

# TEXAS STATE FIRE MARSHAL'S OFFICE

## Firefighter Fatality Investigation



Investigation Number FY 10-01

**Captain Thomas Araguz III**

Wharton Volunteer Fire Department  
July 3, 2010

Texas Department of Insurance  
Austin, Texas

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## **ACKNOWLEDGEMENTS**

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Boling Volunteer Fire Department

Wharton Volunteer Fire Department

Wharton County Sheriff's Office

City of Wharton Police Department

United States Department of Justice, Bureau of Alcohol, Tobacco, Firearms, and Explosives National Response Team

Texas Commission on Fire Protection

Texas Fire Chiefs Association

Hays County Emergency Services District #3

South Hays FD

National Institute for Occupational Safety and Health

Travis County Medical Examiner's Office

And the many emergency responders to this incident

## Executive Summary

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On July 3, 2010, Wharton Volunteer Fire Department Captain Thomas Araguz III was fatally injured during firefighting operations at an egg production and processing facility. At 9:41 PM, Wharton County Sheriff's Office 911 received a report of a fire at the Maxim Egg Farm located at 3307 FM 442, Boling, Texas. Boling Volunteer Fire Department and the Wharton Volunteer Fire Department responded first, arriving approximately 12 minutes after dispatch. Eventually, more than 30 departments with 100 apparatus and more than 150 personnel responded. Some departments came as far as 60 miles to assist in fighting the fire.

The fire involved the egg processing building, including the storage areas holding stacked pallets of foam, plastic, and cardboard egg cartons and boxes. It was a large windowless, limited access structure with large open areas totaling over 58,000 square feet. A mixed construction, it included a two-story business office, the egg processing plant, storage areas, coolers, and shipping docks. It was primarily metal frame construction with metal siding and roofing on a concrete slab foundation with some areas using wood framing for the roof structure.

Captain Araguz responded to the scene from the Wharton Fire Station, approximately 20 miles from the fire scene, arriving to the front, south side main entrance 20 minutes after dispatch. Captain Araguz, Captain Juan Cano, and Firefighter Paul Maldonado advanced a line through the main entrance and along the south, interior wall to doors leading to a storage area at the Southeast corner. Maldonado fed hose at the entry door as Captains Araguz and Cano advanced through the processing room. Araguz and Cano became separated from the hose line and then each other. Captain Cano found an exterior wall and began kicking and hitting the wall as his air supply ran out. Firefighters cut through the exterior metal wall at the location of the knocking and pulled him out. Several attempts were made to locate Captain Araguz including entering the building through the hole and cutting an additional hole in the exterior wall where Cano believed Araguz was located. Fire conditions eventually drove the rescuers back and defensive firefighting operations were initiated.

Captain Cano was transported to the Gulf Coast Medical Center where he was treated and released. Captain Araguz was recovered at 7:40 AM, the following morning. Initially transported by ambulance to the Wharton Funeral Home then taken to the Travis County Medical Examiner's Office in Austin, Texas for a post-mortem examination.

This report is to honor Captain Araguz by taking the lessons learned from this tragic incident so others may not perish.

Captain Araguz, a 30 year old, 11-year veteran of the Wharton Volunteer Fire Department made Captain in 2009.



# Introduction

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On Saturday, July 3, 2010, the Wharton County Sheriff's Office notified the Texas State Fire Marshal's Office of a firefighter fatality. Wharton County advised that the firefighter's location was unknown inside the structure.

The State Fire Marshal's Office (SFMO) commenced the firefighter fatality investigation under the authority of Texas Government Code Section 417.0075. This statute requires the SFMO to investigate the origin and cause of the fire, the condition of the structure, the suppression operation, and any factors that may have contributed to the firefighter fatality. The statute requires the State Fire Marshal to coordinate the investigative efforts and may enlist established fire service organizations and private entities to assist in the investigation.

Texas State Fire Marshal Paul Maldonado assigned Investigator Dean Shirley as the SFMO firefighter fatality investigation Incident Commander (IC). SFMO Investigators Christopher Janssen and Jay Evans responded to the fire scene and initiated an assessment of the scene to determine the resources needed to conduct the investigation.

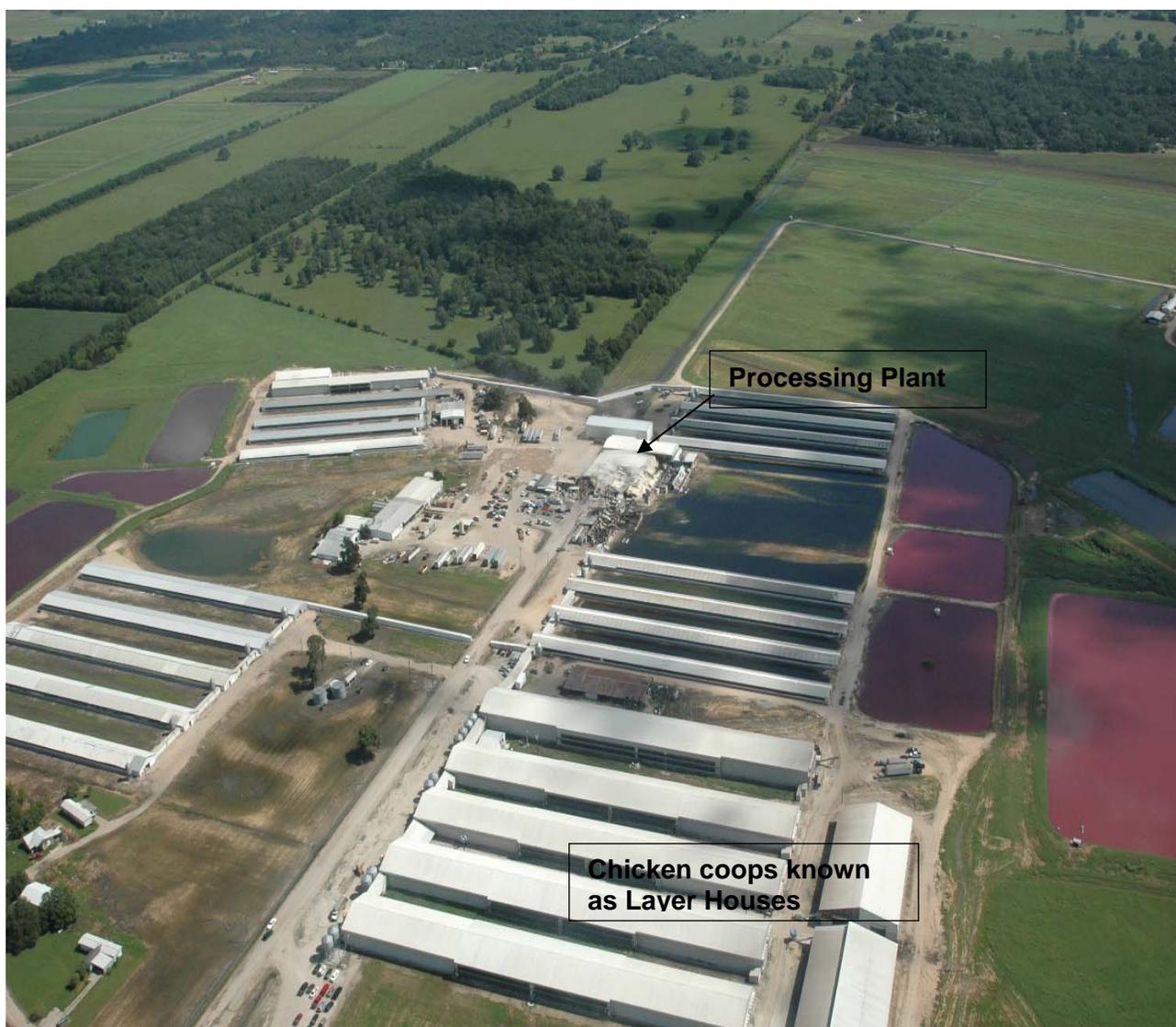
An action plan of assignments and objectives for the investigation was established. Shirley assigned Investigator Janssen as the Origin and Cause Team Leader to coordinate fire cause investigative efforts of the on-scene personnel. Evans was assigned as the SFMO Liaison Officer providing assistance to the investigation teams, fire department, and the local media. SFMO Life Safety Inspector Christopher Beasley responded to evaluate the building construction and any life safety features of the facility including gathering historical information and the pre-fire condition of the facility. Shirley requested assistance from the Texas Fire Chiefs Association in providing a Fire Chief from a similarly sized volunteer department to assist in evaluating the fire ground operations. Fire Chief David Smith from the South Hays Fire Department responded. The Texas Commission on Fire Protection (TCFP) assisted in inspecting and evaluating the personal protective equipment.

The investigation began on July 4, 2010, with the initial assessment and survey of the involved property to determine the needed resources for the scene examination and personnel necessary to obtain witness statements information. Periodic updates regarding the investigation provided necessary information to the SFMO IC through on-site and daily briefings.

The Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE) National Response Team (NRT) responded to assist the state and local agencies in the investigation of the origin and cause of the fire.

Led by Special Agent Brian Hoback of the Houston Division Office, 35 investigators from around the United States and Houston area responded to investigate the loss and determine the origin and cause.

The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program responded to conduct an independent investigation.



***Aerial View of Maxim Egg Farm, Boling, Texas***



*South aerial view of the egg processing plant*

## Building Structure and Systems

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The fire incident building was located on the property of Maxim Egg Farm, located within an unincorporated area of Wharton County. The 911 address is 580 Maxim Drive, Boling, Texas 77420.

Wharton County has no adopted fire codes, or model construction codes, and no designated Fire Marshal on staff that conducts fire safety inspections within their jurisdiction.

