

**Martin P. Vela**  
*Fire Marshal*



## **FIRE MARSHAL'S OFFICE**

**Mailing Address**  
111 East Locust St.  
Angleton, Texas 77515

Office # (979) 864-1121  
Fax # (979) 864-1081

**Physical Address**  
111 East Magnolia St.  
Angleton, Texas 77515

---

## **ORIGIN AND CAUSE REPORT**

---

This fire scene examination was conducted using a scientific methodology, the basic method of fire investigation and systematic approach as discussed in the 2021 edition of NFPA 921; "Guide for Fire and Explosion Investigation" & the 2022 edition of NFPA 1033 "Standard for Professional Qualifications for Fire Investigator".

---

BCFMO Case: #2022-00066  
BCFMO Event: #2022-072937  
BCSO Event: #2022-072923  
Date Arrived: 06/08/2022

Dispatched Time: 1147 hours  
En-Route Time: 1147 hours  
Arrived Time: 1222 hours  
Cleared Time: 2102 hours

---

On 06/08/2022 at approximately 1145 hours, I, Karl Gingrich, Deputy with Brazoria County Fire Marshal's Office (BCFMO) was notified by county cell phone that Freeport LNG located at 1500 Lamar St. had experienced a possible explosion and fire. This call came to me from Chief Martin P. Vela, Fire Marshal with BCFMO. Chief Vela requested that I respond to Freeport LNG priority 2 traffic.

At approximately 1147 hours, I along with BCFMO Deputy Lloyd Guidry responded in my department issued vehicle unit #3558 from the City of Manvel, arriving on location at approximately 1242 hours without incident. Chief Vela requested that Deputy Guidry and I meet him at Freeport LNG Emergency Operation Center (EOC).

Once I arrived at the EOC, Chief Vela assigned me to assist him as a liaison between the Brazoria County and Freeport LNG.

At approximately 1930 hours, once the incident was over and the investigation was beginning, I was assigned as the lead investigator from BCFMO. I was advised that no injuries were reported during the incident.

Disposition: Open/Active

---

Prior to my arrival, I observed the weather conditions to be clear with no visible rain or lightning. All weather information was later verified, through historical weather data obtained, through Weather Underground Service at Texas Gulf Coast Airport and as follows.

Temperature – 90°F

Dew Point – 77°F

Humidity – 65%

Precipitation – 0 inches

Wind – 17 MPH S

Condition: Partly Cloudy

Closest Recorded Time: 1152 Hours.

Blitzortung.org Lightning mapping shows no lightning in the area the prior 12 hours before the fire. All observed or historical weather data was consistent during the origin and cause investigation.

---

**The Departments responding to the scene:**

1. Brazoria County Sheriff's Office
2. Brazoria County Fire Marshal's Office
3. Brazoria County Precinct 4 Constables Office
4. Texas Department of Public Safety
5. Federal Bureau of Investigations
6. Texas Commission of Environmental Quality
7. Freeport Fire Department
8. LNG Emergency Response
9. BASF Emergency Response
10. Freeport Fire Department
11. Lake Jackson Fire Department (Water Supply)
12. Damon Fire Department (Water Supply)
13. Sweeny Fire Department (Water Supply)
14. Brazoria Fire and Rescue (Water Supply)
15. Jones Creek Fire Department (Water Supply)
16. Fresno Fire Department (Water Supply)
17. Angleton Fire Department (Water Supply)
18. Wild Peach Fire Department (Water Supply)
19. Richwood Fire Department (Water Supply)
20. Iowa Colony Fire Department (Water Supply)
21. Alvin Fire Department (Water Supply)
22. Clute Fire Department (Water Supply)
23. Manvel Fire Department (Water Supply)

## **Narrative:**

On 06/08/2022 at approximately 1145 hours, I, Karl Gingrich, Deputy with Brazoria County Fire Marshal's Office (BCFMO) was notified by county cell phone that Freeport LNG located at 1500 Lamar St. had experienced a possible explosion and fire. This call came to me from Chief Martin P. Vela, Fire Marshal with BCFMO. Chief Vela requested that I respond to Freeport LNG priority 2 traffic.

At approximately 1147 hours, I along with BCFMO Deputy Lloyd Guidry responded in my department issued vehicle unit #3558 from the City of Manvel, arriving on location at approximately 1242 hours without incident. Chief Vela requested that Deputy Guidry and I meet him at Freeport LNG Emergency Operation Center (EOC).

Once I arrived at the EOC, Chief Vela assigned me to assist him as a liaison between the Brazoria County and Freeport LNG.

