Present Current Knowledge at Symposium!
- ▶ <http://www.visitpa.com/regions/pennsylvania-wilds>



DESTINATION: HOLLYWOOD

- ▶ 21 Abandoned Discharges
- ▶ 200-7000 GPM
 - ▶ (2000 average)
- ▶ Operator: PADEP, Bureau of Conservation and Restoration since 2012
- ▶ Contacts (PADEP): Pam Milavec, Eric Cavazza, Bill Dadamo, Craig Treese
- ▶ Bennett Branch Sinnemahoning Creek is now a Stocked Fishery
- ▶ <https://www.youtube.com/watch?v=xERv4sYgyLY>



DESTINATION: DENTS RUN 3895

- ▶ Passive Treatment (2008)
 - ▶ Low-pH Iron Removal
 - ▶ Vertical Flow Ponds
 - ▶ Horizontal Flow Limestone Bed
- ▶ Raw: 1,400 Acid; 275 Fe; 130 Al
- ▶ 86% Fe Removal at Low pH
- ▶ ~30 GPM
- ▶ Treated: -180 Acid; <1 Fe & Al
- ▶ Bennett Branch Watershed Association; PADEP-BAMR, USACE, P&N Coal
- ▶ <http://www2.datashed.org/dents-run-site-3895/dashboard>



DESTINATION: PORCUPINE RUN

- ▶ PADEP-BAMR
- ▶ Bennett Branch Watershed Association (Ken Rowe)
- ▶ Lime Dosers
- ▶ Land Reclamation
- ▶ Passive Treatment Systems
- ▶ Restoration of Dents Run
- ▶ http://www.dep.state.pa.us/dep/subject/adv coun/min rec/MRAB_2011/july/Cavazza_PA.pdf



DESTINATION: DINNER!

- ▶ DENNY'S BEER BARREL PUB!
- ▶ WORLD'S LARGEST HAMBURGER!
- ▶ Clearfield, PA
- ▶ <http://www.dennysbeerbarrelpub.com/>



DESTINATION: MANOR

- ▶ PADEP – Moshannon District Office
 - ▶ Mario Carrello & Eric Rosengrant
- ▶ Gongaware Environmental Svcs.
- ▶ Calcium Oxide – Aquafix System
- ▶ 170 GPM; 400 Acid; 230 Fe; 25 Al
- ▶ MixWell & A-Mixer
- ▶ 40% Chemical Reduction
- ▶ 50% Sludge Handling Reduction
- ▶ <http://wvmdtaskforce.com/proceedings/12/13-Leavitt-Passive-Mixing-Paper.pdf>



DESTINATION: BEAR HILL

- ▶ PADEP – Moshannon District Office
 - ▶ Mario Carrello & Eric Rosengrant
- ▶ Constructed: 2005
- ▶ Auto-Flush VFP → SP → Jennings-Type VFP → SP
- ▶ Raw: 150 Acid; 18 Al; 19 Mn
- ▶ Treated: -89 Acid; <1 Al; 10 Mn
- ▶ 60 GPM



DESTINATION: RUSHTON

- ▶ PPL Electric Rushton AMD Treatment Plant
- ▶ Recent improvements by Dietz-Gourley Consulting, LLC
- ▶ Stay tuned!
 - ▶ 2:30 today!
- ▶ <http://www.dgengr.com/>



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DESTINATION: PINE GLEN (ACTIVE)

- ▶ PADEP-Moshannon DMO & PADEP BAMR
- ▶ Hydrated Lime - 400 GPM Design Flow
- ▶ 140 Acid; 6 Fe; 16 Al; 30 Mn
- ▶ Bond Forfeiture (Title V) *AND* Abandoned (Title IV)
- ▶ “Historic” Stream Diversion



DESTINATION: PINE GLEN EAST

- ▶ PADEP-BAMR/BCR (Pam Milavec, Rich Beam)
- ▶ Automatic Flushing Limestone Bed
- ▶ Pre-Construction Stream: ~4.5 pH; ~6 Al
- ▶ Post Construction Stream: ~7 pH; <1 Al
- ▶ Removed 12 stream miles from impaired waters list
- ▶ http://water.epa.gov/polwaste/nps/success319/pa_sterling.cfm



10.03.2014