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# State of Texas Outreach to Counties Having an Ammonium Nitrate Facility

TEXAS DEPARTMENT OF INSURANCE



Jerry Dane Chapman



Cyrus Reed

This meeting and  
presentation is dedicated  
to those first responders  
and civilians who died on  
April 17, 2013 in West,  
Texas



Kevin Sanders



Captain Kenneth Harris



Perry Calvin



Morris Bridges

This meeting and  
presentation is dedicated  
to those first responders  
and civilians who died on  
April 17, 2013 in West,  
Texas



Cody Dragoo



Joseph Pustejovsky



Douglas Snokhous

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and civilians who died on  
April 17, 2013 in West,  
Texas



Robert Snokhous



# Timeline of events leading to the explosion

Fertilizer Plant Explosion  
West, Texas • April 17, 2013



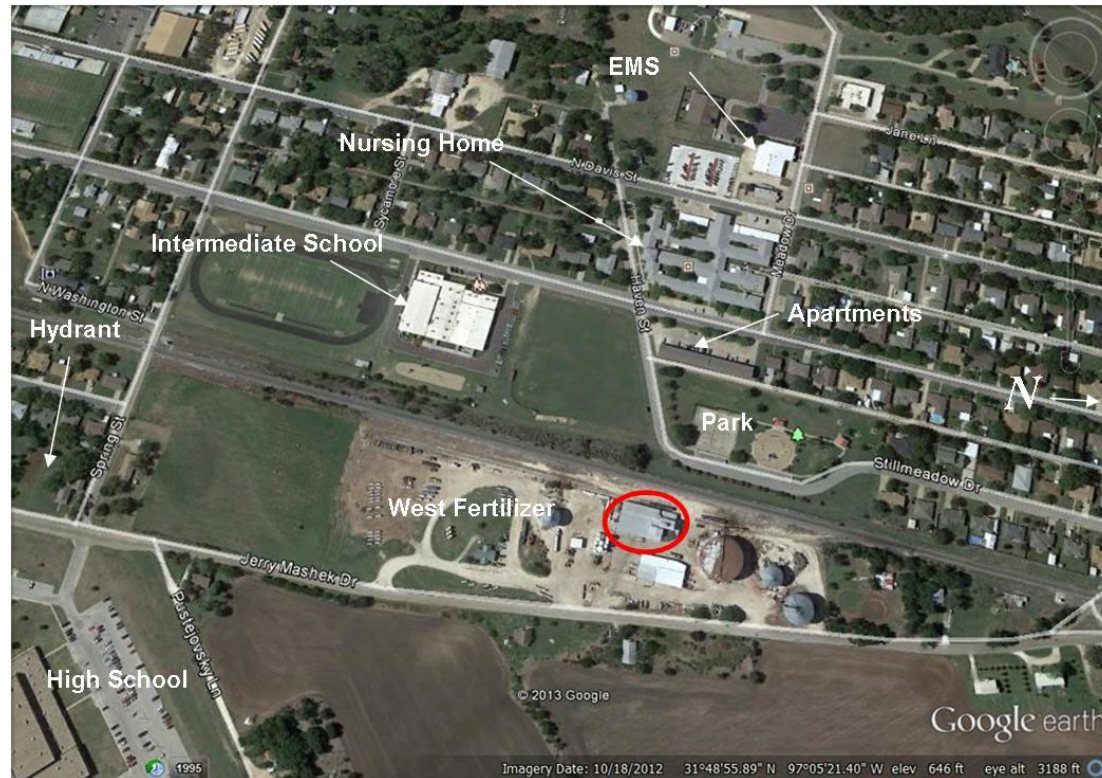
On April 17, 2013, at approximately 7:29 p.m. a fire was reported at the West Fertilizer Plant in West, Texas. Approximately 22 minutes later a large explosion occurred.

The explosion caused damage in a 37 square block area and destroyed numerous homes. Several other homes were also damaged. In the end, a crater 93 feet wide was created at the seat of blast.

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## West Fertilizer Plant and Immediate Vicinity



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**Origin of the fire was in the fertilizer and seed room**



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# West Fertilizer Plant Before Fire



Chemical storage

Mixing and delivery  
occurred on East side of  
building



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7:38pm

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7:40pm

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7:48pm

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7:50PM

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Smoke plume immediately  
after explosion

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**Aerial view of where the fire was first seen from a  
post-blast perspective.**

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## West Fertilizer Plant



Aerial shots, after the  
fire and explosion



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**Apartment complex to the West of the plant. Incredibly, only two fatalities here.**

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**Pictured Above: Intermediate School after the blast.**

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# Mitigation of Hazards on Scene



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# Union Pacific and Railroad Tracks

- In addition to mitigating the anhydrous ammonia leak, repairs to the railroad were coordinated by investigators. Union Pacific not only mitigated the tank leak, but they also began repairing the tracks to provide a North-South commerce route for rail freight.



