

TITAN 10 TITAN TIMES

2016 YEAR IN REVIEW

10 YEARS AND GROWING STRONG!

Catch a glimpse of what we were up to during our 10th anniversary.



TITAN TIMES

2016 YEAR IN REVIEW



MESSAGE FROM THE OWNERS

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It's truly unbelievable how quickly time flies....

It seems like just yesterday we were three guys that set off to start our own liner company working out of a garage, with less than a handful of staff, and doing mostly agricultural lining projects for feedlots and hog, poultry and dairy farms in Manitoba. We've since grown leaps and bounds and although the agricultural market is still an important part of our business we've been able to successfully expand our expertise and diversify our products and services to cater to a number of other markets including road construction; municipal water and waste management; mining; oil and gas; and hydro-electric.

Building our business from the ground up, with a constant focus on client relationships, we are proud of what we have accomplished these last 10 years. Our once 5-man shop has evolved into five locations across the country with more than 100 employees

becoming one of the fastest growing companies in our field. We supply and install a vast quantity of materials from geosynthetics to secondary containment, storage tanks, drainage products as well as erosion and sediment control products for a wide variety of civil and environmental infrastructure projects. We continue to grow and our track record for delivering quality products, service and workmanship remains strong.

As we reflect on reaching our 10th anniversary we want to take this opportunity to thank all those that have contributed to the growth that we have experienced so far—our families; our dedicated staff; and most importantly you, our customers, have all helped shaped the Titan that we know today. We appreciate your support and loyalty, and look forward to the next 10 years!

TRUST. QUALITY. VALUE

Brett Burkard, CEO

Kelly Sitarz, President

Ron Skrobotan, Vice-President



L to R: Kelly Sitarz; Brett Burkard, Ron Skrobotan

PROJECT HIGHLIGHTS



01

Teranap BGM Chosen for B.C. Highway Drainage Ditch Project

This spring highway 97C near Penticton, British Columbia received major drainage improvements using our Teranap Bituminous Geomembrane (BGM) in a ditch lining application. A total of 34,200 m² of Teranap 431 and 15,860 m² of Teranap 531 Bituminous Geomembrane (BGM) were installed in a stretch of ditch spanning nearly 2.0 km along the highway to divert precipitation run-off and keep it from flowing to a nearby site with contaminated soil. This specialty material was chosen for its superior waterproofing qualities, puncture resistance and ability to withstand the elements. While offering competitive pricing Titan also worked with the general contractors to provide product installation training, support and expertise.

02

Continuing Tunnel Work in Calgary

Building on our previous tunnel lining experience we are pleased to have been awarded concrete tunnel capping work in Calgary this past year. This included a 2.7 km concrete sanitary truck tunnel made of precast concrete pipe lined with high-density polyethylene (HDPE) geomembrane. The project involved sealing each concrete pipe joint with welded HDPE geomembrane to prevent sewer off-gassing from eroding the concrete and subsequently leaking into the earth. There were a total of 1,300 pipe joints to seal.



03

Major Mine Chooses TE-BXC Geogrid for Haul Roads In Northern Ontario

A major mining company has chosen to use our TE-BXC 40 geogrid in the construction of haul roads at their northern Ontario site. Being built on compacted clay with blast rock/granite, these haul roads are essentially fingers that extend into a mine pit providing passage for numerous 240 tonne rock trucks to dump ore.

Titan provided a pre-design using TE-BXC40 geogrid as the reinforcement layer for the haul roads/fingers. Not only is this geogrid reinforcing the road structure but it is also preventing the rock from migrating into the clay and weakening the road. Additionally it is providing significant cost savings by allowing them to use less subgrade rock than originally planned (0.7 m vs 1.0 m). The project began in August 2016 and is expect to be ongoing for a few years.

