

**EROSION AND SEDIMENTATION CONTROL PLAN
LITTLE TOBY CREEK, KYLER HOLLOW
ABANDONED MINE DRAINAGE PROJECT
FOX TOWNSHIP, ELK COUNTY, PA**

Project Description:

This project involves the construction of a passive treatment system for improving the water quality of abandoned mine drainage, in Kyler Run. Kyler Run is a tributary to Little Toby creek, which is classified as "Cold Water Fishery" waters. The project is funded by a Growing Greener grant and federal PL-566, and sponsored by the Elk County Commissioners, Elk County Conservation District, and the Headwaters Resource Conservation and Development Council.

The major components of the project involve; constructing two SAPS, ALDS, Settling Basins, and Wetlands along with a Mine Water Collection System, several waterways, several acres of seeding, an access road with several culverts.

The existing topographic features of the project area and immediate surrounding areas are shown on drawings # 2 and 3. The disturbed area for this project is approximately 27.64 acres and is indicated as the "Construction Limit" on the drawings. No work shall be performed outside of the designated construction limit. The soils found with-in the construction area are made up mostly of low strength, highly porous mine / coal refuse. There are a few areas that contain soils made up of silty / clayey material. This silty / clayey material will be used for embankment material for the construction of the pond cells. All test pit / soils information is found on drawing #3.

The contractor shall obtain a National Pollution Discharge Elimination System (NPDES) permit, before any construction has begun.

The Erosion and Sedimentation Controls on this project will be broken down into two phases; Temporary E&S Measures and Permanent E&S Measures. All Erosion and Sedimentation Control measures shall be inspected after each storm event, any repairs shall be performed as needed.

Temporary E&S Measures:

- A) Clearing and grubbing shall be limited prior to actual need.
- B) The surface of any stock pile or storage areas shall be maintained in such a manner so as to provide positive drainage and prevent surface water from concentrating / ponding or entering Kyler Run.
- C) Control of the access and haul road shall be provided. This includes contouring, dust control, erosion Control, turnouts, road drainage, culverts, culvert outlet aprons, and a rock construction entrance. At the end of each construction day, all sediment deposited on the roadways, shall be removed and returned to the construction site. The rock construction entrance shall be dismantled and disposed of when all construction is complete.
- D) All disturbed areas left unprotected for more than 20 working days shall be mulched at a rate of 2 ton of straw or 3 ton of hay per acre. If permanent seeding is not completed on a disturbed area within an additional 20 working days, temporary seeding shall be applied at a rate of 25 lbs. of annual ryegrass per acre.

- E) Filter fabric fence shall be installed at the designated locations and lengths, as show on drawing #3. The filter fence will be installed downgrade and on the contour before any earth moving activity begins. Both ends of each fence section must be extended at least eight feet upslope at 45 degrees to the main fence alignment. Inspections of the filter fence must be performed weekly, and/or after every precipitation event. If any problem areas are discovered or the filter fence needs maintenance, construction shall stop until all problems are resolved and/or the filter fence in properly fixed or replaced. When siltation reaches 50% of the fence height, it shall be removed and disposed of. The filter fence shall remain in place until all disturbed areas have established 70% vegetative cover.

Permanent E&S Measures:

- A) Prior to construction of the treatment system, a drainage ditch shall be installed along the access Road to cut off any surface water from entering the ponds during and after construction. The drainage ditch is both vegetated and rock lined, the location of these waterways (Waterways # 12-15) are shown on drawing #3. The sizes and proper installation of the waterways are shown on drawing #20.
- B) Several culverts shall also be installed under the access road to route any collected surface water to an acceptable area. The size and proper installation of the culvert pipes crossing the access road, waterways and the main streams are shown on drawing # 21. Outlets for the culverts are to be grouted rock, to eliminate any scouring.
- C) Prior to construction of the treatment system, a diversion and rock waterway shall be installed to eliminate any surface water from entering the disturbed areas or the completed treatment system. The diversion shall be the same dimensions as Waterway #11. The sizes and proper installation of the waterways are shown on drawing # 20.
- D) To divert any surface water collected between the diversion and the treatment ponds or the access road and the treatment ponds, the berms on SAPS #2, Settling basin #2, ALD #1, and Settling basin # 1 shall be graded and installed as shown on drawings # 4 and 22.
- E) All disturbed areas, including spoil areas, will be permanently limed, fertilized, seeded, and mulched after completion of earth moving activities. It is recommended that any area where all earth moving activities are complete, permanent vegetative cover shall be established as soon as possible. All disturbed areas, other than the treatment ponds, shall be graded to provide positive drainage away from the treatment cells.
- F) Erosion control blankets shall be installed in all vegetated waterways, including the diversion and the graded berms of the pond cells. This shall be installed after all seeding requirements, except mulching, are met. This will protect the waterways from substantial erosion before a permanent vegetative cover is established.
- G) Any waterways that outlet over steep slopes will be grouted rock. This will protect the waterways from erosion during substantial storm events.

Specifications for all the work items mentioned above, are provided in the bid package.

Staging:

All earthwork activities shall be staged and completed, as to eliminate large amounts of disturbed area exposed at any given time. The recommended approach to staging, is to fully construct the treatment system / pond cells one at a time, including planting the required vegetative cover on the embankments of each pond cell before starting any earth moving activities related to the next cell.

A suggested staging sequence is as follows:

- Clear and grub only those areas needed for the construction of each treatment system needed to be worked on during that time period.
- Install filter fabric fence in the designated areas.
- Construct access road drainage (Waterways 12-15) and install culverts needed for crossing the access road, streams, and waterways. Permanent seed all disturbed areas along the access road.
- Construct diversion and waterway #11.
- Seed all vegetative waterways and diversion.
- Grade all disturbed areas for positive drainage away from the construction areas and directed toward a suitable area.
- Provide temporary and permanent seeding, within the given time period, when a disturbed area is completed.

