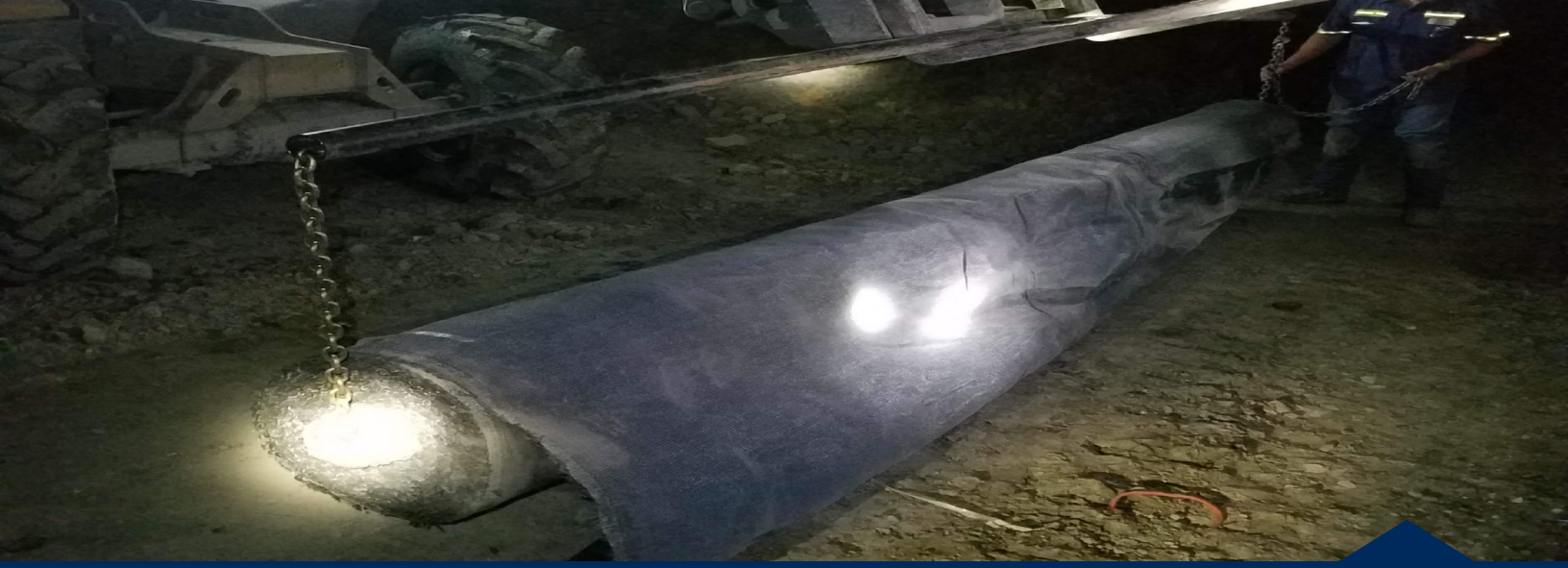
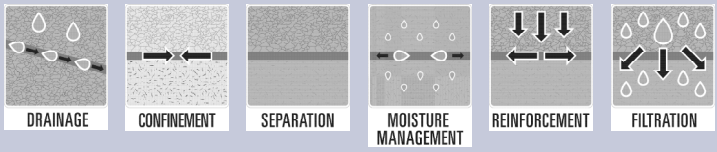


Attack the Threat

CASE STUDY **Saturated Soils** in **Elko, Nevada Mine**

PRODUCT Mirafi® H_2Ri
APPLICATION Tunnel Access Stabilization
LOCATION Elko, NV



THE CHALLENGE

Restore safety for traveling vehicles sinking in soft soils in mine tunnels

A mine site in Elko, NV was experiencing trouble with operating equipment, specifically the tunnels spread throughout the project site. The tunnel floors were susceptible to trapping moisture, creating saturated soil which was a problematic for the mine workers and maintenance crews. It was a regular occurrence for the mine vehicles to end up stuck in the tunnels from sinking saturated areas.

JOB OWNER Confidential
ENGINEER Nilex & TenCate Geosynthetics
CONTRACTOR Confidential
DATE OF INSTALLATION August 2018

TENCATE GEOSYNTHETICS

THE DESIGN

The project team had countless conquests to ultimately provide a fix in the tunnel areas. Low overhead and a constricted workspace posed an additional challenge. They tried to push large boulders which disappeared into the ground. Chemical and lime stabilization techniques were unsuccessfully deployed. During each execution, the presence of water in the tunnels was continuously noted as the primary driver to the unfavorable performance of the access roads. A TenCate Geosynthetics representative was contacted to discuss a long-term defense against the saturated soils. The moisture management, reinforcement and separation functions of Mirafi® H_2Ri were the perfect combination to remedy the problematic tunnel sections. Mirafi® H_2Ri was ultimately selected and a test section in one mine tunnel was installed in August 2018.

THE CONSTRUCTION

Mirafi® H_2Ri was placed over the existing soils and expelled into drainage channels on either side of the mine tunnel. The 17 ft. wide roll was a perfect width to cover the roadway and no overlaps were required. Pit run gravel was placed over the H_2Ri . As soon as the gravel was placed, the project team witnessed squeezing of the moisture out of the subgrade soils and into the drainage zones. Consolidation of the soils was occurring before their eyes. With more placement of gravel, the section firmed up and provided a stable base for mine equipment trafficking. Light compaction was achieved through trafficking vehicles over the placed gravel.

THE PERFORMANCE

Following the test tunnel demonstration, several other problematic tunnels were remediated with the Mirafi® H_2Ri, and the moisture management system is also being deployed in new tunnel construction. The H_2Ri provided a solution that granular gravel on its own, chemical stabilization and lime stabilization previously did not conquer. One year following installation, the tunnel sections with Mirafi® H_2Ri were reported to be functioning as intended. Now, the mine owner spends less resources on short term fixes for these problematic areas and had provided the mine team with increased safety during daily operation of the equipment through the mine tunnels.

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