04

Cable Concrete Hits Brandon

Relatively new product in our Erosion & Sediment Control product line, Cable Concrete (CC), an advanced articulate concrete block system for erosion protection, was selected for two projects in Brandon, Manitoba requiring superior erosion control solutions. The first was for a Manitoba Infrastructure and Transportation (MIT) overtopping erosion protection test section along PTH 1A – 1st Street, on the northeast side of the new PTH 1A CPR bridge over the Assiniboine River. The river banks commonly overflow during spring flooding

pushing water over 1st Street eroding the northeast ditch. Working with the General Contractor, PCL Construction; and the earthworks subcontractor, Tri-Wave Construction, a total of 2,000 m² of GC2 mats were installed with a 5-person crew and an excavator supplied and operated by the subcontractor.

The second project featuring Cable Concrete will be at the site of the Brandon Discovery Centre. Installation is slated for the spring 2017.





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Mine Slime Pond Lining in Saskatchewan

Experienced in slime pond lining, this summer we were happy to be awarded another slime pond project for the mine at Cigar Lake, Saskatchewan. The 40,500 m² or 435,000 sq. ft. pond was lined with a 4-layer geosynthetic system that included 12 oz. non-woven geotextile, 80 mil smooth geomembrane, geonet and 80 mil single-sided textured geomembrane. We are happy to report that we successfully completed the project within the projected timeframe amidst strict site requirements and less than ideal weather conditions.



06

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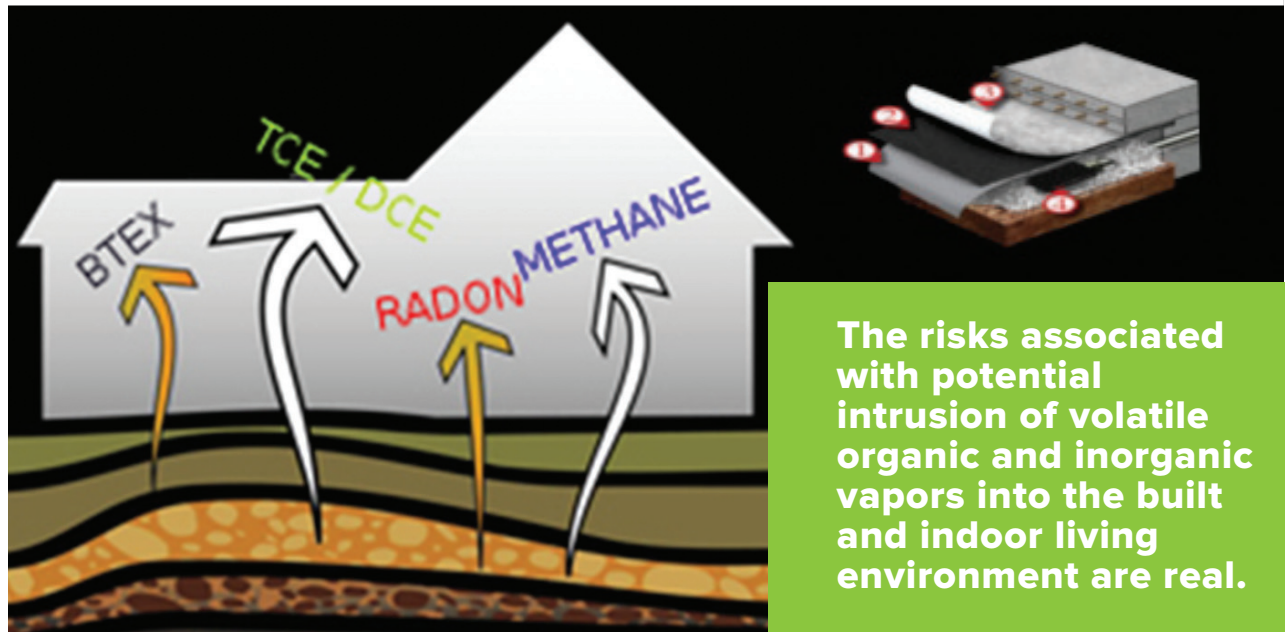
Exceeding Expectations at Atlantic Canada's First Nicklaus Design Golf Course

Forest Lakes Country Club, 35 minutes from Halifax, will soon be offering the first Nicklaus Design golf course in Atlantic Canada. The course was thoughtfully planned to enhance the stunning environment, provide some challenging play, and above all ensure enjoyment for players of all skill levels. Titan had previously worked for the Nicklaus Design Team on a golf course pond lining project in the Caribbean and because of our attention to detail and quality workmanship we were chosen to work on this a high profile project. We sent in an experienced installation crew that successfully installed the HDPE geomembrane on a number of ponds and completed the work ahead of schedule making the owner very happy.



