



DRAINTUBE®



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Manitoba Mine, MB, Canada

Tailings final cover

CONTEXT

At the beginning of the 20th century, the mining industry was less sensitive to environmental issues. Operations were poorly regulated and when deposits were depleted or the mine went bankrupt due to falling ore prices, the site was abandoned, and tailings ponds were left open.

ISSUES

As part of the Orphaned & Abandoned Mines Sites Program, the Central Manitoba Mine (CMM) site, located in Nopiming National Park (220 km northeast of Winnipeg) was restored. A final cover including a rainwater drainage layer has been constructed.

The mine was in operation between 1927 and 1937 and generated 5 tons of gold from 480,000 tons of ore. The tailings, containing cyanide, have been left uncovered since that time. The waste rock was a generator of acid and metal leachates in the surrounding environment when exposed to oxygen. In addition, snow and rain cycles in the area caused erosion issues along Highway 304.

Since granular material were almost impossible to find on site, the geosynthetic solution was chosen for the construction of the rainwater drainage layer of the final cover.

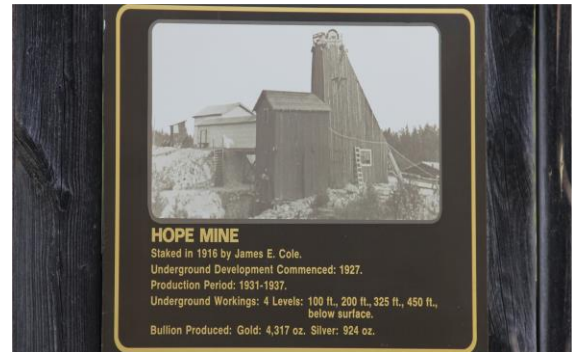
RETAINED DESIGN

To limit air intrusion in the tailing deposits (oxidation limitation) while maximizing the drainage of runoff water (erosion limitation), the engineering firm AMEC chose DRAINTUBE 400P FT1 D25 drainage geocomposite. It is composed of a 300 g/m² (9 Oz/sy) protective geotextile, a geotextile filter and 25 mm (1 in.) diameter perforated mini-pipes regularly spaced on 1 m (40 in.) centers. DRAINTUBE® offers a high and stable over time in-situ drainage capacity.

Covered with a backfill layer, DRAINTUBE® collects and evacuates rainfall water and limits oxygen infiltration. It was installed in winter, under temperatures of -25°C (-15°F) to allow machinery traffic on the low bearing capacity residues.

ADVANTAGES

- Reduction of 99% of the expected truck traffic on site compared to gravel installation
- Reduction of the environmental footprint (more than 60% reduction of the GHG)
- Installation under very low temperatures: -25°C (-15°F)
- Fast installation to keep short deadlines
- Very good Health & Safety records for the installation crew on site
- Consistent quality controls – 100% conformity



Hope Mine – Operations started in 1916 by James E. Coke.



Mine tailings in contact with air subject to strong erosion and generation of leachates that are toxic to the population.



Installation of DRAINTUBE 400P FT1 D25 in winter. Low bearing capacity residues show better resistance when frozen at -25°C (-15°F).

PROJECT SUMMARY

Products	DRAINTUBE 400P FT1 D25		
Quantity	255,000 m² (2,400,000 sqft)	Design	AMEC
Application	Final cover drainage	Installation	Western Tank and Linings
Owner	Central Manitoba Mine	Years	2012-2013



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AFITEX-TEXEL GEOSYNTHETICS ADDED VALUE

The expertise of the AFITEX-Textel team provided the designers with all the necessary information and technical support to choose the most suitable solution based on the project's parameters.

« What AFITEX-TEXEL has to offer »

AFITEX-Textel will be pleased to assist you in the evaluation and design of your next projects, because our approach has always been and always will be the same: the right product, in the right place, well installed with rigorous quality control.

In case you need technical support? Feel free to refer to the AFITEX-Textel team. Expert services will be provided free of charge:

- Technical Assistance
- Assistance during Design
- Technical Training
- Technical Documentation
- Calculation Tools
- Specification & Tender documents
- Installation Guidelines



Mine Hope crossed by the highway 304, before restoration – Manitoba - 2012



YOU NEED MORE INFO?

Never hesitate to contact one of our specialists in order to know more about the benefits you can get from your projects

1-800-463-0088

Available documentation

- Technical data sheets
- Installation guidelines
- Standards & Studies
- List of projects
- Design Software

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