



HURRICANE NO MATCH FOR STABILIZATION

Scio, OH; Harrison County

**COMBINATION OF LIME DRYING AND CEMENT STABILIZATION IS THE
PERFECT SOLUTION FOR NEW FRACTIONATION FACILITY**

A Major Processing Facility

Chesapeake Energy has partnered with M3 Midstream and EV Energy Partners to build a state-of-the-art natural gas-gathering and compression facility in Scio, Harrison County, OH. The complex will provide necessary infrastructure to process natural gas and natural gas liquids (NGL) in the Utica Shale play in eastern Ohio. The facility will have a capacity to store 870,000 gallon-barrels and process 90,000 barrels a day, as well as a substantial rail-loading facility. The E.S Wagner Company (Oregon, OH.) was selected as the site contractor on this historic project, and Wagner subsequently selected Mt. Carmel Stabilization Group, Inc. (MTCESG) to perform the required site soil stabilization work.



In natural gas processing, the “dry” methane part of the gas stream is separated from the “wet” portions (i.e. - ethane, butane, propane and pentane). The concept of fractionation works based on the different boiling points of the different hydrocarbons in the natural gas stream. Essentially, fractionation occurs in stages consisting of the boiling off of hydrocarbons one by one. These separated gas products are then ready for use.



High production of lime drying and cement stabilization was easily achieved with multiple spreaders and mixers from Mt. Carmel's vast equipment fleet.

The Harrison Hub

The 100-acre facility, now known as the “Harrison Hub”, is located on Crimm Road (Ohio 151 and North Township 223) on the former location of the old Crimm farm and Reese property, just outside of Scio, Ohio. According to the original project Geotechnical Report, the on-site soil consisted primarily of Brown Silty Sand w/ Gravel (SM), with the Optimum Moisture Content (OMC) averaging 13.2%. Further laboratory analysis by PSI representatives determined that Soil Stabilization to a 12-inch depth utilizing a 6% Type I Portland Cement application

rate would both ensure acceptable sub-grade compressive strengths compatible with anticipated loadings and combat potential freeze-thaw conditions prevalent in late-season site construction.

Following E.S. Wagner’s preliminary site excavation and grading and prior to Cement Stabilization, the project was greeted with an ominous visit by mother nature in the form of Hurricane Sandy. The resultant rainfall totals pushed the construction schedule back one week, and raised the moisture content of the existing sub-grade material up to between 30%-40%. Such moisture levels would have compromised the effectiveness of the proposed 6% Cement Stabilization, and with time of the essence due to impending inclement winter weather, Mt. Carmel proposed an alternate plan to get the project back on track.



Lime Drying to Solve Moisture Problems

Mt. Carmel suggested the utilization of Lime Kiln Dust (LKD) to lime dry the saturated soils, as a possible solution to the moisture problem threatening the project schedule. A test area utilizing 4% LKD proved highly successful, bringing existing moisture levels down to an acceptable 9%-18%. This, in turn, allowed for optimum results from the original 6% Portland Cement Stabilization. Following the success in the test area, it was determined that the entire site would be treated with LKD prior to Cement Stabilization. Beside the ability to put the project back on schedule, several additional side-benefits resulted from the use of LKD: 1) areas treated with LKD the day prior would not freeze overnight, allowing for scheduled Cement Stabilization the next day; 2) all areas treated with LKD were successfully treated with Portland Cement by the end of each week, eliminating the possibility of freezing over the ensuing weekend; and 3) storage areas not originally slated for Cement Stabilization or Hot-Mix Asphalt Overlay (HMA) were successfully treated with LKD prior, allowing for uncompromised stone application.

Harrison County is Poised for Growth in The Utica Shale Play

Harrison County had long been dependent on coal mining to support its economy, but as many of the mines closed, officials were looking for something to replace coal. With the county’s coal mines requiring strong rail bridges to haul away coal, significant needed infrastructure was already in place. The neighboring 11.6 mile rail corridor between Bowerston and Jewett, shared by the Wheeling & Lake Erie Railroad and the Ohio-Central Railroad, is a crossroads where rail routes from north, south, east and west come together to form a veritable “interstate of railroads”. With a projected 12,000 wells forecasted to be drilled in a 10 county-area of eastern Ohio, Harrison County stands close to the epicenter. Construction of facilities such as the “Harrison Hub” will bring in needed tax dollars for the county, municipalities, townships and schools, which, in turn, will likely be spent to further renovate local infrastructure. The scope of this project will provide an economic boost for companies and residents throughout Ohio as well as hundreds of high-quality, well-paying new jobs for Ohioans, and serves as a critically important link in the value chain for the rapidly-developing Utica Shale play.