**thoughtfully planned to
enhance the stunning
environment**

INTRODUCING SPECIALTY VAPOUR BARRIER APPLICATIONS



The risks associated with potential intrusion of volatile organic and inorganic vapors into the built and indoor living environment are real.

This summer, Steve Weiterman joined the Titan team as Project Manager for Specialty Applications. In addition to managing ongoing work at our sites in the United States, Steve has also been developing new and innovative solutions for our clients in concrete corrosion protection and volatile gas vapor intrusion. Steve has 16 years of experience in the geosynthetic and gas vapour intrusion markets in both the United States and Canada as well as experience in the assessment, design and implementation of site-specific environmental risk mitigation measures.

The risks associated with potential intrusion of volatile organic and inorganic vapors into the built and indoor living environment are real. In addition to natural gases and vapors, the EPA estimates that there are more than 450,000 Brownfield sites in the U.S. and cleaning up and reinvesting in these properties is a growing concern. If you are currently working on a mitigation plan for your current or upcoming land development project and containment of liquids or mitigation of potential vapor intrusion is required, we can help! Contact Steve at sweiterman@titanenviro.com

YOUR PROUD WESTERN CANADA DEALER

FOR TARSCO BOLTED TANKS



Titan is proud to have partnered with Tarsco Bolted Tank as the official Western Canada dealer for Tarsco Bolted Tanks. With competitively priced high-quality products Titan offers full-service tank supply and installation focusing on liquid and dry bulk storage geared to the municipal, mining, energy, industrial and agricultural infrastructure markets. Manufactured in state-of-the art facilities Tarsco flat panel bolted tanks offer outstanding performance and reliability. Together, Tarsco and Titan's team of experts work with you to provide storage solutions that are custom engineered to your specific requirements. For more information visit www.titanenviro.ca

- **QUALITY DESIGNS & COATINGS**
- **EXPERT CONSULTATION**
- **PROFESSIONAL INSTALLATION**
- **COMPETITIVE PRICING**

SAM'S GEOGRID CORNER

07

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NEW GENERATION Fiberglass Geogrid System

This spring, we launched our NEW GENERATION TE-FGP fiberglass and TE-FGC fiberglass composite geogrid systems while successfully accomplishing a number of pavement rehabilitation projects with City of Calgary and the City of Winnipeg. Featuring an engineered polymer coating these advanced geogrids can endure higher temperatures, remaining stable up to 900 ° F, and have very low shrinkage and ultimate elongation properties to create a ridged asphalt layer. TE-FGC incorporates a non-woven geotextile layer providing additional waterproofing while TE-FGP's unique self-adhesive ensures stronger surface bonding and eliminates the need for a tack coat.



The advantages of Titan's NEW GENERATION fiberglass geogrids over competing product include reduced asphalt thickness and milling depth, easier and faster installation, and time savings. Expected long-term benefits also include prolonged pavement life and reduced maintenance costs.

08

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Geogrid Innovation for Mining Applications

Taking innovation to the next level, this year, Titan established a successful alliance with Applied Research of Australia (AROA); an Australian-owned company working in research, development and commercialisation of Fibre Reinforced Polymer (FRP) composite technology. Working closely together we developed and introduced two new polymer geogrids, TE-MXR PP and high-strength TE-MXR PET, designed as non-steel solutions specifically for soft and hard rock mining applications.

