



# STABILIZATION PROVIDES THE SUBGRADE SOLUTION

*Eighty Four, PA*

## **NEW FTS FACILITY REQUIRES STABLE SUBGRADE FOR HEAVY LOADS**

### **New Facility for a Strong Supplier**

FTS, formerly known as FracTech Services, recently cut the ribbon on its new 50,000 square-foot facility in North Strabane Township, Washington County, PA, to supply natural gas drilling companies in the Marcellus and Utica shale formations with its sand products for hydraulic fracturing of wells. FTS now has hundreds of employees working out of the new facility, located on a 26-acre site along PA SR 519. The complex includes offices, a maintenance shop, warehouses, laboratories, a rail off-loading facility and a truck wash. The complex was built by Nello Construction Co., Inc of nearby Houston, PA, who, in turn, contracted with Mt. Carmel Stabilization Group, Inc. (MTCSG) to perform critical Soil Stabilization work necessary to keep the project on-time and on-budget.



### **Stable Subgrade Needed FAST**

Following commencement of the construction process, Mt. Carmel was contacted by representatives of Nello Construction Co., Inc. to meet and discuss the potential to chemically stabilize portions of the FTS site in order to produce a subgrade material suitable for asphalt pavement. As portrayed in the project Geo-Technical/Soils report, these areas were comprised primarily of alluvial soils consisting of very moist-to-wet silty clay with fine sand. All pavements were designed using a CBR (California Bearing Ratio) value of 5, and were to be placed on material suitable of supporting a minimum 6 inches of granular



Mt. Carmel Stabilization Group utilized a Wirtgen WR 2400 for work on this project. With 25 similar Wirtgen mixers in it's fleet, Mt. Carmel can tailor production to meet any project demand.

subbase material similar to PennDOT 2A course aggregate. MTCSG recommended that representative samples be taken and a mix design performed by an independent materials testing laboratory in order to determine the most compatible chemical additive and application rate. However, the project schedule, impacted by adverse climatic conditions, precluded the timeframe normally associated with such testing. Absent any formal mix design, Mt. Carmel Stabilization Group, after weighing all relevant factors including pavement, soil type and classifications, existing moisture content, optimum moisture content, project specifications and the proposed new asphalt pavement, proposed stabilizing the existing subgrade material to a depth of 12 inches with a 6% application rate of Portland cement.

In this case, the Portland cement acted as both a drying agent to reduce the moisture content of the existing subgrade and, most importantly, strengthened the subgrade to the point that it would have the necessary durability and stiffness to handle the heavy loads anticipated with such a rail and truck delivery hub. This first phase was completed, with a second phase of stabilization in another area of the project to be done at a later date.



With high moisture contents throughout the site, severe rutting was common prior to cement stabilization.

### **Changing Design to Accomodate Conditions**

Significant rainfall occurred after the first phase of stabilization and prior to Phase II. In order to address any potential concerns in the proposed Phase II areas relevant to excessive moistures, unsuitable soils and anticipated increased loadings (this area included the site rail-off loading areas), it was agreed that Mt. Carmel would perform Phase II Soil Stabilization to a depth of 16 inches, instead of 12", as in Phase I.

### **Another Project Success**

Both phases of the Soil Stabilization on the project, including all grading and compaction associated with the stabilization process, were completed successfully by Mt. Carmel Stabilization Group. This allowed for Nello Construction Co., Inc. to eventually bring the building program in "on-budget" and "on-time". Developers, owners and contractors typically rely on Mt. Carmel Stabilization Group to determine the right Soil Stabilization strategy for their project. With over 65 years of experience, Mt. Carmel has the knowledge, experience and equipment to get your project back on track.

