OIL AND GAS HAUL ROAD
GEO PRODUCTS, LLC | ENVIROGRID® GEOCELL

Background

Gazprom, the largest oil and gas exploration company in Russia, was in need of a solution for constructing a haul road. The site conditions consisted of extremely cold temperatures in the winter and soft soils and marshy, impassible areas in the spring and summer.

Challenges of road construction over soft soils (peat bogs, sand and silt) and marsh land. Typical construction is done with expensive aggregate and concrete slabs that last in most cases only one season. The need for stable roads that can withstand the spring thaw and last for several years was imperative. The ability to use locally available aggregate would not only be convenient and efficient, but cost effective as well.

Technical Information

MATERIALS USED:
EnviroGrid® EGA30 6” (150mm)
Non-woven geotextile
Design Solution

The EnviroGrid® Geocell was chosen as the best option for the haul road, as it provided a cost-effective and sustainable solution for Gazprom. The ability to withstand multiple passes of heavy equipment was able to be achieved by the use of geocell. Due to the effect on the structural coefficient of sand, EnviroGrid® not only allowed for the use of locally available sands, but also increased the structural number of the sand through its confinement abilities, which in turn, cut down on the amount of aggregate needed. See table to the right:

Construction Overview

The roads were graded and compacted as teh EnviroGrid® panels were installed over a non-woven geotextile. The EnviroGrid® cells were then filled with locally available sand and the compacted. A separation fabric was installed over the filled cells and a 7.5cm layer of sandy soil was used as the rolling course on the top and final layer.

Results

The roads constructed with EnviroGrid® provide year-round stability, especially during the spring thaw that once made road areas impassible. The performance was approved as a construction material by Gazprom, and minimal maintenance was required moving forward.