TE-MXR20PP geogrid is currently being used for rib support along with a fiber reinforced polymer rib dowel produced by AROA, while TE-MXR PET geogrid features a fire resistant and anti-static coating (FRAS) and is being used for roof control and long wall shield recovery. Both

are seeing much success in major Australian coal mines. In comparison to conventional steel and metal meshes solutions these innovative geogrids have helped decrease material weight, increased productivity, reduced operating costs, and helped speed up mine development work. We will continue to work with AROA on other R & D pursuits related to mining applications.



09

Advanced Geogrid Technology For Concrete Reinforcement

With technological advancements at the forefront of competitive business we are thrilled to have collaborated with Carleton University in Ottawa on the development of some innovative products for concrete reinforcement applications. The first is a one-of-a-kind structural concrete geogrid, the SCR100, made from high-modulus fiberglass with an engineered durable polymeric coating. An alternative to conventional steel reinforcement this new geogrid is a durable and designed for success in aggressive and non-aggressive environments including bridge beams, sea walls, buildings, sewer linings and other concrete structures.

In addition to the SCR100 geogrid, we have also developed a large aperture polymer based geogrid for concrete surface reinforcement called the CRMD200/300. The principal function of this type of polymer geogrid in concrete is to distribute stresses and control cracking in exposed concrete surfaces.

We are currently in the R&D in-situ testing phases with these products and look forward to reviewing the results.



10

Lecture Series Wrap-Up

This spring and fall Titan delivered a series of lectures to various government agencies and engineering firms, across the country, focusing on the benefits of using correct geosynthetic materials and installation techniques for pavement enhancement. The lectures were very well received and we look forward to continuing to offer these in the future.



GIVING BACK THROUGH R&D

We are pleased to offer continued support to the engineering community by working with post-secondary academia on research and development initiatives. The following are highlights of what Titan accomplished this year in conjunction with our Academic partners:

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NEW Research Grant (Concordia University)

As the industry partner to Concordia University (Concordia), we are thrilled to announce that Concordia University and Titan have been awarded a prestigious 2-year Collaborative Research Grant by the Natural Sciences and Engineering Research Council of Canada (NSERC), Canada's federal funding agency for university-based research. Investing over \$1 billion each year in natural sciences and engineering research in Canada NSERC enables researcher-industry partnerships and collaborations while connecting industry with innovations and discoveries.

Together, Titan and Concordia will work on technologies for the treatment of surface water for the removal of nutrients such as phosphorus; cyanobacteria; algae and other components that cause undesirable characteristics such as colour odour, with the long-term objective of developing a system for the restoration, management and control of water quality in situ.

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Technical Paper

In partnership with Concordia University we published a technical paper entitled:

'USE OF NONWOVEN GEOTEXTILES FOR REMOVING NUTRIENTS AND SUSPENDED SOLIDS FROM A EUTROPHIC LAKE'

This paper was presented at the CSCE Resilient Infrastructure Conference in London, Ontario this past June and can be viewed on our website under 'Resources'.

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Research Projects (Queen's University)

This October we completed a research project in collaboration with the Department of Civil Engineering at Queen's University in Kingston, Ontario. The research was made possible through NSERC's Engage Grant and focused on the effect of geomembrane welding parameters on cold-climate welding. The objective was to examine the interaction between welding speed and temperature through the rapid cooling of dual wedge thermal welds conducted under cold (-30°C) conditions and to: a) investigate how this affects the geomembrane in what is called the heat affected zone beside the weld; and b) identify if there was rapid stress cracking of the welds (within weeks). The full report can be viewed at www.titanenviro.ca

We are also pleased to announce that we have just begun another research project with Queen's University on Teranap Bituminous Geomembranes. Stay tuned!

LOOK FOR US HERE IN EARLY 2017!

Geotechnical Frontiers—Orlando, Florida
(March 12-14) Booth # 113

SARM Annual Convention—Saskatoon, SK
(March 13-16)

MTCML Tradeshow—Brandon, MB
(April 12)



SEASON'S GREETINGS

We will be closed for the Holidays starting at noon on Friday, December 23 and re-opening on Monday, January 2, 2017.

