The Texas Fertilizer Industry:
An Interpretation of Regulatory Compliance Records from 2008 to 2013

Tim Herrman, PhD
State Chemist and Director, Office of the Texas State Chemist
445 Agronomy Road, College Station, TX

August 1, 2013
Edited 10/25/2013 to reflect new information on AN theft incident
Introduction:

The fertilizer explosion in West, Texas on April 17th, 2013 elevated public awareness of the plant food industry. The Texas State Chemist has prepared the following report to assist the public’s understanding of the fertilizer industry in Texas, its compliance history, and conformance to the ammonium nitrate security requirements. The Office of the Texas State Chemist includes the Texas Feed and Fertilizer Control Service that administers the Commercial Fertilizer Act (Chapter 63 of the Texas Agriculture Code) and rules (Texas Administrative Code Title 4 Chapter 65) and the Agricultural Analytical Service that analyzes regulatory samples.

Industry Scope:

The Texas fertilizer industry is comprised of 593 registrants who are defined in the Texas Commercial Fertilizer Control Act (Chapter 63 of the Texas Agriculture Code) as a person who manufactures or distributes a commercial fertilizer in the state of Texas to an end-user. Not every registrant stores, blends or manufactures fertilizer. Fertilizer product for multiple guarantors could be produced by a single establishment. This practice is common in many commercial sectors, including the food and beverage industry, where a single manufacturing establishment may pack products for as many as a dozen or more companies.

Within the Fertilizer Control Act Subchapter I titled “Ammonium Nitrate” is the following: “A person may not produce, store, transfer, offer for sale or sell ammonium nitrate or ammonium nitrate material unless the person holds a certificate of registration issued by the service under this subchapter.” The mechanism for completing the form as prescribed by the service is provided on the OTSC website at: http://otscweb.tamu.edu/Forms-Fees/Forms/AmmoniumNitratePermitApplication-06-14-2012.pdf.

The number of ammonium nitrate registrants with the Texas Feed and Fertilizer Control Service (here after referred to as “the service”) of the Office of the Texas State Chemist (OTSC) is 115 as of June 30, 2013. Of these firms, 5 are located outside the state of Texas and 5 registrants are custom applicators. In total, 105 firms in Texas store ammonium nitrate.

Fertilizer Industry Compliance:

The Texas Commercial Fertilizer Control Act, Subchapter H, Penalties, states that a person commits an offense if the person violates a provision of this Chapter. The types of offenses include §63.142 Distribution of Misbranded Fertilizer, §63.143 Distribution of Adulterated Fertilizer, §63.144 Distribution of Commercial Fertilizer without Registration, Labeling, or Payment of Inspection Fee, §63.145 Refusal of Inspection or Sampling, and §63.146 Refusal to Pay Inspection Fee or Submit Records. The service determines conformance with the Act through inspecting firms and sampling and testing products. In total, the OTSC annual plan-of-work includes collection of 1750 fertilizer samples to determine conformance with the misbranding and adulteration provisions of the Act. The service reviews approximately 2000 labels and audits 30 facilities for their conformance to payment of inspection fees each year.
The service adopted a strategy of performing inspections using a statistically derived risk-based plan of work beginning in calendar year 2008 (Lee, et al. 2009). As an outcome of this approach, the number of violations within the fertilizer industry has dropped from 21% in 2008 to 14% in 2013 as depicted in Figure 1.

![Figure 1. Misbranding violations where a firm fails to meet nutrient guarantees.](image)

**Ammonium Nitrate Compliance:**

The 80th Texas Legislature passed HB 2546 pertaining to the sale of ammonium nitrate and ammonium nitrate material. The law requires the service shall adopt rules allowing a person to refuse to sell ammonium nitrate or ammonium nitrate material and distribute forms to each person registered under this subchapter to be used to record the information required for ammonium nitrate sale. The Ammonium Nitrate law took effect on September 1, 2007 and the Commercial Fertilizer Rules were amended on September 9, 2007 to prescribe procedures for refusal of sale and forms to record the information required under subsection (a) of §63.154 Sale of Ammonium Nitrate. The ammonium nitrate registration must be renewed annually as defined in the Texas Administrative Code Title 4, Agriculture Chapter 65, Commercial Fertilizer Rules. All firms seeking to renew their ammonium nitrate registration are inspected by an investigator from the service. These annual inspections began in the fall of 2007 and by August, 2008, the service had completed its first year of assessing the industry's
conformance to this new law. Subsequently, for firms to receive their annual registration they must be in full compliance with provisions in the law and rule. As depicted in Figure 2, a 96% compliance level was achieved in 2009. Firms in 2009 and subsequent years that did not conform to all provisions with Subchapter 1 during the inspection did not receive a registration renewal.

In Subchapter I. Ammonium Nitrate §63.157 Criminal Penalty, a person commits an offense if the person tampers with ammonium nitrate or ammonium nitrate material stored on the property of another, presents false identification to purchase ammonium nitrate, purchases ammonium nitrate with the intent to manufacture an explosive device, or sells ammonium nitrate and does not hold a registration issued under this subchapter. Firms are required to report to the service any refusal of sale. The service completes a suspicious activity report on those incidents and reports this information to the appropriate state and federal law enforcement authority. A total of 9 incidents have been reported and investigated since the implementation of the Ammonium Nitrate law in 2007. One incident involved ammonium nitrate theft where an employee of an ammonium nitrate registrant attempted to misrepresent fertilizer product as distressed and offered it for sale to a farmer. The incident was reported by the farmer and the fertilizer company employee was charged and prosecuted.