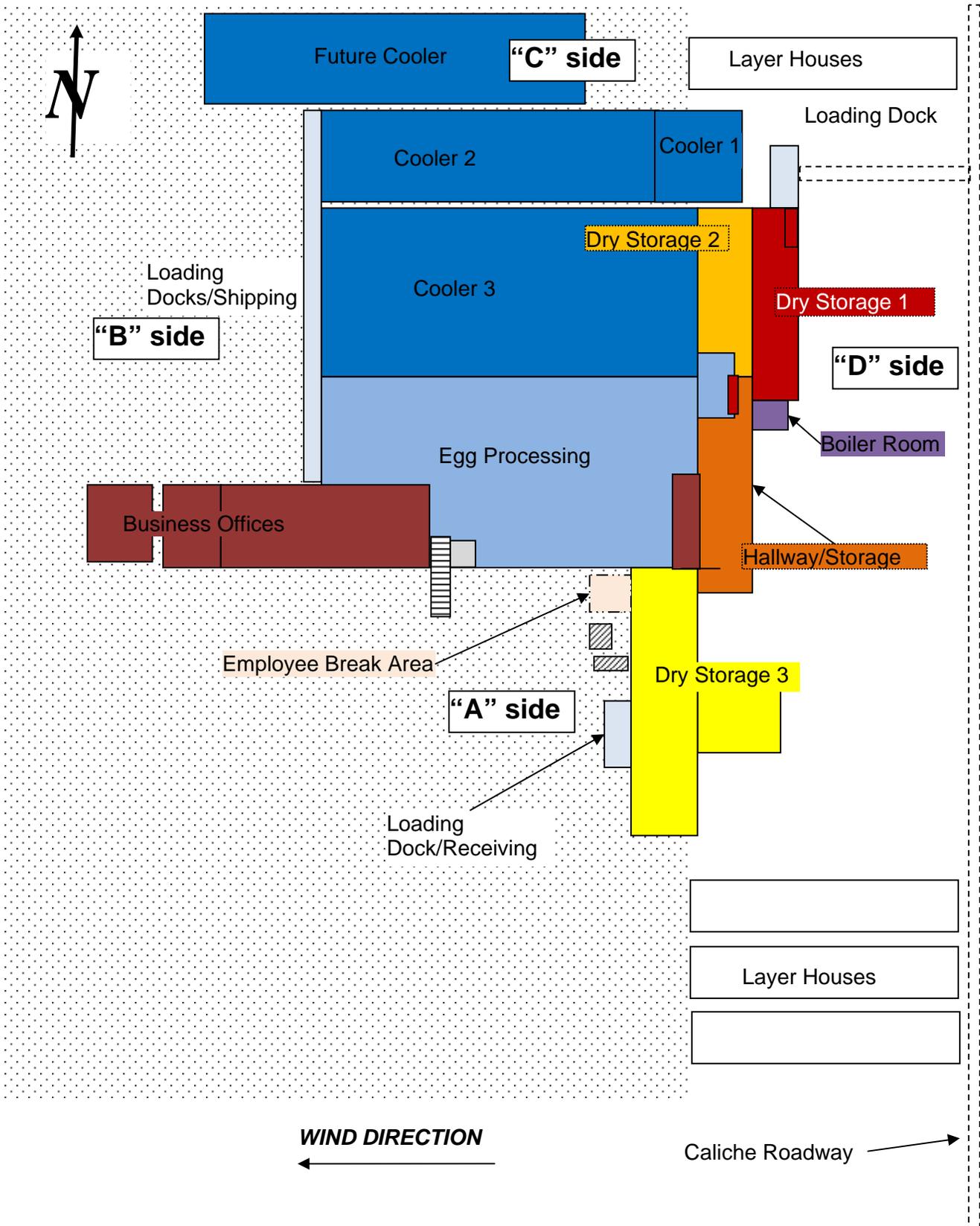
*National Fire Protection Association (NFPA) Standard 101, Life Safety Code, 2009 Edition*, is adopted by the State Fire Marshal's Office, and is the applicable standard for fire and life safety inspections in the absence of an adopted fire code within unincorporated areas of a county by an applicable authority. All references regarding evaluation of the incident building in relation to minimum life safety requirements are based on *NFPA 101, Life Safety Code, 2009 Edition*.

Maxim Farm property includes 23 chicken coops known as layer barns that average 300 feet long and 50 feet wide holding between 15,000 to 25,000 chickens each. These layer barns inter-connect to a central processing building by a series of enclosed conveyor belts transporting over one million eggs daily. The property includes integrated feed silos, water tanks, and waste management facilities. Additional areas on the property include equipment barns, shipping offices, loading docks, coolers, storage areas, and business offices.

### Overall Building Description

The main processing structure was an irregularly shaped mixed construction of metal, concrete block, and wood framing on a concrete slab foundation with approximately 58,000 square feet of space. Three dry-storage rooms connected by a wide hallway lined the east side of the plant. A concrete block (CMU) wall separated the egg processing area from the East Hallway and storage rooms. Coolers were located north of the processing room with the loading docks along the west side of the structure. The loading docks were accessible from the processing room, Cooler 3, and Cooler 2. Cooler 1 was located at the north end of Dry Storage 2. A two-story building housing the business office was attached to the main processing plant at the southwest corner.

**Diagram 1  
Site Plan**



## **Construction Features**

The building construction was classified as an NFPA 220, Type II-000 construction with an occupancy classification by the *Life Safety Code* as Industrial with sub-classification as special-purpose use. The *Life Safety Code* imposes no minimum construction requirements for this type of occupancy. The predominant use of the building was to process and package fresh eggs for shipment after arriving by automated conveyor directly from a laying house adjacent to the building. The general floor plan of the building consisted of a large egg processing room, with surrounding areas used for storage of packing materials and two large drive-in coolers for holding packaged eggs prior to shipping.

Building construction consisted of a combination of steel and wood framing with a sheet metal exterior siding and roofing over a low-pitch roof on a concrete slab foundation. Structural elements within the interior of the building were exposed and unprotected with no fire-resistance rated materials applied. The load bearing structural elements consisted of steel beams, and steel pipe columns, with steel open web trusses supporting the roof structure. Wood components were also used as part of the load bearing elements and wall framing. Perimeter walls of the cooler compartments were constructed of concrete masonry units (CMU). The building was not separated between other areas of use by fire-resistance rated assemblies. Ancillary facilities located within the building used for administrative offices and other incidental spaces were constructed of wood framing with a gypsum wallboard finish.

## **Detailed Construction Features**

The front of the structure faced to the south where the main entrance to the processing room and business offices was located approximately 4 feet above the parking lot grade level and accessed by a series of steps. The business office was a two-story wood frame construction with a vinyl exterior siding under a metal roof on a concrete slab foundation. Additional separate, single-story, wood frame structures with offices located to the west of the main business office connected by covered walkways.

## **Processing Room**

The egg processing room was 141 feet along the east and west walls and approximately 100 feet along the north and south walls. The processing room received the eggs transported from the layer barns on the conveyor belt system. The room contained the processing equipment and conveyor systems where eggs were cleaned, graded, packaged and moved to large coolers to await shipment. The construction of the processing room was sheet metal panels embedded into the concrete slab foundation supported by 8-inch wide metal studs. Sheet metal panels lined the exterior and interior sides of the south and west walls with fiberglass insulation sandwiched between.

The north wall separated the processing room from Cooler 3 and consisted mainly of interlocking insulated metal panels embedded into the slab locked at the top in metal channels. Their interior surface was polyurethane laminate.

The east wall was mainly of concrete block (CMU) construction. A USDA office and a mechanics room were accessed through doors in the east wall of the processing room. The northeast corner of the processing room extended into the north end of the east hallway, forming an 18 feet by 18 feet area with wood frame construction on a concrete stem wall with fiber cement board (Hardy board) and metal panel siding. A 6-foot wide opening between the processing and dry-storage areas with a vinyl strip door allowed unrestricted access.

Along the south wall of the processing room, a walkway between the processing equipment and exterior wall led to swinging double doors at the southeast corner to enter into Dry Storage 3. Conveyors carried the eggs from the north and south layer barns through openings in the walls of the extension of the processing room. The conveyors from the north and south layer barns entered the building suspended overhead. As the conveyors approached the entrance to the main processing room, they gradually descended to 3.5 feet above floor level and were supported by metal brackets attached to the floor. Electric drive motors attached to the conveyors at several points along their lengths to power their movement.



**Main Processing/Production**

The roof consisted of steel columns and girders with metal panel roofing attached to metal purlins supported by steel rafters. Wire mesh supported fiberglass insulation under the roof deck. The roof gable was oriented north to south.

## **Dry Storage**

The plant included three dry-storage rooms along the eastern side of the building connected by an east hallway. Dry Storage 1 and Dry Storage 2 were located in the northeast corner of the plant under a common sloping metal roof. The dry-storage rooms held pallets of containers including polystyrene egg crates, foam egg cartons, pulp egg cartons, and cardboard boxes.

**Dry Storage 1** was approximately 123 feet long and 50 feet wide and was 4 feet below the grade of the rest of the plant. It was added to the east side of Dry Storage 2 in 2008. Dry Storage 1 was a concrete slab and 4-foot high concrete half wall topped with wood framing and metal siding. The metal roof sloped from 11 feet high above the west side to 10 feet high above the east wall. The roof attached to 2 inch x 8 inch wood joists supported by two rows of steel support columns and steel girders. The two rows of seven columns were oriented in a north-south direction.

A concrete ramp at the south end facilitated access to the East Hallway and Dry Storage 2 and the main level of the processing room. A concrete ramp at the northeast corner of Dry Storage 1 provided access to the rear loading dock. The rear dock was secured on the interior at the top of the ramp by a wood frame and metal double door with a wooden cross member and a chain and padlock. An additional wood frame and screened double door secured on the interior.

The conveyor belt from the north layer barns ran the length of the west side of Dry Storage 1 where it turned to the west, crossing Dry Storage 2 and the East Hallway into the main processing room.

Dry Storage 1 contained 29 rows of pallets, seven to eight pallets deep, of mainly Styrofoam egg crates stacked between 7 and 10 feet high, depending on their location. Corridors between the rows were maintained to provide access to the pallets with an electric forklift. Fluorescent light fixtures attached to the wood rafters in rows north to south with their conductors in PVC conduit. Skylights spaced evenly above the west side allowed for natural light. Pallets of stock material were single stacked below the locations of the light fixtures to keep clearance and prevent damage.



***Pre-fire photo of Dry Storage 1 looking north from the bottom of the south ramp toward the north ramp leading to the loading dock***

**Dry Storage 2**, located west of and 4 feet above Dry Storage 1, stored pallets of flattened cardboard box stock. The room was approximately 81 feet long and 40 feet wide. The south wall was the processing room extension and was approximately 25 feet long. The east side of the room was open to Dry Storage 1 with 4 inch x 4 inch unprotected wood studs spaced unevenly from 4 feet to 9 feet, supporting the metal roof. The west wall was CMU construction and was the exterior wall of Cooler 3. The metal roof sloped from the top of the west wall approximately 12 feet high to approximately 11 feet above the east side.

The room was accessed from the south end at the top of the ramp leading down into Dry Storage 1. Pallets of folded cardboard boxes were stacked along the entire length of the west wall extending 16 to 20 feet to the east. The rows of pallets were without spacing for corridors. One row of six fluorescent light fixtures attached to wood rafters near the north-south centerline.



***Dry Storage 2 is in the background with the processing room extension and stem wall in the foreground. Dry Storage 1 is to the right.***

The **East Hallway** was approximately 118 feet long and 37 feet wide running along the length of the east side of the processing room. The East Hallway connected Dry Storages 1 and 2 with Dry Storage 3 by a corridor at the south end. The East Hallway allowed access between the storage room areas and into utility rooms including the Boiler Room at the north end and a mechanics room and small utility closet. Pallets of polystyrene egg crates were stored along the east wall in rows of three pallets each. Seven pallets of polystyrene egg crates were stored along the conveyors.

The west wall was concrete block construction (CMU) until it connected to the extension of the processing area constructed of wood frame covered by Hardy board and sheet metal. The east wall was sheet metal embedded in the concrete slab supported by 2 inch x 4 inch wood studs with Hardy board interior. The metal roof sloped from a height at 12 feet at the west wall to 10 feet high at the east wall, supported by 4 inch x 6 inch wood columns and 2 inch x 8 inch wood joists.

Two conveyors entered the south end of the east hallway from Dry Storage 3. The conveyors ran parallel for approximately 80 feet along the west wall and entered the processing room through openings in the extension at the north end of the east hallway. They were 6 feet from the west wall

and gradually descended from a height of 9 feet at the south end to 3.5 feet at the north. Each conveyor was 31 inches wide and combined was approximately 7 feet wide. Two compressor machines and a pressure washer were located along the west wall near the south end.



