



# **Loyalsock Creek MINE LAND RECLAMATION AND TREATMENT**



**Sullivan County Conservation District**





**THE LOYALSOCK CREEK AT RINGDALE**



# **TO BEGIN...**

- **History of mining in the upper Loyalsock Creek**
- **Effects of mining on the land and the 'sock**
  - **What is Acid Mine Drainage (AMD)**
    - **The Clean-up efforts...**





**HIGH WALLS REMAINING AFTER SURFACE MINING**





**ABANDONED MINE TUNNELS INVITE DANGER**





**ABANDONED STRIP MINE PIT**





**THE LONG PROCESS OF BACKFILLING SURFACE MINES**





**LARGE AMOUNTS OF MATERIAL ARE MOVED TON BY TON**





**WHEN COMPLETE, LIME, SEED MIX AND MULCH ARE APPLIED**





**THIS PROCESS IS DONE BY COMMERCIAL APPLICATORS**





**ONCE WASTED LAND, NOW A RENEWED HABITAT FOR WILDLIFE**





**THROUGH ENHANCED SEEDING, A GREAT WILDIFE FOOD PLOT**





**AMD DISCHARGE SITE ON THE UPPER SOCK**





## **CONSTRUCTION OF TREATMENT CELLS BEGIN**

E.M. Brown  
Construction  
Clearfield, PA





**LIMESTONE DIVERSION CHANNEL**





**DIVERSION OF ACIDIC WATER DURING CONSTRUCTION**





## **SETTLING POND CONSTRUCTION**





**OUTFALL SETTLING POND TREATED WATER EXITS AT ARROW**





## **CONSTRUCTION OF THE TREATMENT CELL**





**LIMESTONE BED BEING ADDED TO CELL**





**HEAVY DUTY LINER SEALS ENTIRE TREATMENT CELL**





**PIPING SYSTEM IN TREATMENT CELL**





**LIMESTONE AGGREGATE PLACEMENT IN POND**





**MORE LIMESTONE AGGREGATE!**





**SPENT MUSHROOM COMPOST INSTALLATION**





**OVERFLOW OUTLETS ALSO PROVIDE FOR LIMING AFFECT**





**TREATMENT  
CELL**



**SETTLING  
POND**



**THE COMPLETED TREATMENT SYSTEM**





**COMPLETED SETTLING POND**





**MINE DISCHARGE TUNNEL SOUTH OF LOPEZ**





**MINE DISCHARGE WITH REMINENTS OF PAST TESTING**





**LIMESTONE CHANNEL  
TO THE  
LOYALSOCK**

**C TUNNEL TREATMENT- CELLS ARE ALL UNDERGROUND**





**These treatment cells are all underground at this site**





**This limestone channel conveys all treated water to the Loyalsock**





**BRUNO DOING WHAT HE DOES BEST-- EDUCATING THE PUBLIC !**





**SHARING RECLAMATION SUCCESS WITH REP. MAJOR**





**REP. DON SHERWOOD VISITING THE TREATMENT SITES**





# **THE EFFECTS OF TREATMENT**

- **Pre-treatment water pH is : approx. 3.1-4.4**
  - **Post-treatment water pH is : 7.1-7.6**
- **Loyalsock Creek upstream/downstream: 5.3-6.2**
  - **All indications thus far show that treatment is effective and should continue to provide favorable results**
    - **Water quality monitoring is ongoing**
- **long term goal is a restored aquatic habitat in the Loyalsock.**











**TROUT GO HERE!** 

**THE GOAL OF TREATMENT!!!**



**THE**

**END**

**OPEN TO QUESTIONS**

