

SMARTDITCH PROVIDES EFFECTIVE STORMWATER RUN-OFF PROTECTION FOR MINE ENTRANCE.

THE TWENTYMILE MINE IN ROUTT COUNTY, COLORADO IS ONE OF THE LARGEST UNDERGROUND MINES IN THE UNITED STATES. THE SAGECREEK PORTAL IS A NEW EXTENSION TO THE MINE THAT PROVIDES ACCESS TO AN ADDITIONAL 105 MILLION TONS OF COAL.

Problem

The rough terrain, which consisted of steep slopes with rocky soils and minimal ground cover, made the mine site area susceptible to flash flooding. Peabody Energy was looking for a cost effective, reliable drainage solution to divert the stormwater run-off away from the mine entrance.



A steep slope opposite the Twentymile Mine entrance present runoff problems. SmartDitch, shown here running parallel to the mine openings, eliminated the problem.

Solution

Nilex, in partnership with its distributor Wagner Rents, recommended the SmartDitch system, a lightweight, plastic ditch liner that is virtually maintenance free and easy to install on difficult terrain such as steep, rocky slopes with limited vehicular access. Costing considerably less than rock or a concrete lined channel, SmartDitch will not degrade with exposure to sunlight or chemicals normally found in soil. Once installed, the system is completely sealed and will not allow seepage to erode the soil beneath it, increasing the stability of the channel system.

Installation: The project involved the installation of two, roughly parallel, 1,500 foot SmartDitch channels facing the entrance to the underground mine. SmartDitch requires minimal ground preparation to achieve the rough shape of the preformed sections and was laid into the excavated channels and secured to the ground with earth anchors. Each section was secured together with self tapping screws while foam rubber strips were used to seal overlapping sections to form one cohesive, water tight channel. The system comes complete with all of the installation hardware. Due to the SmartDitch system's ease of installation, lightweight channels and minimal excavation requirements, a crew of only three was able to meet the project deadline. Nilex provided on-site installation support.



Rocky terrain around the mine did not effect the installation. SmartDitch is secured into the surrounding soil with special earth anchors.

Results: Shortly after the installation was completed, the

area experienced a heavy rainfall, with nearly five inches (13 cm) of rain over the course of a few hours. The SmartDitch system performed with no failures and had no significant accumulation of sediment within the channels. The SmartDitch system provided the client with a rapid, reliable and cost effective solution for stormwater run-off.

Quick Facts

- ◆ **PROJECT:** Twentymile Mine, Routt County, CO
- ◆ **OWNER/CONSULTANT:** Peabody Energy
- ◆ **PROBLEM:** Stormwater runoff creating problems at mine entrance
- ◆ **SOLUTION:** Two parallel 1,500 LF 12" SmartDitch channels
- ◆ **CONTRACTOR:** Bower Brothers
- ◆ **DESIGN ENGINEER:** SmartDitch Civil Engineer, Mark Maederer, P.E.
- ◆ **DISTRIBUTOR:** Nilex Civil Environmental Group - Denver, CO



Parallel SmartDitch channels were installed to capture and carry stormwater away from the Twentymile Mine's main entrance.

SmartDitch is manufactured in the USA. It is a safe, economical, long-lasting, and environmentally sound irrigation channel lining solution. For more information on the SmartDitch and the MegaDitch HDPE Channel Lining Systems contact:



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