*The East Hallway showing the CMU west wall and the conveyors*

The **Boiler Room**, located at the northeast corner of the East Hall, housed two propane fired boilers, a water treatment system and two vacuum pumps. It was wood frame construction with metal siding under a metal roof on a combination concrete slab and concrete pier and wood beam foundation. A small utility room with service panels was constructed of concrete block on a concrete slab under a metal roof and was also located along the west wall of the East Hallway. An approximately 10 feet wide corridor connected the East Hallway to Dry Storage 3.

**Dry Storage 3** extended south from the main processing room and East Hallway to the south dock area where tractor-trailers parked to unload the pallets of supplies. Two parallel conveyors suspended 9 feet overhead from the roof extended along the length of the east wall where it passed through the south wall toward the south layer houses.

The plant's main power conductors entered the west wall of Dry Storage 3 from load centers and transformers mounted to the slab outside approximately 15 feet south of the main processing room exterior wall. Stacks of wood pallets were stored in Dry Storage 3. Corridors wide enough for forklifts provided access to the south cargo dock area.



***Pre-fire photo of Dry Storage 3 looking south from the swinging double doors of the processing room at the area where Captain Cano was rescued***

### **Building Services**

Electrical service was provided to the facility by a public utility. The point of service for the power supply was located on the south side of the building adjacent to the front entrance along the west wall of Dry Storage 3. Boilers for water used in the egg processing were propane fueled and located on the east side of the building on an outside wall. The building was equipped with a diesel powered emergency generator in the case of primary utility failure, and was designed to provide full-load power to the facility.

Water supply was provided from an on-site well pumped to two storage tanks. Water was pumped to the layer houses and the main processing plant. The water treated at the boiler room of the main processing plant was used for cleaning and processing eggs. A single 5-inch connection located at

the base of the water storage tank was the only connection available for fire department use. Refilling tankers was by gravity feed only. There are no hydrants on the property. There were no fire sprinkler systems in the plant.

## **Building Life Safety Evaluation**

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### **Hazard of Contents Classification**

Processes conducted in the incident building were classified as ordinary hazard operations.

Fuel packages contained in the building consisted primarily of packing materials for egg processing and shipping that included foam containers, rigid plastic containers, pulp fiber containers, bundled cardboard boxes, and wood pallets. The containers were stored in a stacked manner and shrink wrapped on pallets with plastic sheeting. The materials were reported to be stored in stacks up to approximately 10 feet in height. These materials are categorized by the *Life Safety Code* as ordinary hazard materials, that is, materials that are likely to burn with moderate rapidity or produce a considerable volume of smoke when ignited. Significant amounts of these materials were held in designated dry-storage areas and then called-up and staged adjacent to the processing area as needed.

### **Means of Egress**

The occupant load of the building at peak production periods was reported to be up to 35 employees. At the time of fire discovery, there were 18 employees present in the building.

The occupant load of this building requires a minimum of two exits remotely located from each other. Three designated exit doors provided the arrangement of means of egress for the facility. One was located on the south side of the building, considered the main entrance/exit. A second exit door was located on the south side of the building from Dry Storage 3, and a third exit door was located at the loading dock on the west side of the building. There was an additional door located at the northeast corner of the building at the north end of Dry Storage 1, where a new loading dock had been constructed. It was reported that this door was not used as a regular point of access for employees, but the door was kept unlocked until approximately 6:00 PM, after which it was secured with a keyed padlock until the following morning.

### **Interior Finish**

Interior finish requirements are permitted by the *Life Safety Code* to be class A, class B, or class C in operating areas.

Interior walls of storage areas were not finished with a wall covering and the structural elements remained exposed. The interior walls of the processing area were reported to consist of steel panels with a polyurethane coating. The ceiling was constructed of grid supported drop-in panels, with a laminated finish. Office areas and other incidental spaces were finished with gypsum wallboard.

### **Features of Fire Protection**

Fire safety features for the building were limited to portable fire extinguishers, although they were not required by code for this occupancy. Facility Management reported that household type, single-station (not interconnected) battery-operated smoke detectors were located in various areas of the building; however, it was not confirmed if this included all dry-storage areas. Smoke detectors were not recovered during the scene examination. The building was equipped with externally illuminated exit signs at designated exit doors, and emergency generator power provided required exit path illumination in the event of primary power failure.

Due to the extensive fire damage and collapse of the incident building, it was not verified as to the location of portable fire extinguishers, smoke alarms and exit sign placement in the building. However, from information gathered from facility personnel and observations made during a site visit to another company-owned facility used for the same operations, it was reported that these items were in place at the incident building.

The building was not equipped with fire alarm or fire sprinkler systems. *Life Safety Code* provisions for buildings classified as industrial occupancies are not required to be equipped with a fire alarm system when the occupant load is less than 100. There are no requirements imposed for fire sprinklers for this occupancy classification unless the building conducts high-hazard operations or processes as defined in the *Life Safety Code*. The occupants in the building were alerted to the fire by verbal means, and immediate evacuation commenced with all employees gathered and accounted for in a pre-designated area outside of the building.

A fire evacuation plan was in place and it is reviewed as part of new-employee orientation. Emergency drills were not conducted on a regular basis.

## Origin and Cause Investigation

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The origin and cause investigation began on July 4, 2010, conducted jointly by the State Fire Marshal's Office led by Investigator Christopher Janssen and the Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE), Western National Response Team (NRT) led by Special Agent Brian Hoback. Fire scene documentation included measurements and photographs of the structure including the locations of the victims, responding apparatus, equipment, hose lines, and the structure contents.

During the origin and cause examination of the scene, investigators identified ignition sources, ignitable materials, fire loads, electrical system features, and obtained witness information. Scene examination included the excavation of debris revealing locations of processing equipment, storage materials, and electrical equipment. Contents were returned to pre-fire locations whenever possible. The scene was photographed throughout the examination and excavation process.

An Electrical Engineer with BATFE examined the electrical systems of the plant and identified the types of service provided including locations of load center panels, their post fire condition, and any current protection device positions. Arc melting and arcing through char of conductors locations provided information indicating direction of fire travel.

The locations where firefighters were rescued or recovered were examined and photographed showing orientation of the firefighters in the rooms with the equipment. Personal protective equipment, hose line locations, firefighting tools, and equipment were photographed in their recovered positions whenever possible.

### Discovery and Report of Fire

Eighteen employees were working in the egg processing room at the time of the fire's discovery. Most employees were completing egg processing while others were cleaning the equipment and processing room. One of the cleaning employees stated that she was in the egg processing room and walked through the double swinging doors of the southeast corner toward the air compressor switch along the west wall in the East Hallway to turn off the compressor. As she rounded the corner entering the East Hallway from Dry Storage 3 looking toward the north end she saw thick smoke in the area of the Boiler Room and Dry Storage 1. The smoke layer was within 3 feet of the floor at the Boiler Room and thick enough that she could not see to Dry Storage 2. She returned to the egg processing area and alerted the other employees. An employee at the north side of the processing room looked toward

the northeast corner leading to the dry-storage area and saw smoke moving into the processing room through the vinyl strip doorway. The employees moved to the main door at the southwest corner of the processing room to exit. Smoke was reportedly accumulating at the doorway before the last employee exited. As they gathered in the parking lot the call to 911 on a cell phone alerted authorities. Interviews conducted of the employees supported the initial report of the fire.

### Scene Examination

Photography of the scene documented the post-fire condition before excavation started. Excavation and examination of the fire scene continued for six days through Friday, July 9, 2010. Excavation and examination of the debris was accomplished using hand tools, shovels and sifting screens. No fuel-powered equipment was used inside the fire scene area. A 750-ton crane removed the metal roof panels and heavy structural members and placed them outside the scene.

The **business offices** at the southwest corner of the building were heavily damaged during the extinguishment and overhaul operations. The fire damage in this area was due to the extension of the fire through the processing room from the east. Heavy equipment was used to remove the walls to allow access to the fire by the aerial during fire ground operations.



### ***Business office building***

The **processing room** exhibited extensive fire damage including partial collapse of the roof and the south exterior wall. The south exterior wall collapsed inward toward the center of the building as the roof collapsed. The northeast corner extension into the area of the East Hallway and Dry Storage 3 exhibited the most fire damage of the processing room, consuming the wood framing and Hardy board wall. The remains of a 1.75 inch hose line were uncovered along the south wall of the processing room. The nozzle was found in a closed condition near the southeast corner just short of the swinging double doors leading to Dry Storage 3.



***Main egg processing room***

**Dry Storage 3** was severely fire damaged, causing the metal roof to collapse. The electrical service entrance to the building was at the west side of this area. The exterior walls partially collapsed. The west wall collapsed toward the west. The damage in Dry Storage 3 resulted when fire extended into the area and then burned unabated after rescue efforts halted and defensive tactics commenced. An opening cut into the west exterior wall near the north end indicated the location of rescue where Captain Cano was banging and kicking the wall. Outside the west wall was an ice machine and employee break area. Several items recovered from this location included Captain Cano's fire helmet,

visor, hood, gloves, SCBA face piece, and a fire damaged, gas powered chainsaw used to cut through the wall.



***Dry Storage 3 looking south from the swinging double doors of the processing room at the area where Captain Cano was rescued***

The **East Hallway** was severely fire damaged. The roof collapsed and separated from the top of the east wall and the CMU west wall supported the west roof edge. The CMU wall of the mechanics room partially collapsed toward the east onto the two air compressors and the south end of the conveyors. The remaining wall tilted toward the east, being held in place by the USDA office walls and the collapsed metal roof structure.

Pallets of foam egg cartons and cardboard boxes were consumed. All combustible structural materials were consumed.

Captain Araguz was recovered from beneath and between the conveyors approximately 40 feet from the south end of the East Hallway and 8 feet from the west wall.

**Dry Storage 2** was severely fire damaged, causing roof collapse. The pallets of cardboard boxes were consumed nearer the south end and more cardboard material survived nearer the north end. Pallets of stock at the north end continued to smolder and burn until completely exposed as the roof panels were removed and water was applied. The 4 inch x 4 inch wood support columns along the east side of Dry Storage 2 were consumed.

The electrical system main conductors fell to the floor and the PVC conduit and insulation of the conductors were consumed. The electrical conductors above the south end exhibited melting and bubbling on the conductors.



***Dry Storage 2 with the processing room extension on the lower left and Dry Storage 1 on the right***

**Dry Storage 1** was severely fire damaged, causing the roof to collapse. Witness information from employees at the plant and first responding firefighters provided information indicating the area of fire involvement. Firefighters stated that the fire was showing through the roof near the south end of Dry Storage 1 when they arrived.



***Dry Storage 1 south end showing damage to the metal roof panels and the metal support columns***

The two rows of metal support columns inside the storage room were severely damaged. The west row of supports nearly folded at their base and tilted toward the east. The south end of the west row of support columns twisted and tilted to the east more than the north end. The east row of support columns tilted inward toward the west. The east columns did not exhibit as severe a tilt as the west row of columns. The panels of metal roof were more damaged toward the south end of the space. The pallets of stock were consumed.