Comment [OTSC1]: The incident was reported by the farmer to the company selling the product, who subsequently reported the incident to OTSC. All material was recovered. OTSC was informed by the detective responsible for the case that charges for felony theft were filed. OTSC followed with a class A misdemeanor under §63.157(a) and (c). To file a charge, OTSC filed for and received the CJIS codes from the Department of Public Safety. The CJIS codes were requested on 9/9/2010 and codes were obtained on or around 9/28/2010 (CJIS 73990133). The state chemist moved the process forward for legal action by contacting the court clerk and presenting her with the CJIS misdemeanor code.

Figure 2. Annual inspection results of all ammonium nitrate firms in Texas.
Public Right-to-Know and Homeland Security:

The Texas Commercial Fertilizer Control Act requires the service to publish, at least annually, information concerning the sales of commercial fertilizer, together with data on those sales that the service considers advisable. The service reports these data on their website together with a list of all firms with active fertilizer permits at http://otscweb.tamu.edu/Reports/Annual.aspx. While Texas Government Code §418.178 prohibits the disclosure of the specific location of the firms that manufacturer, store, transport, sell or offer for sale ammonium nitrate or ammonium nitrate material, the Texas Commercial Fertilizer Control Acts requires (§63.145) firms with ammonium nitrate permits to display “the person’s registration in conspicuous public view in the person’s place of business.” Thus, these laws provide a balance between homeland security and public right-to-know.

The Texas Department of State Health Services maintains a database where firms report storage of various chemicals using a tier system that includes ammonium nitrate. The databases of DSHS and OTSC have been compared by various agencies including the Department of Public Safety, Texas Fire Marshall’s Office and the Office of the Texas State Chemist. The DSHS database included 72 unique firms reporting ammonium nitrate that were not registered with the service. Field investigators within OTSC subsequently investigated these firms and found that none manufactured, stored, transported, sold or offered for sale ammonium nitrate fertilizer or ammonium nitrate fertilizer material.

**Tex. Gov't Code § 418.178**

Sec. 418.178. CONFIDENTIALITY OF CERTAIN INFORMATION RELATING TO CONSTRUCTION OR ASSEMBLY OF WEAPONS. (a) In this section, "explosive weapon" has the meaning assigned by Section 46.01, Penal Code.

(b) Information is confidential if it is information collected, assembled, or maintained by or for a governmental entity and:

(1) is more than likely to assist in the construction or assembly of an explosive weapon or a chemical, biological, radiological, or nuclear weapon of mass destruction; or

(2) indicates the specific location of:

(A) a chemical, biological agent, toxin, or radioactive material that is more than likely to be used in the construction or assembly of such a weapon; or

(B) unpublished information relating to a potential vaccine or to a device that detects biological agents or toxins.
Fertilizer Industry Proximity to Communities:

The proximity of fertilizer establishments to homes, schools, and business became a focal point of discussion following the West Fertilizer Company incident. Figure 3 depicts the distribution of fertilizer registrants across the state of Texas. The proximity of fertilizer facilities to homes, businesses and other building (e.g. schools and government offices) and the proximity of ammonium nitrate to other agrichemicals are presented in Table 1.

![Fertilizer Companies By Zipcode](image)

Figure 3. Texas fertilizer companies by zip code.

Table 1: Distance between fertilizer and pesticides, feed, grain and seed, proximity to residences, businesses or other buildings and percentage within 2-4 blocks.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Pesticides</th>
<th>Feed</th>
<th>Grain</th>
<th>Seed</th>
<th>Residences</th>
<th>Businesses</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>255 ft</td>
<td>305 ft</td>
<td>257 ft</td>
<td>294 ft</td>
<td>580 ft</td>
<td>556 ft</td>
<td>303 ft</td>
</tr>
<tr>
<td>Minimum</td>
<td>24 ft</td>
<td>24 ft</td>
<td>21 ft</td>
<td>24 ft</td>
<td>51 ft</td>
<td>30 ft</td>
<td>15 ft</td>
</tr>
<tr>
<td>Maximum</td>
<td>2400 ft</td>
<td>2400 ft</td>
<td>1500 ft</td>
<td>5280 ft</td>
<td>5280 ft</td>
<td>3900 ft</td>
<td>3960 ft</td>
</tr>
<tr>
<td>Percent</td>
<td>56%</td>
<td>20%</td>
<td>66%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Risk Management Options:

Risk management is the process, distinct from risk assessment, of weighing policy alternatives in consultation with all interested parties, considering risk assessment and other factors relevant for the health protection of consumers and for the promotion of fair trade practices, and if needed, selecting appropriate prevention and control options (FAO,WHO 2006).

The Office of the Texas State Chemist is a regulatory risk manager for commercial feed and fertilizer. OTSC is comprised of a regulatory agency (Texas Feed and Fertilizer Control Service) and a laboratory (Agricultural Analytical Service). The mission of the OTSC is to: Protect consumers and enhance agribusiness through its feed and fertilizer regulatory compliance program, surveillance and monitoring of animal-human health and environmental hazards, and preparedness planning. Thus, the agency impacts all 26 million Texans and beyond. An advisory committee comprised of stakeholders represents feed and fertilizer consumers and manufacturers/distributors. They represent different sectors and interests of Texans and provide input to the service involving issues impacting risk management and market protection including ammonium nitrate fertilizer. The advisory committee provides the service input on proposed policies and rules. The service is collaborating with the state and federal agencies and elected officials that may provide risk management alternatives involving the storage and handling of ammonium nitrate. OTSC is considering risk management policy alternatives that fall within the legal scope of OTSC defined within the Texas Commercial Fertilizer Control Act and rules in consultation with the advisory committee and other interested parties.

Literature Cited:
