



### Green Cement in North Texas

Various municipalities in North Texas have passed resolutions that require suppliers of cement and concrete to meet a green standard. The standard is directly related to the emissions of nitrogen oxides (NO<sub>x</sub>) per ton of clinker produced from cement manufacturers.

The level specified is 1.7 pounds of NO<sub>x</sub> per ton of clinker produced, which was set forth in the region's 8-hour State Implementation Plan. This plan is being implemented to address the region's ozone levels.

### Environmental Performance

TXI's Kiln #5 in Midlothian, a dry process kiln, is one of the most efficient kilns operating today. In fact, it has one of the lowest NO<sub>x</sub> emissions per ton of clinker in the U.S. Some examples of TXI's projects to enhance its efficiency include:

#### Manufacturing -

TXI has continually utilized innovative technologies to improve productivity as well as energy efficiency. TXI's patented CemStar<sup>SM</sup> process is an example of this effort resulting in lower emissions of NO<sub>x</sub> and CO<sub>2</sub> per ton of clinker. This process has been in place at the Midlothian plant since 1995, and was recognized by the United States EPA with a national and an international award for its contribution to energy efficiency.

#### Emissions Control -

TXI also operates emissions-control equipment on Kiln #5 that is state of the art for the industry, including a scrubber for sulfur emissions (SO<sub>2</sub>) whose byproduct is 100% recycled back into the cement manufacturing process, and one of only a few regenerative thermal oxidizers in use by the cement industry in the world.

### Certification

TXI certifies that its Midlothian Cement Plant produces cement that meets the 1.7 pounds of NO<sub>x</sub> per ton of clinker standard that has been put forth by the various municipalities in the region.

Dry Process #5 Kiln at the TXI Midlothian Cement Plant has been manufacturing clinker at or below 1.7 pounds of NO<sub>x</sub> per ton of clinker on average for the past 12 months. This level has been recognized by the TCEQ in the State Implementation Plan.

More specifically, cement that is loaded out of silo group #2 or silo group #4 is produced from clinker that is manufactured at the #5 Kiln.

### Monitoring and Verification

To ensure that the 1.7 pounds per ton of NO<sub>x</sub> standard is being met, TXI will provide all necessary supporting documentation. This can include the following:

- **Verification that the material was shipped from the TXI Midlothian plant and not out-of-area or out-of-state**
- **Documentation either on the shipping ticket or related to specific shipping ticket numbers**
- **Access to necessary records and verification procedures at the TXI Midlothian plant, including audits and site visits**
- **Information on TXI's segregation processes that allow it to load silo groups 2 and 4 with cement that meets the standard**
- **Individual meetings and any other supporting information that is necessary to provide assistance in meeting the standard**

TXI is committed to assisting our communities in providing quality building materials that are made in the most efficient and environmentally-conscious manner possible. Many of TXI's facilities utilize alternative raw materials and fuels to replace non-renewable resources, improving our energy efficiency, and consequently lowering NO<sub>x</sub> emissions, setting the standard for our industry in this region. We are excited to be able to offer these products to you and encourage your comments or questions.

**Ronnie A. Pruitt**

Vice President, Aggregate & Cement Marketing & Sales