The fluorescent light fixtures were examined, revealing a loss of mass to the north end of the metal housing of the southernmost fixture. Conductors inside PVC conduit connected to the fixture through the north end. Whether mechanical damage to the light fixture or conduit occurred, or from the natural vibrations of the building, the insulation of the conductors was damaged, allowing contact or intermittent contact with the metal housing. Arcing across a small gap resulted in a resistive heating condition and loss of mass of material occurred over an undetermined length of time while eventually heating the supporting wood rafter to ignition temperature. The resulting combustion of the rafter resulted in burning embers that dropped down and ignited the shrink-wrapped egg crates stored below.



*End cap of fluorescent light fixture showing loss of material at contact point with conductors*

This fire cause is determined to be **ACCIDENTAL**.

# Fire Ground Operations and Tactics

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*Note: The following sequence of events was developed from radio transmissions and firefighter witness statements. Those events with known times are identified. Events without known times are approximated in the sequence of the events based on firefighter statements regarding their actions and/or observations. A detailed timeline of radio transmissions is included in the appendix.*

On July 3, 2010, at **21:41:10**, Wharton County Sheriff's Office 911 received a report of a fire at the Maxim Egg Farm located on County Road 442, south of the city of Boling, Texas. The caller, immediately transferred to the Wharton Police Department Dispatch, advised there was a "big fire" in the warehouse where egg cartons were stored. Boling Volunteer Fire Department was dispatched and immediately requested aid from the Wharton Volunteer Fire Department. Wharton VFD became Command as is the usual practice for this county.

Wharton Assistant Chief Stewart (1102) was returning to the station having been out on a response to a vehicle accident assisting the Boling Volunteer Fire Department when the call came in for the fire. He responded immediately and at **21:50** reported seeing "heavy fire" coming from the roof at the northeast corner of the building as he approached the plant from the east on County Road 442. When he arrived he was eventually directed to the east side of the building (D side) to the rear loading dock. Asst. Chief Stewart worked for several minutes with facility employees to gain access to the fire building before being led to the northeast loading dock. An employee directed him on the narrow caliche drive behind the layer barns and between the waste ponds to the loading dock. Wharton Engine 1134 followed 1102 to the east side and backed into the drive leading to the loading dock. Asst. Chief Stewart's immediate actions included assessing the extent of the fire on the interior of the building by looking through the doors at the loading dock to Dry Storage 1. Unable to see the fire through the smoke at the doors of the loading dock, an attack was eventually accomplished by removing a metal panel from the east exterior wall of Dry Storage 1 and using one 1 $\frac{3}{4}$ "-inch cross lay. After a few minutes, the deck gun on Engine 1134 was utilized, directing water to the roof above the seat of the fire near the south end of Dry Storage 1.

Water supply became an immediate concern and 1102 made efforts to get resources for resupply. Requests for mutual aid to provide water tankers were made to area communities. During the incident, re-supplying tankers included a gravity re-fill from the on-site water supply storage tanks and from fire hydrants in the City of Boling, 3 miles from the scene and the City of Wharton, nearly 11 miles. The City of Boling water tower was nearly emptied during the incident.

The radio recording indicates there were difficulties accessing the location of the fire as apparatus were led around the complex by multiple employees. Heavy rains during the previous week left many roadways muddy and partially covered with water, which added to problems with apparatus access. In addition, fire crews were not familiar with the layout of the facility and there are no records of pre-fire plans. Asst. Chief Stewart worked for several minutes with facility employees to gain access to the fire building before being led to the northeast loading dock.

Wharton Fire Chief Bobby Barnett (1101) arrived on scene at **21:56:14**, and ordered incoming apparatus to stage until he could establish an area of operations at the front, south side of the plant (A side). Chief Barnett directed Engine 1130 to position approximately 50 feet from the front main entrance of the plant. At **22:09:16**, Chief Barnett (1101) established a command post on A side and became the Incident Commander; 1101 directed radio communications for the fireground to be TAC 2 and called for mutual aid from the Hungerford and El Campo Fire Departments. Chief Barnett described the conditions on side A as smoky with no fire showing. Light winds were from the east, side D, pushing the smoke toward the area of the processing room, and the front, side A, of the building.

Maxim Egg Farm Manager David Copeland, a former Wharton VFD Chief, advised Command and firefighters that the fire was in the area of the Boiler Room and should be accessed by breaching an exterior wall in the employee break area. Chief Barnett ordered Wharton crews to the breach attempt. Captain Thomas Araguz III, Captain John Cano and Firefighter Paul Maldonado were involved with this operation. The crews working in this area were in full structural personnel protective clothing and SCBA.

At **22:10**, Command ordered Engine 1130 and Tanker 1160 to set up at the front entrance using Tanker 1160 for portable dump tank operations for water re-supply.



On D side, difficulty accessing the fire from the exterior of the building was reported by Asst. Chief Stewart and the crews. Heavy doors, locked loading dock doors and steel exterior paneling, required the crews to spend extra time forcing entry.

At **22:17:23**, Wharton County Chief Deputy Bill Copeland (3122), once a Wharton FD volunteer firefighter, notified Command that the fire was now through the roof over Dry Storage 1.

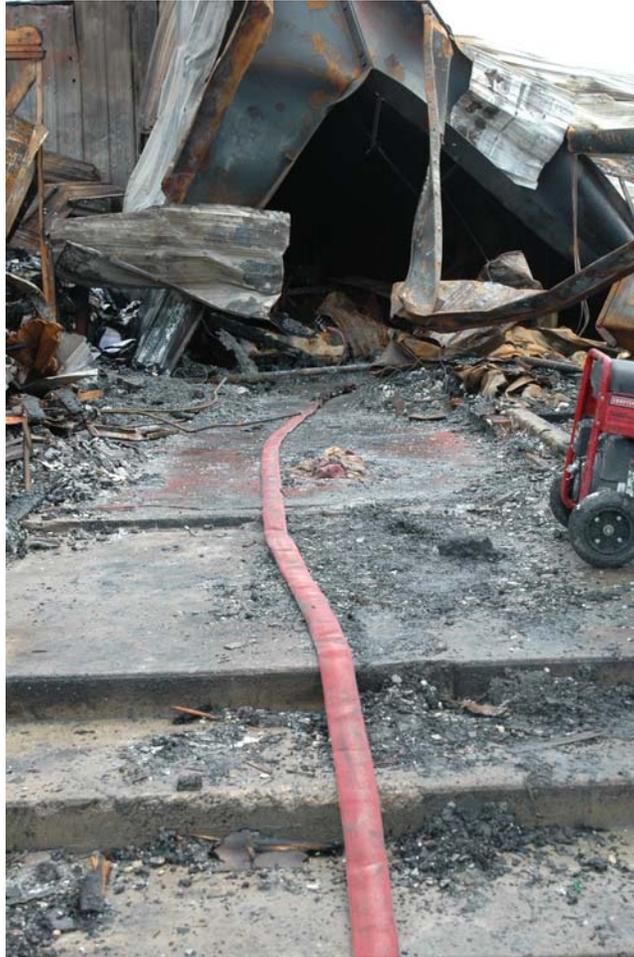
Chief Barnett noticed smoke conditions improving at the main plant doorway and ordered crews to advance lines into the processor room. Chief Barnett stated he assigned Captain Araguz, Captain Cano and Firefighter Maldonado because they were the most experienced and senior crews available.

Positive Pressure Ventilation (PPV) was in place at the main entry door when Captain Cano, Captain Araguz and Firefighter Maldonado entered the structure into the processing room. There are no radio transmissions to verify exact entry times. Captain Cano stated that an employee had to assist fire crews with entry into the main plant through a door with keypad access. Captain Cano reported

the door to processing was held open by a three-ring binder that he jammed under the door after entry. Cano stated there was low visibility and moderate heat overhead. Captain Cano and Captain Araguz made entry on a right-hand wall working their way around numerous obstacles. The line was not yet charged and they returned to the doorway and waited for water. Wharton Engine 1130's driver reported in his interview that he had difficulty establishing a draft from the portable tank later determined to be a linkage failure on the priming pump. 1160 connected directly to 1130 and drafted from the folding tank.

As the crew entered into the structure through the main entry door, several plant employees began entering into the administration offices through the area of the main entry door to remove files and records. This was reported to Command at **22:23** and after several minutes Chief Barnett ordered employees to stay out of the building and requested assistance from the Sheriff's Office to maintain scene security.

At **22:31**, once the line was charged, the two captains continued into the processor on the right wall leaving Maldonado at the doorway to feed hose. Captain Cano was first with the nozzle and described making it 20 feet into the building. Cano states in his interview that he advised Command over the radio that there was high heat and low visibility, although the transmission is not recorded. Cano also reported in his interview, he could not walk through the area and had to use a modified duck walk. Cano projected short streams of water towards the ceiling in a "pencil" motion and noted no change in heat or smoke conditions. They advanced until the heat became too great and they retreated towards the center of the processor. Cano stated that they discussed their next tactic and decided to try a left-handed advance.



***1130 hose-line up steps into processing room entry door***

At **22:33**, Chief Barnett advised, *“advancing hose streams in main building to try to block it.”*

Captain Araguz took the nozzle and Captain Cano advanced with him holding onto Araguz’ bunker gear. The crew advanced along the south wall of the processing room toward the double doors to Dry Storage 3 and lost contact with the hose line. The investigation found the couplings between the first and second sections of the hose lodged against a threaded floor anchor (see photo) preventing further advancement of the line. How the team lost the hose line remains uncertain.



***This hose coupling is lodged against a floor bolt***

Captain Cano stated in his interview that Captain Araguz told him to call a Mayday. Captain Cano stated that he was at first confused by the request, but after some time it became apparent they lost the hose line. Captain Cano reported calling Mayday on the radio but never received a reply. Captain Cano now believes he may have inadvertently switched channels at his previous transmission reporting interior conditions. Captain Araguz had a radio but it was too damaged to determine operability. There are no recorded transmissions from Captain Araguz.

At **22:37**, Deputy Chief Copeland advised Command that the fire had breached a brick wall and was entering the main packing plant. Command responded that there was a hose team inside.

At **22:42:50**, Command radioed *“Command to hose team 1, Cano.”* This was the first of several attempts to contact Captain Cano and Captain Araguz. At **22:47:17**, Command ordered Engine 1130 to sound the evacuation horn. At **22:50:44**, Command announced Mayday over the radio, stating *“unlocated fireman in the building.”*

Captain Cano stated in his interview that they made several large circles in an attempt to locate the fire hose. Cano became entangled in wiring, requiring him to doff his SCBA. After re-donning his SCBA, Captain Cano noted he lost his radio, but found a flash light. He remembered that his low air warning was sounding as he and Araguz searched for the hose. Cano stated that they made it to an exterior wall and decided to attempt to breach the wall. Working in near zero visibility, Captain Cano reported losing contact with Captain Araguz while working on breaching the wall. Shortly after he lost contact, Captain Cano ran out of air and removed his mask. Captain Cano continued working to breach the exterior wall until he was exhausted.



***North end of Dry Storage 3 where Captain Cano was rescued***

At **22:54**, crews working on the exterior of the building near the employee break area reported hearing tapping on the wall in the area of the employee break room. Crews mustered tools and began to cut additional holes through the building exterior. After making two openings, Captain Cano was located

and removed from the building. Captain Cano reported that Captain Araguz was approximately 15 feet inside of the building ahead of him. Firefighters made entry through the exterior hole but were unsuccessful in locating Captain Araguz. Cano was escorted to the folding water tank and got into the tank to cool down.

