



# CASE STUDY

## Oil & Gas Drilling Pad Soil Reinforcement- BaseLok™ GeoCell

**LOCATION:** Western Canada

**PROJECT TYPE:** Product Supply

**PRODUCT USED:** Baselok™ GeoCell



### ▼ CHALLENGE:

An oil and gas client in Western Alberta specializing in shale gas extraction needed a highly durable and cost-effective drilling pad. This pad was crucial for supporting their extensive drilling platforms and heavy equipment operations, ensuring efficiency and reliability in their extraction processes.

### ▼ CONVENTIONAL VS TITAN SOLUTION:

Hydraulic fracturing necessitates horizontal drilling to access and extract shale gas reserves from rock formations beneath the soil. These remote sites require heavy vehicle traffic year-round, demanding soil reinforcement to support the load of heavy equipment.

Typically, rig mats are the conventional solution for bearing substantial loads in oil rigging. These mats have steel frames and provide additional support for cranes and heavy equipment. However, rig mats are often expensive.

Another common solution is importing coarse aggregate to improve base stabilization. Depending on the gravel pit's proximity to the site, this method can also be costly.







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## Oil & Gas Drilling Pad - BaseLok™ GeoCell

### CONVENTIONAL VS TITAN SOLUTION CONT'D:

Given the site location and the native silty clay soils, reinforcing with BaseLok™ GeoCell was the optimal solution.

BaseLok™ geocell is a flexible three-dimensional cellular structure featuring an open and porous design that confines soil or aggregate material of choice.

This approach is both cost-effective and robust, with our GeoCell panels measuring 5.4 meters in width—a significant advantage. The broader panels allow for more deployment coverage, saving installation time.



© BaseLok™ GeoCell

### ACHIEVEMENT

During installation, these three-dimensional BaseLok™ GeoCell structures expanded to form flexible walls with interconnected strips. This design reinforced tensile strength and prevented movement, even under compression, from environmental factors like weathering.

A 4" (100 mm) GeoCell can increase the structural coefficient of native sandy soil to approximately 0.35. Without the use of BaseLok™ GeoCell, an equivalent structure would require about 20" (500 mm) of soil.

Compared to conventional 2.56 m panels, the 4" BaseLok™ GeoCell panels, each 5.44 m wide, increased productivity by 40%. Titan supplied 480 GeoCell panels, each measuring 5.44 m x 8.35 m for a total 21,800 m<sup>2</sup> area. Responding promptly to the client's needs, Titan delivered the materials on schedule, meeting the typical urgency in the oil and gas sector.

The BaseLok™ GeoCell system provided the client with a superior drilling pad solution, combining durability, cost-efficiency, and expedited installation to meet the demanding requirements of shale gas extraction operations.