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**Railroad tracks displaced next to the blast seat.**

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**By Monday, April 22, 2013, the train was operational.**

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# The Investigation



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# Conclusions

- Scene Preservation/ LODD—Response Time
- Planning
  - Prior and During
  - Regular Briefings
- Complex Scene Management
  - ICS/ Unified Command
  - Ops/ Planning/ Logistics/ Liaison
- PIO/JIC
- “Check the egos!”
- TEAMWORK

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# CSB

SAFETY VIDEO



# Line of Duty Death Report

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# Review Panel

- Chief Steve Bass, City of Grapevine, Texas: Group Leader
  - Chief Jimmy Chew, City of Stephenville, Texas
  - Chief Brian Crawford, City of Plano, Texas
  - Chief Danny Kistner, City of McKinney, Texas
  - Chief Les Stephens, City of San Marcos, Texas
- 
- Technical advice provided by Martin T. Gresho, PE, FP2FIRE

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# Finding 1: Standard Operating Procedures/Guidelines

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# Finding 2: Pre-Fire Planning

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# Finding 3: Incident Management

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# Finding 4: Strategy and Tactics

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# Finding 5: Firefighter Safety and Accountability

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# Finding 6: Training

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# Finding 7: Fire Prevention, Code Enforcement and Risk Mitigation

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# Finding 8: Adopt and Enforce a Fire Code

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# Finding 9: Establish a Consistent Hazardous Materials Program Per Code Requirements

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# Finding 10: Develop a Policy to Address Existing Structures

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# Finding 11: Alcohol and Substance Abuse

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# Activity In the Aftermath of West

- SFMO was tasked by the Homeland Security and Public Safety Committee of the Texas House of Representatives to identify storage facilities in Texas with large amounts of AN.
- SFMO researched federal and state databases listing facilities with AN.
- Fire safety inspectors conducted 134 inspections/consultations that resulted in the identification of 104 facilities with 10,000 pounds or more of ammonium nitrate. The inspections were conducted with the facilities voluntary cooperation.

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# Activity In the Aftermath of West

- A map application was developed that allows citizens to type in their zip code to determine if an AN facility is in their community. Contact information is provided to the local fire department for more details.  
(<https://apps.tdi.state.tx.us/ammoniumnitrate/StartAction.do>)
- The purpose of the map application is to share information with the public, without providing too many details due to security concerns.
- 
- There were 18,536 hits to this site in its first month (November 1<sup>st</sup> – December 1<sup>st</sup>). In December there were 2,252 hits; in January there were 1,695 hits and in February there were 458 hits. The total number of hits on the website was 22,941.

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# Activity In the Aftermath of West

- County officials are being provided potential blast zones based on the average tonnage of AN stored at the facilities in this county. Conducted 68 County tour that had AN facilities. Athen's AN fire 5-29-14.
- The Legislature passed legislation (HB 942) in the 2015 session allowing state and local fire marshals and fire chiefs to conduct inspections and pre-fire planning.

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# HB 942 Highlights

- The owner or operator of an AN storage facility shall, on request, allow a fire marshal to enter the facility to make a thorough examination of the facility and allow the local fire department access to the facility to perform a pre-fire planning assessment.
- Where AN is stored: no flammable substances, structural deficiencies, improper building services, no other dangerous materials stored in AN building, egress, reporting to state and federal agencies, NFPA 704 placard, no wood that is impregnated by AN in the storage compartment, minimum 30 ft. distance to combustibles & flammable materials.
- Inspection violations must be corrected or permit to store AN will be suspended.

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# Occupational Safety and Health

- OSHA Standard 1910.109(i) defines additional requirements for storage of ammonium nitrate.

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# National Activity

- The U.S. Senate Committee on Environment and Public Works held a hearing on June 27, 2014 in Washington, D.C., and various experts from the Chemical Safety Board, Department of Homeland Security, Texas A&M University, and others all agreed with Chairperson Boxer that fire must be prevented from reaching bulk storage of ammonium nitrate.

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## Significant Changes to NFPA 400 Hazardous Materials Code 2016 Edition, Chapter 11 (Please refer to the entire standard)

- Buildings storing in bulk or bag shall be non-combustible (Type I or II) construction.
- Bins or compartments shall be constructed of non-combustible materials.
- All flooring in storage and handling areas shall be without open drains, traps, tunnels, pits, or pockets. Emergency Action Planning also required.
- Protection of Existing Buildings: The requirements 11.1.5.1 through 11.1.5.4 shall apply retroactively to existing buildings of Type III, IV, V construction or buildings with combustible content. Automatic sprinklers, alarms, public notification/alert system, monitoring/supervision.
- AN shall be isolated in a separate room by fire barrier walls with minimum 1-hour rating. Public Notification/Alert System for residents within 1-mile to evacuate.
- NFPA 704 placarding and signage, DO NOT FIGHT FIRE. EXPLOSION HAZARD

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# First Responder Safety

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## Initiative #1

Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability, and personal responsibility.

## Initiative #2

Enhance the personal and organizational accountability for health and safety throughout the fire service.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## **Initiative #3**

Focus greater attention on the integration of risk management with initiative management at all levels, including strategic, tactical, and planning responsibility.

## **Initiative #4**

All firefighters must be empowered to stop unsafe practices.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## Initiative #5

Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters based on the duties they are expected to perform.

## Initiative #6

Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## Initiative #7

Create a national research agenda and data collection system that relates to the initiatives.

## Initiative #8

Utilize available technology wherever it can produce higher levels of health and safety.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## **Initiative #9**

Thoroughly investigate all firefighter fatalities, injuries, and near misses.

## **Initiative #10**

Grant programs should support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## **Initiative #11**

National standards for emergency response policies and procedures should be developed and championed.

## **Initiative #12**

National protocols for response to violent incidents should be developed and championed.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## **Initiative #13**

Firefighters and their families must have access to counseling and psychological support.

## **Initiative #14**

Public education must receive more resources and be championed as a critical fire and life safety program.

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# National Fallen Firefighter Foundation 16 Firefighter Life Safety Initiatives

## Initiative #15

Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.

## Initiative #16

Safety must be a primary consideration in the design of apparatus and equipment.

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# Questions?

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