Rapid Intervention Crews (RIC) were established using mutual aid members from the Hungerford and El Campo Fire Departments. The first entry made was at the main entry door where Firefighter Maldonado was located. Maldonado was relieved and escorted to the ambulance for rehab. An evacuation horn sounded and the first RIC abandoned the interior search and exited the building.

A rescue entry by a second RIC was through the breached wall of Dry Storage 3. After several minutes inside, the evacuation signal sounded due to the rapidly spreading fire and deteriorating conditions. Two additional RICs entered the structure through the loading dock doors of Dry Storage 3. Chief Barnett states that there were a total of four RICs that made entry after the Mayday. After approximately 45 minutes, all rescue attempts ceased.

As the fire extended south toward Dry Storage 3, smoke conditions became so debilitating that Chief Barnett ordered all crews staged near the front of the building on side A to move back and apparatus to relocate. Command assigned Chief Hafer of the Richmond Fire Department to "A" side operations and defensive operations were established. Captain Cano and Firefighter Maldonado were transported to Gulf Coast Medical Center and treated for smoke inhalation.

Fire ground operations continued through the night. Captain Araguz was recovered at approximately **07:40 AM**. Command transferred to the Richmond Fire Department Chief Hafer at approximately **07:56 AM** as 1101 and the Wharton units escorted Captain Araguz from the scene. All Wharton units cleared the scene at **08:02 AM**.

Captain Araguz was transported to the Travis County Medical Examiner's Office for autopsy. The Travis County Medical Examiner's Office performed post mortem examinations on July 4, 2010. Captain Araguz died from thermal injuries and smoke inhalation.

# Personal Protective Equipment Evaluation

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*The Texas Commission on Fire Protection (TCFP) was contacted and requested to conduct an evaluation of the firefighter's personal protective equipment (PPE) for performance. Volunteer Fire Departments in the State of Texas are not required to meet performance and compliance rules of the TCFP and the adopted National Fire Protection Association (NFPA) standards. Although findings from the medical examiner's report and the on-scene investigation are undetermined as to any contributing factor the PPE had in the fatalities, its condition was documented.*

PPE was evaluated by TCFP Compliance Officer Edward Russell for compliance with Texas Administrative Code Title 37, Part 13, Chapters 435.1, *Protective Clothing* and 435.3, *Self-Contained Breathing Apparatus*, and NFPA standards adopted by TCFP. Photographs taken during the examination are on file at the Texas Commission on Fire Protection. The TCFP reports are located in the reference materials of the SFMO investigation file.

The examination of the protective equipment took place at the Texas State Fire Marshal's Office Arson Laboratory in Austin, Texas. The gear was secured in an evidence locker maintained by the Lab.

## **Captain Araguz**

Captain Araguz had the full complement of personal protective equipment issued by the Wharton Volunteer Fire Department. All equipment met or exceeded the current TCFP adopted standards enforced on career departments. Records from the Wharton Fire Department provide the manufacture information. Post-fire condition is noted if the equipment was identifiable during the inspection.

The helmet is a Morning Pride brand issued January 2010. The helmet exhibited severe damage from exposure to the fire. TCFP determined that this helmet met requirements of the National Fire Protection Association Standard 1971-2000 edition.

The hood is an American Firewear issued in April 2008. The hood was not available for inspection by TCFP. The hood was shown in the photographs during the examination by the Medical Examiner.

The turnout coat and turnout pants were Globe, model GXTREME, manufactured in October 2006 and issued in November 2006. They exhibited severe damage due to heat and flame exposure. The charring of the coat extended through the outer shell, through the moisture barrier and into the

thermal barrier. The pants exhibited charring that extended through the outer shell, through the moisture barrier, and into the thermal layer. The coat and pants met the requirements of NFPA 1971-2000 edition.

The gloves are Fire-Dex brand manufactured in June 2002 and were not identified during inspection. Records from the Wharton Fire Department indicate the gloves met the requirements of NFPA1971-2001 edition.

The footwear is Weinbrenner Model 804-6369 Leather boots manufactured in August 2009 and issued in December 2009. They are severely fire damaged from exposure to the fire.

The Self-Contained Breathing Apparatus (SCBA) is a Scott Air-Pak 4.5. Captain Araguz was wearing the SCBA at the time he was found. The face piece was not intact and is not serviceable. There was heavy charring and melting of the entire unit. The cylinder showed severe thermal damage with melting to the cylinder shell. The back frame and harness assembly exhibited severe heat and thermal damage. Records indicate the unit passed the last full function annual inspection performed June 9, 2009. The last breathing air test was performed April 23, 2010.

The Personal Alert Safety System (PASS) exhibited thermal damage with heavy charring. It was no longer serviceable. It was not reported to be working when the firefighter was found and recovered.

## Findings and Recommendations

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*Recommendations are based upon nationally recognized consensus standards and safety practices for the fire service. All fire department personnel should know and understand nationally recognized consensus standards, and all fire departments should create and maintain SOGs and SOPs to ensure effective, efficient, and safe firefighting operations.*

There were several factors that, when combined, may have contributed to the death of Captain Araguz. It is important that we honor him by learning from the incident.

Water supply became an immediate concern. Although there are two water storage tanks on the facility with the combined capacity of nearly 44,000 gallons, refilling operations to tankers were slow, accomplished by gravity fill through a 5-inch connection. A fire department connection attached to the plant's main water supply pump and plant personnel familiar with the system could have sped up the refilling process at the plant. Most tankers were sent to hydrants in the City of Boling 3 miles away, which in turn quickly depleted the city water supply. Other tanker refilling was accomplished at hydrants on the City of Wharton water system, as far as 15 miles away.

Fire protection systems are not required by *National Fire Protection Association (NFPA) Standard 101, Life Safety Code, 2009 Edition* for this classification of facility. Fire sprinkler and smoke control systems may have contained the fire to one area, preventing the spread of fire throughout the plant.

Findings and recommendations from this investigation include:

### **FINDING 1**

***There were no lives to save in the building. An inadequate water supply, lack of fire protection systems in the structure to assist in controlling the spread of the smoke and fire, and the heavy fire near the windward side facilitated smoke and fire spread further into the interior and toward "A" side operations. Along with the size of the building, the large fuel load, and the time period from fire discovery, interior firefighters were at increased risk.***

**Recommendation:** Fire departments should develop Standard Operating Guidelines and conduct training involving risk management and risk benefit analysis during an incident according to Incident Management principles required by NFPA 1500 and 1561.

*The concept of risk management shall be utilized on the basis of the following principles:*

- (a) Activities that present a significant risk to the safety of personnel shall be limited to situations where there is a potential to save endangered lives.*

- (b) Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of personnel, and actions shall be taken to reduce or avoid these risks.*
  - (c) No risk to the safety of personnel shall be acceptable where there is no possibility to save lives or property.*
  - (d) In situations where the risk to fire department members is excessive, activities shall be limited to defensive operations.*
- NFPA 1500 Chapter 8, 8.3.2*

*NFPA 1500 'Standard on Fire Department Occupational Safety and Health Program', 2007 ed., and NFPA 1561 'Standard on Emergency Services Incident Management System', 2008 ed. Texas Commission on Fire Protection Standards Manual, Chapter 435, Section 435.15*

- (b) The Standard operating procedure shall:*
  - (1) Specify an adequate number of personnel to safely conduct emergency scene operations;*
  - (2) limit operations to those that can be safely performed by personnel at the scene;*

## **FINDING 2**

***Initial crews failed to perform a 360-degree scene size-up and did not secure the utilities before operations began.***

**Recommendation:** Fire departments should develop Standard Operating Guidelines that require crews to perform a complete scene size-up before beginning operations. A thorough size up will provide a good base for deciding tactics and operations. It provides the IC and on-scene personnel with a general understanding of fire conditions, building construction, and other special considerations such as weather, utilities, and exposures. Without a complete and accurate scene size-up, departments will have difficulty coordinating firefighting efforts.

*Fireground Support Operations 1<sup>st</sup> Edition, IFSTA, Chapter 10*  
*Fundamentals of Firefighting Skills, NFPA/IAFC, 2004, Chapter 2*

## **FINDING 3**

**The Incident Commander failed to maintain an adequate span of control for the type of incident. Safety, personnel accountability, staging of resources, and firefighting operations require additional supervision for the scope of incident. Radio recordings and interview statements indicate the IC performing several functions including: Command, Safety, Staging, Division A Operations, Interior Operations and Scene Security.**

**Recommendation:** Incident Commanders should maintain an appropriate span of control and assign additional personnel to the command structure as needed. Supervisors must be able to adequately supervise and control their subordinates, as well as communicate with and manage all resources under their supervision. In ICS, the span of control of any individual with incident management supervisory responsibility should range from three to seven subordinates, with five being

optimal. The type of incident, nature of the tasks, hazards and safety factors, and distances between personnel and resources all influence span-of-control considerations.

*U.S. Department of Homeland Security - Federal Emergency Management Agency Incident Command Systems <http://www.fema.gov/emergency/nims/ICSpopup.htm#item5>  
NFPA 1500 Standard on Fire Department Occupational Safety and Health Program, Chapter 8, 2007 ed.*

#### **FINDING 4**

***The interior fire team advanced into the building prior to the establishment of a rapid intervention crew (RIC).***

**Recommendation:** Fire Departments should develop written procedures that comply with the **Occupational Safety and Health Administration's Final Rule, 29 CFR Section 1910.134 (g) (4)** requiring at least two fire protection personnel to remain located outside the IDLH (Immediate Danger to Life or Health) atmosphere to perform rescue of the fire protection personnel inside the IDLH atmosphere. One of the outside fire protection personnel must actively monitor the status of the inside fire protection personnel and not be assigned other duties.

**NFPA 1500 8.8.7** At least one dedicated RIC shall be standing by with equipment to provide for the rescue of members that are performing special operations or for members that are in positions that present an immediate danger of injury in the event of equipment failure or collapse.

*U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134 (g) (4); Texas Commission on Fire Protection Standards §435.17 - Procedures for Interior Structure Fire Fighting (2-in/2-out rule)  
NFPA 1500 Standard on Fire Department Occupational Safety and Health Program, Chapter 8, 2007 ed.  
NFPA 1720 Standard on Organization and Deployment Fire Suppression Operations by Volunteer Fire Departments, 2004 ed.*

#### **FINDING 5**

**The interior team and Incident Commander did not verify the correct operation of communications equipment before entering the IDLH atmosphere and subsequently did not maintain communications between the interior crew and Command. Although Chief Barnett stated he communicated with Captain Cano, there was no contact with Captain Araguz.**

**Recommendation:** Fire Departments should develop written policies requiring the verification of the correct operations of communications equipment of each firefighter before crews enter an IDLH atmosphere. Fire Departments should also include training for their members on the operation of communications equipment in zero visibility conditions.

U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134(g)(3)(ii)  
NFPA 1500 Standard on Fire Department Occupational Safety and Health Program, Chapter 8, 2007 ed.

### **FINDING 6**

**The interior operating crew did not practice effective air management techniques for the size and complexity of the structure. Interviews indicate the crew expended breathing air while attempting to breach an exterior wall for approximately 10 minutes, then advanced a hose line into a 15,000 square foot room without monitoring their air supply. During interviews Captain Cano estimated his consumption limit at 15 – 20 minutes on a 45 minute SCBA.**

**Recommendation:** Crews operating in IDLH atmospheres must monitor their air consumption rates and allot for sufficient evacuation time. Known as the point of no return, it is that time at which the remaining operation time of the SCBA is equal to the time necessary to return safely to a non-hazardous atmosphere. The three basic elements to effective air management are:

- Know your point of no return (beyond 50 percent of the air supply of the team member with the lowest gauge reading).
- Know how much air you have at all times.
- Make a conscious decision to stay or leave when your air is down to 50 percent.

*IFSTA [2008]. Essentials of Fire Fighting and Fire Department Operations, 5th ed., Chapter 5, Air Management, page 189*  
*Fundamentals of Firefighter Skills, 2<sup>nd</sup> edition, NFPA and International Association of Fire Chiefs, Chapter 17, Fire Fighter Survival.*

### **Finding 7**

**Captains Araguz and Cano became separated from their hoseline. While it is unclear as to the reason they became separated from the hose line, interviews with Captain Cano indicate that while he was finding an exterior wall and took actions to alert the exterior by banging and kicking the wall, he lost contact with Captain Araguz.**

***\*\*Captain Cano credits his survival to the actions he learned from recent Mayday, Firefighter Safety training.***

**Recommendation:** Maintaining contact with the hose line is critical. Losing contact with the hose line meant leaving the only lifeline and pathway to safety. Team integrity provides an increased chance for survival. All firefighters should become familiar with and receive training on techniques for survival and self rescue.

*United States Fire Administration's National Fire Academy training course "Firefighter Safety: Calling the Mayday"*  
*Fundamentals of Firefighter Skills, 2<sup>nd</sup> edition, NFPA and International Association of Fire Chiefs,*  
*Chapter 17, Fire Fighter Survival.*

# APPENDIX

## ***TIMELINE OF EVENTS***

**21:41:10** Wharton County 911 operators received a report of a fire at the Maxim Egg Farm.

**21:41:10** Wharton County 911 transferred the call to the Wharton Police Department.

**21:42:42** Wharton and Boling Fire Department paged.

**21:43:42** Wharton Engine 1134, Rescue 1150 and Command 1102 responded.

**21:47:05** Wharton Fire Chief Bobby Barnett responded from his residence in Command 1101.

**21:50:16** Wharton Tanker 1160 responded.

**21:50:39** Asst. Chief Stewart in Command 1102 reported “coming around the corner by the egg farm right now, I've got heavy fire coming ... looks like from the very back.”

**21:51:06** Command 1102 was the first apparatus on scene.

**21:56:14** 1101 on location.

**22:04:25** Chief Barnett ordered Rescue 1130 and Tanker 1160 to stage at the entrance to the plant.

**22:08:03** Chief Barnett requested mutual aid from Hungerford Fire Department and El Campo Fire Departments.

**22:09:16** Wharton Chief Bobby Barnett established a command post in the main parking lot of the plant.

**22:10:39** Command ordered Engine 1130 and Tender 1160 to set up at the front entrance (side A) for operations. Tanker 1160 would set up drop tank operations for water supply.

**22:11:50** Wharton County Chief Deputy Sheriff Bill Copeland asked if they needed to cut off propane tanks feeding the Boiler Room – due to electrical system complexity, power was not completely disconnected to building – and there was the possibility of millions of dead chickens).

**22:14:17** Brush 1170 on location (Maldonado). Maldonado stated he assisted with the exterior wall breach attempt for several minutes before being ordered to assist with interior entry.

**22:17:23** Fire reported through the roof on the back side by Chief Copeland; difficulty removing metal exterior to access the fire.

**22:18:26** Command requested mutual aid from Bay City for water supply.

**22:19:03** Chief Bill Copeland notified Command -- pulling 1.75 inch line on side D before they opened up back wall for protection. Needed a drop tank to setup water supply. When the line is charged they were going to start taking down the back wall.

**22:20:12** 1.75 inch line in operation, sector D.

**22:20:32** Bay City FD en route.

**22:21:42** Chief Copeland advised major fire inside of building and 1134 had gained access through the back wall (D side).

**22:23:41** Reports of employees entering the building on side A from Command Post Tech (1582).

**22:24:41** Chief Copeland advised to have Deputies keep everyone out of building. Command Post Technician Celadon said there were no Deputies in the area, Chief Copeland called Wharton PD and asked them to call Wharton Sheriff's Office and get some Deputies to Maxim.

**22:31:50** Tanker 1160 reported Engine 1130 had fixed draft issue, water coming.

**22:32:32** Command advised, need all arriving units to report main parking lot for manpower.

**22:33:08** Chief Barnett: "advancing hose streams main building to try to block it."

**22:37:07** Chief Copeland advised: breached a hole in the brick wall (D side) and the fire was entering the main packing plant. Chief Barnett replied he had a hose team inside.

**22:42:50** Command called "Command to hose team 1, Cano."

**22:43:08** Command called "Command to hose team 1, Cano."

**22:44:43** Command called "Command to fire team 1, Cano come up."

**22:45:38** Command cleared channel "All units hold traffic at this time, all units hold traffic."

**22:46:11** Command called "Command to fire team 1, Cano come up."

**22:46:51** Command called Command to hose team 1, come up."

**22:47:17** Command called Engine 1130 and ordered an evacuation signal (via air horn).

**22:48:16** Command called "Command to fire team 1 Captain Cano, Captain Araguz come in."

**22:49:08** Command called "Command to any teams inside the main structure have you located the fire team?"

**22:50:44** Command called Mayday, moved traffic to TAC 3, and reported "unlocated firemen in building ... all firemen exit the building at this time."

**22:51:15** Command called "Command to Fire team 1, Captain Cano, Captain Araguz come in."

**22:51:55** Command called "Fire team 1, Command fire team 1."

**22:53:02** Command called "Command to Captain Cano, Captain Araguz come up."

**22:53:35** Command called "Command to Captain Cano, Captain Araguz."

**22:54:06** Report from unknown firefighter who heard tapping on the south wall. Command called "Can you beat back on the wall?"

**22:55:37** Command advised "Command to hose team 1 Captain Cano, Captain Araguz set off your pass devices, have teams coming."

**22:56:23** Chief Copeland (D side) called to Engine 1134 “bring everybody over here that’s got some hand tools we are going to try to break through this wall back here.”

**22:56:39** Command called “Command to hose team 1, Captain Cano, Captain Araguz, come in.”

**22:56:57** Command called “Command to 1502 (1502 go ahead) if you have enough personnel I would like to send a rescue team in the front door. (1502) We have a lot of manpower over here working on this wall ... trying to tear it down right now.”

**22:57:22** “Command to all units has anyone located Maldonado (static) (1502) “we got one we drug out, we got one we drug out ... get an ambulance.”

**22:58:01** Command to 1502 “do we have accountability on all three firemen, Cano, Maldonado and Araguz?”

**22:58:13** 1502 advised, cutting second hole where they believed Araguz was.

**22:59:51** Command called Wharton PD for a second ambulance.

**23:00:20** Command cleared TAC 2 a second time due to radio traffic from arriving mutual aid.

**23:01:13** Command called for additional personnel with air packs to report to command.

**23:01:20** Rescue Operations conversed with Command.

**23:01:37** Command requested additional personnel on scene to report to Command with air packs.

**23:02:53** Command advised “clear channel for emergency traffic only. Everybody copy.”

**23:07:08** Boling Asst. Chief Bobby Villasana (1502) advised, no rescue entry had been made, waiting on the line to be charged.

**23:09:26** Command requested additional personnel on scene to report to Command with air packs (from 1102 at D side).

**23:10:05** Command requested Rosenberg Fire Dept for manpower and ladder truck.

**23:10:27** Chief Stewart called Wharton PD requesting Richmond with their Tower.

**23:10:35** Rescue teams tried to make entry.

**23:12** Chief Bobby Villasana asked Command “how bad is the roof, there is a lot of popping up there, does he want rescue crews to enter.” Command advised he could not see anything due to the smoke.

**23:12:57** Command advised to make sure rescue teams check their radios before they went in.

**23:14:36** Command ordered rescue to move to a door by the loading dock and try to make entry there.

**23:15:23** Rescue crew advised they heard something, additional personnel being sent in.

**23:16:51** Smoke conditions worsened and crews were having difficulty breathing; Command advised he was moving the command post up the road so he could breathe; Chief Bobby Villasana advised he still had Rescue 1 guys inside.

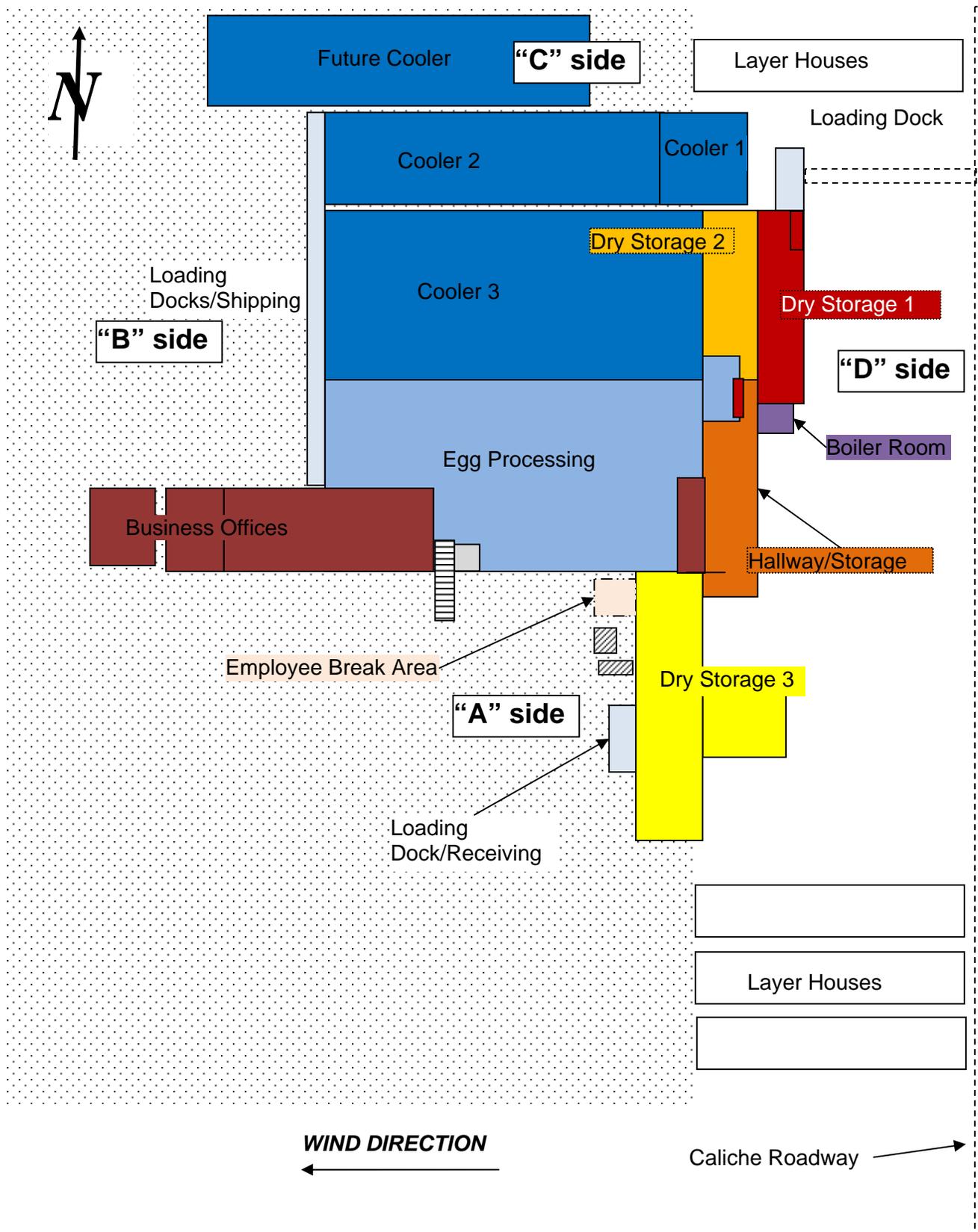
**23:23:43** Command to all units: evacuate the building, air horn sounded; command post/apparatus being relocated due to heavy smoke.

**23:25:37** 1208 advised all rescue teams had evacuated.

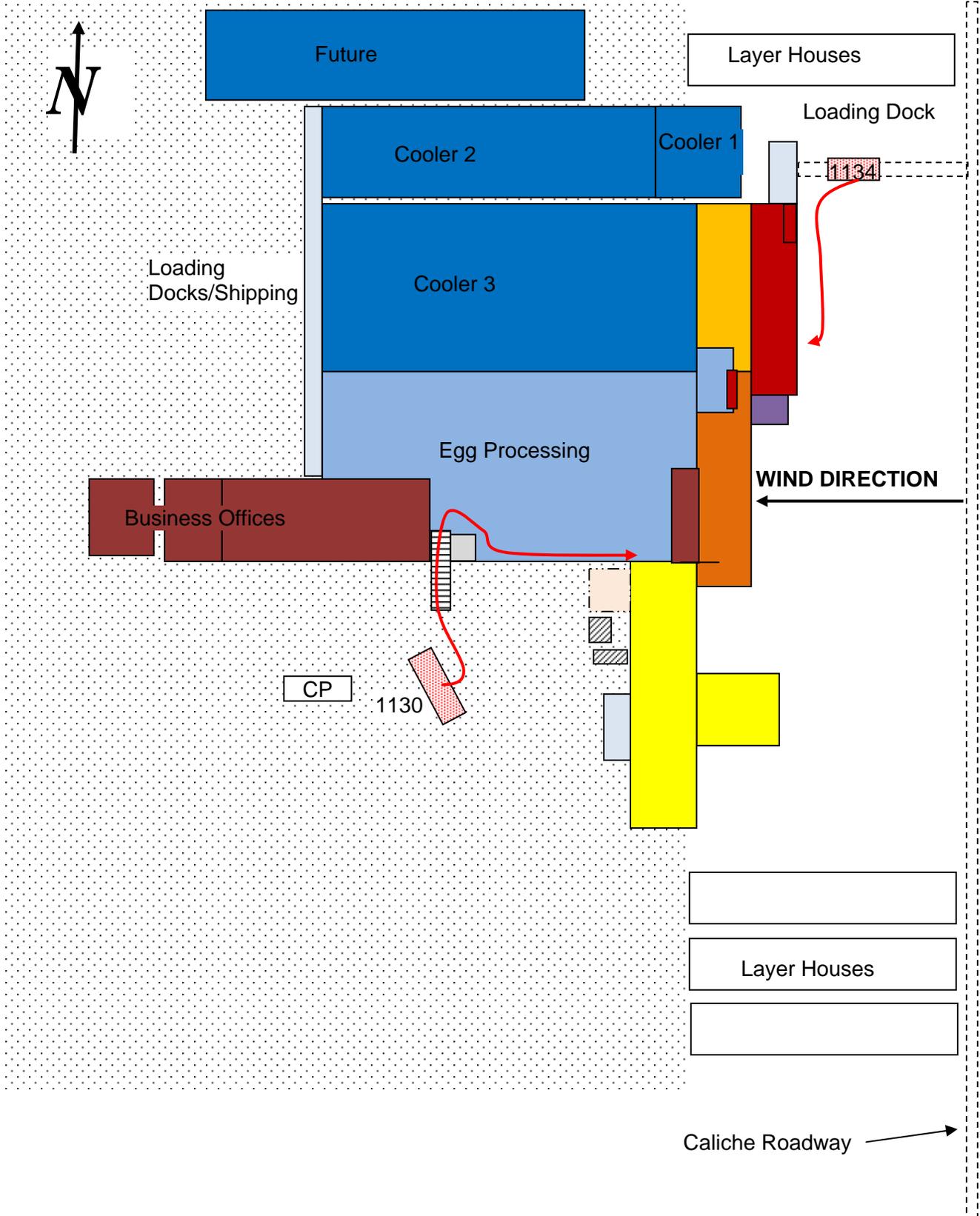
Defensive measures continued through the night.

# DIAGRAMS

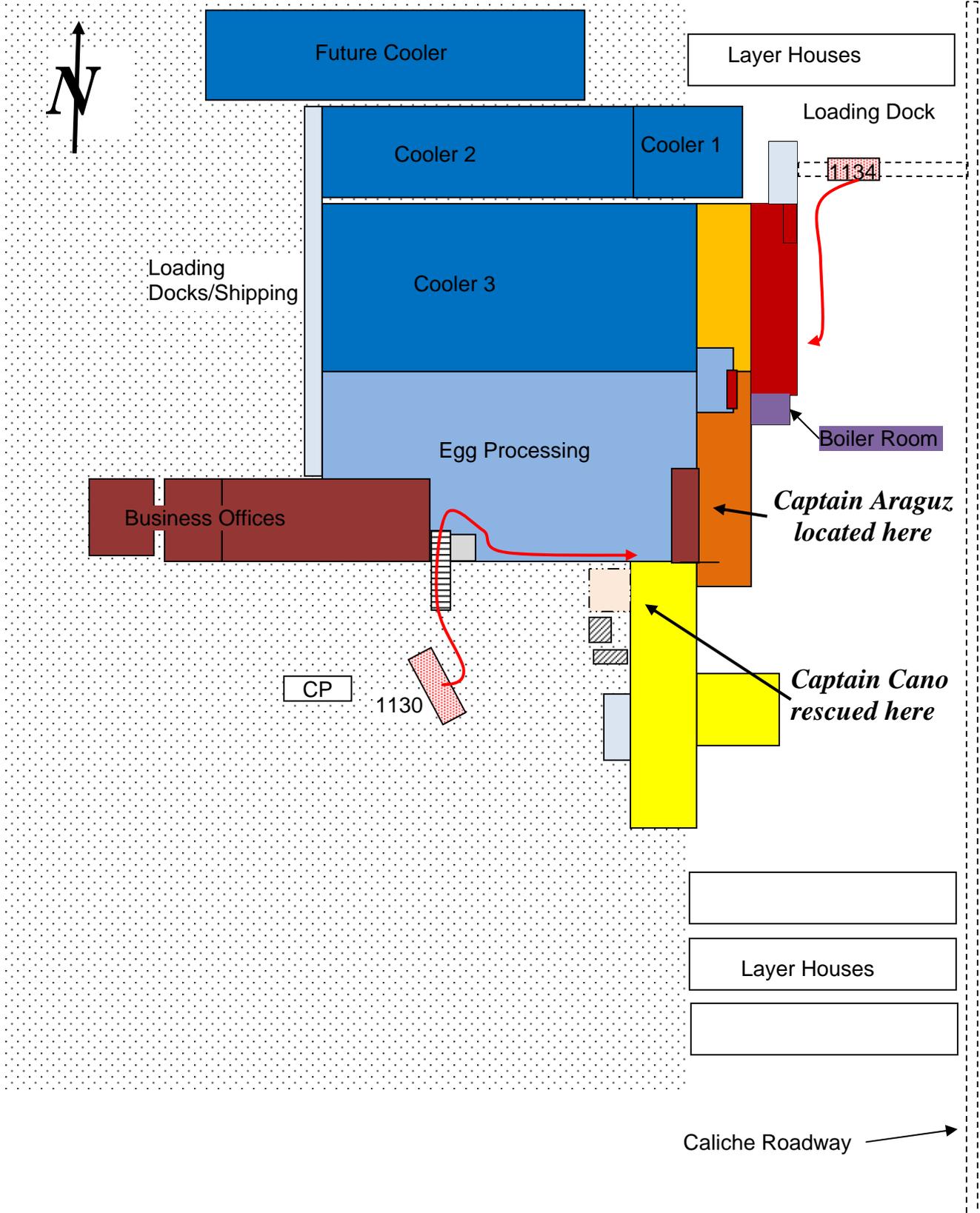
Diagram 1  
Site Plan

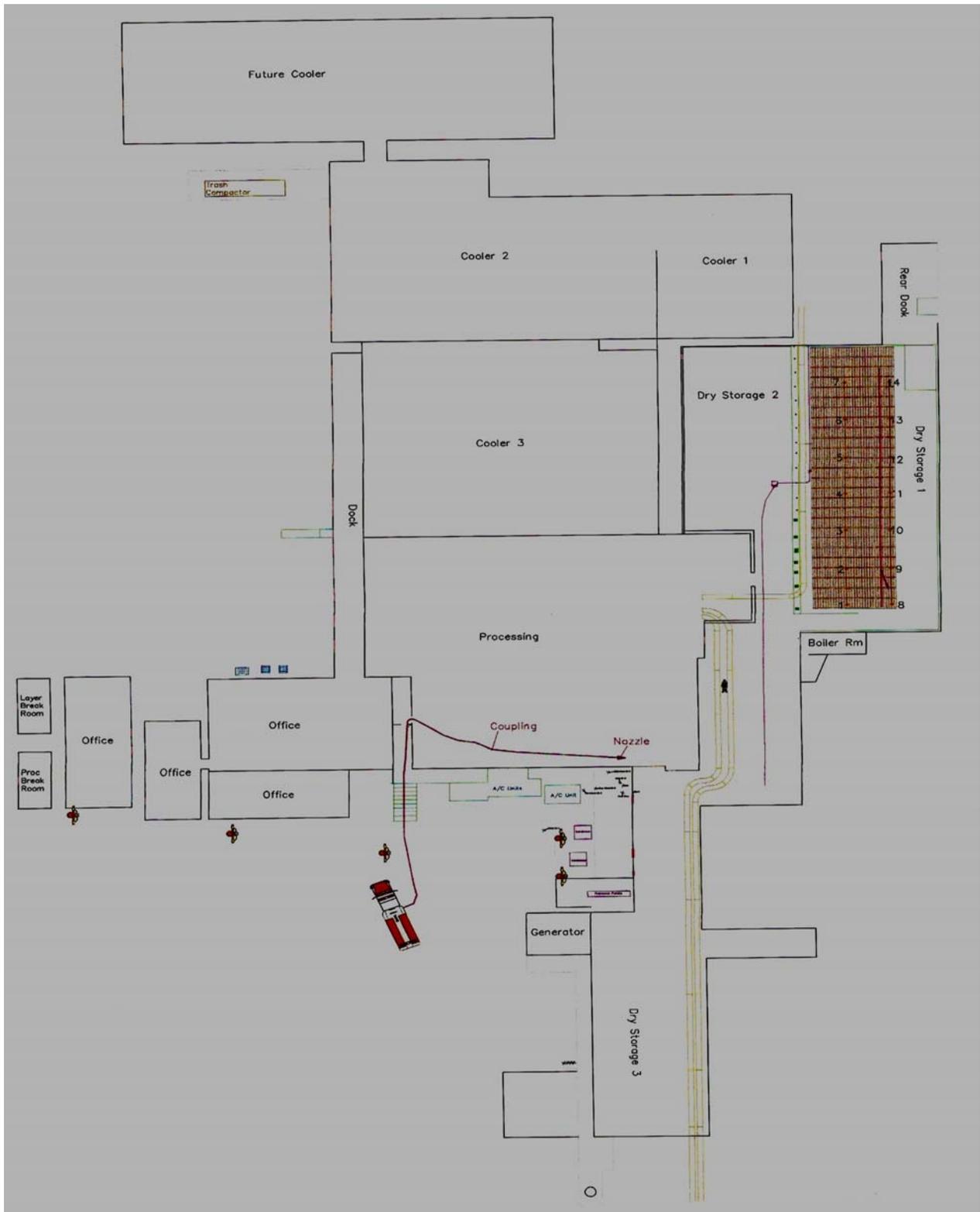


**Diagram 2**  
**Initial Apparatus Locations**

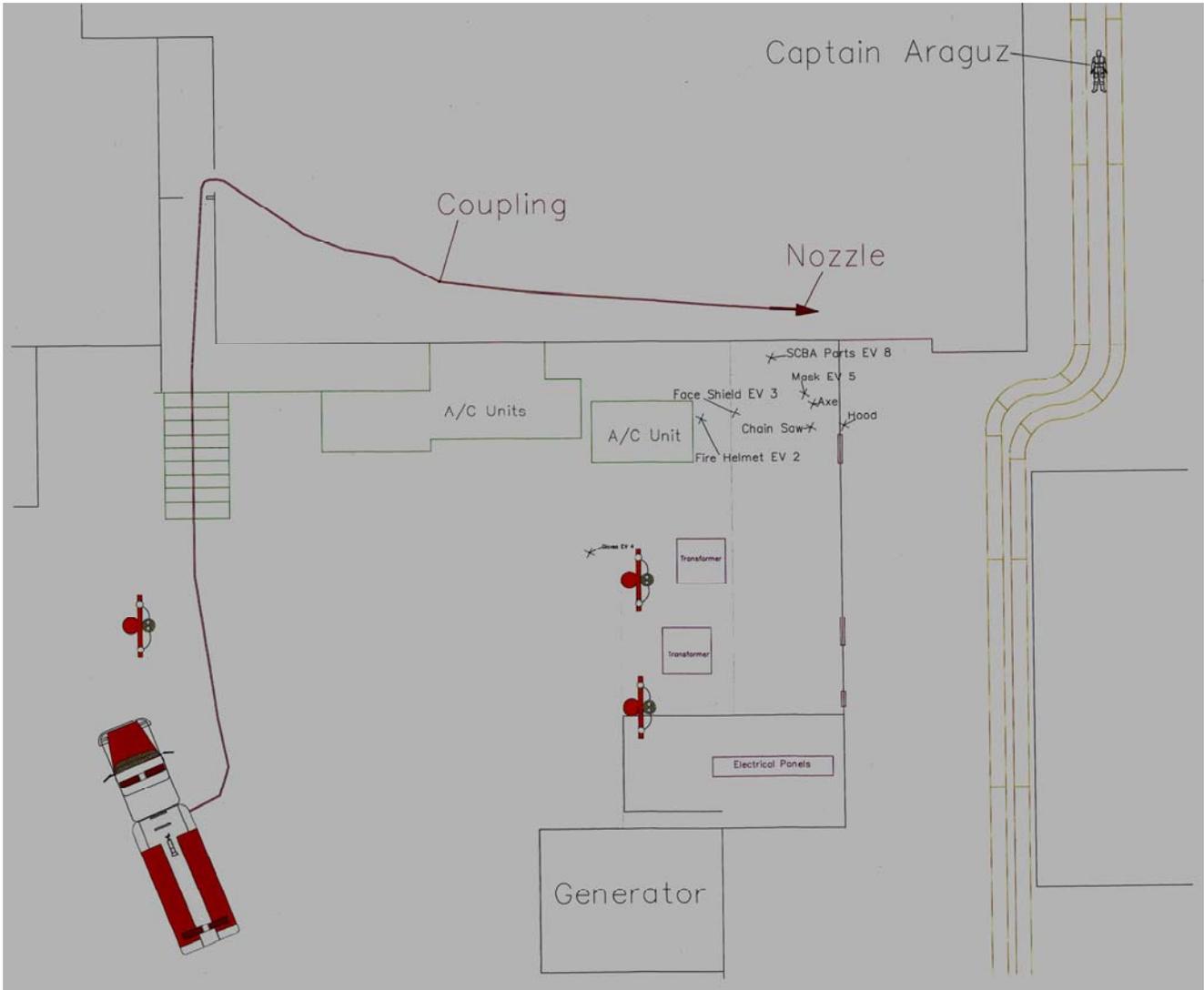


**Diagram 3**  
**Rescue and Victim Locations**





*Diagram courtesy of BATF*



**Diagram courtesy of BATF**

## ***WHARTON VOLUNTEER FIRE DEPARTMENT STATISTICS***

The Wharton Volunteer Fire Department was established in 1906. It provides service to the City of Wharton and responds county wide according to mutual aid agreements and requests. Wharton VFD is staffed by 31 Volunteers and one full time, paid Fire Marshal. Including the paid position there are one Chief, two Assistant Chiefs, four Captains, and 25 Firefighters on the Active Roster.

Apparatus include three 750-gallon 1250 GPM pumpers, one 3000-gallon tanker with a 500 GPM pump, one brush truck, and one rescue truck.

## Investigation Document Log

Doc #	Description	Source
1	911 recordings	City of Wharton Police Department and Wharton County Sheriff's Office
2	Fire Radio Recordings	City of Wharton Police Department
3	Fire Radio Transcripts	Wharton PD
4	Carmela De la Rosa – witness who discovered fire	SFMO & BATF interview info
5	Carlos Rangel – saw smoke and glow through door	“ “ “ “
6	Jose Zuniga – cleaning crew working at discovery	
7	Leonidez Garza – witness, cleaning crew	
8	Anselmo Muniz – mechanic	
9	James Franfullie – witness, cleaning crew	
10	Teofilo Medina-Sanchez – witness, cleaning crew	
11	Sandra Martinez – witness, cleaning crew	
12	Norman Mejia – witness, cleaning crew	
13	Ramon Sanchez – witness, cleaning crew	
14	Alejandro Ramirez – witness, processing manager	
15	Cain Sosa-Martinez – witness, processing operator	
16	Emigdio Huesca-Rivera – witness, egg stacker	
17	Gerardo Lucas – witness, processing operator	
18	Atilano Jose Castillo-Morelos – witness, egg packer	
19	Santos Equi-Salazar – witness, processing	
20	Francisco Conde – works in dry-storage areas	
21	David Copeland – Sales	
22	Mike Domingo Sanchez – shipping dock	
23	Margarito Merino – plant electrician	
24	Calvin Argo – Maintenance Manager	
25	Brandon Shanks – Processing Manager	
26	Michael Castleberry – Chief Financial Officer	
27	Justin Fikes – Chicken House Maintenance Manager	
28	Vincent Reina – OWNER, Chief Executive Officer	
29	Vincent Reina, Jr. – OWNER, President	
30	Beh Reh and Pray Reh – witnesses, cleaning crew	
31	William Barnhill – Production Manager	
32	William Koenig – Construction Manager	
33	Bill Copeland – Wharton Co. S. O. Chief Deputy	
34	<b>Scott Stewart – WVFD Asst. Chief, D side, 1102</b>	
35	Arthur Araguz – WVFD, Suppression D side, 1134	
36	Christopher Owens – FF WVFD, D side, 1134	
37	Ben Williams – WVFD, Suppression D side	
38	<b>Bobby Barnett – Chief WVFD, IC</b>	
39	Ricky Guzman – FF WVFD, A side Suppression, 1130	
40	<b>John Cano – Capt. WVFD, interior Suppression, 1130</b>	
41	Michael Mills – WVFD, 1130 Driver/Operator	
42	<b>Paul Maldonado – FF, WVFD, 1170, Hose man at door</b>	
43	Abell Perez – FF WVFD, D side Suppression, 1150	
44	Jesse Gutierrez – FF WVFD, D side, 1150	
45	Tony Vargas – FF WVFD, D side 1150	
46	Oscar Del Bosque – FF WVFD, D side 1150 Driver/Op	
47	Troy Zahradnik – FF WVFD, D side, 1134	
48	Stephen Nelson – FF WVFD, A side, Tanker Ops.	SFMO and BATF Interview INFO



## References

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1. NFPA [2009]. NFPA 101: *Life Safety Code*, 2009 Edition. Quincy, MA: National Fire Protection Association
2. NFPA [2008]. NFPA 921: *Guide for Fire and Explosion Investigations*, 2008 Edition. Quincy MA: National Fire Protection Association
3. NFPA [2007]. NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program*. Quincy, MA: National Fire Protection Association
4. NFPA [2008]. NFPA 1521. *Standard for Fire Department Safety Officer*. 2008 Edition. Quincy, MA: National Fire Protection Association
5. NFPA [2008]. NFPA 1561 *Standard on Emergency Services Incident Management System*, 2008 Edition. Quincy, MA: National Fire Protection Association
6. NFPA [2004]. NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medicals Operations, and Special Operations to the Public by Career Fire Departments*, 2004 Edition. Quincy, MA: National Fire Protection Association
7. U.S. Occupational Safety and Health Administration Respiratory Protection Standard, CFR 1910.134
8. Texas Commission on Fire Protection Standards §435.17 - Procedures for Interior Structure Fire Fighting
9. IFSTA [2008]. *Essentials of Fire Fighting and Fire Department Operations*, 5th ed. Oklahoma State University. Stillwater, OK: Fire Protection Publications, International Fire Service Training Association
10. NFPA [2008]. *Structural Firefighting - Strategy and Tactics*, 2<sup>nd</sup> Edition. Quincy, MA: Klaene, Bernard J.; Sanders, Russell E
11. NFPA [2009]. *Fundamentals of Fire Fighter Skills*, 2<sup>nd</sup> Edition, Quincy, MA; International Association of Fire Chiefs
12. NFPA [2006]. *Fire Officer Principles and Practice*. Quincy MA: International Association of Fire Chiefs
13. U.S. Department of Homeland Security - Federal Emergency Management Agency, *ICS Management Characteristics* <http://www.fema.gov/emergency/nims/ICSpopup.htm#item5>