I learned that the road in and out of Quintana was shut down and the beaches were evacuated for public safety.

During the event I observed Freeport LNG Vice President Glen Bahars, Safety Manager Nathan Cashion, Ryan Davis Production Manager, BCFMO Chief Vela, Freeport Fire Chief Chris Motley, Brazoria County Sheriff's Office Lieutenant Sky Wingo as well as other unidentified individuals working various aspects of the Emergency Operations Center.

I heard Mr. Bahars, tell Chief Vela that shortly before the explosion he (Bahars) was in the area after being notified that the pipe racks had moved more than they normally do. I heard Mr. Bahars state that he was checking the area to verify the movement.

During the mitigation of the fire, I learned that Freeport LNG Fire and Emergency Response was leading the fire suppression with Freeport Fire Department assisting.

I learned that Freeport LNG's current fire suppression water was being depleted, while it was enough to extinguish the fire, there would not be enough on hand to handle another fire if one occurred. I learned that Freeport LNG holds 800,000 gallons of water in a storage tank with another 1,000,000,000 gallons of water in a trough. After learning of this information BCFMO Chief Vela requested that BCSO Dispatch to contact all county Fire Departments for tankers with a 2000 gallon capacity or more. The following Departments responded:

Lake Jackson - 3000 gal - 2 people

Damon - 3000 gal - 1 person

Sweeny - 3000 gal - 1 person

Brazoria - 2600 gal - 1 person

Jones Creek - 6000 - gal (2) - 2 person

Fresno - 3000 gal - 1 person

Angleton - 1800 gal - 1 person

Wild Peach - 3000 gal - 1 person

Richwood - 1200 gal - 1 person

Iowa Colony - 3000 gal - 1 person

Alvin – 3000 gal – 1 person

Clute - 3000 gal – 1 person

Manvel – 1000 gal – 1 person

Delivering approximately 33,800 gallons of water to place into the firewater storage tanks.

At approximately 1129 hours, once the water shuttle operation was completed, the fire was fully extinguished and the plant was verified to be shut down and safe for the community and the plant employees, all emergency responders cleared the scene.

On June 9, 2022 at approximately 0909 hours, I along with Chief Vela, Deputy Gerber, Deputy Buchanan and Deputy Guidry arrived at Freeport LNG to conduct a follow up. The purpose of the follow up was to discuss BCFMO responsibility to investigate all fires and explosions that occur within Brazoria County and what our part would be in the investigation. BCFMO team met with Mr. Bahars and Mr. Cashion in the EOC. I explained to Mr. Bahars that part of what BCFMO duties are to determine if an intentional act caused the explosion and or fire. At this point there was no indication that the explosion and or fire was intentional. We would work with the third party investigation company that Freeport LNG would hire to conduct the investigation as to what caused the explosion and or fire.

Mr. Bahars instructed Mr. Cashion to escort Deputy Guidry and myself to another office on the property, where they were planning to stage all of the representatives who had a stake in the investigation. Deputy Guidry and I stayed in this building until approximately 1530 hours when Mr. Cashion finally came to give us an update. Mr. Cashion stated that not much was discovered, that Freeport LNG was in the process of interviewing investigation companies and determining that the area where the explosion and fire occurred was safe.

At approximately 1800 hours Mr. Cashion escorted Deputy Guidry and I to area of the explosion and fire. I observed multiple pipes in the pipe racks to have been destroyed with a debris field to be several miles wide. At approximately 1938 hours after touring the area of the explosion and fire, Deputy Guidry and I left Freeport LNG returning to service without incident.

On **06/13/2022** I spoke with Mr. Cashion by cell phone for an update on their investigation. I learned from Nathan that they found a blocked in valve, no indication that it was done maliciously, that it was done in human error. Based off modeling this is a high probability this blocked in valve is what created the events that caused the explosion and fire. I scheduled a meeting with Mr. Cashion for 06/14/2022 at 0900 hours.

On **06/14/2022** Deputy Guidry and I met with Mr. Cashion at Freeport LNG. I learned from Mr. Cashion that Freeport LNG hired IFO Group to lead the investigation, with the Chief investigator being Brian Dunagan.

On **06/14/2022** Deputy Guidry and I met with Brian Dunagan with IFO Group. I learned from Mr. Dunagan that his suspicion, from what he was able to see on this date was a possible low order over pressure of a pipe in the rack. I learned from Mr. Dunagan that his team has inspected the building in the area of the explosion and found relatively small damage to them which indicated a low order explosion. No windows or doors were damaged, some light fixtures sustained minor damage. I learned from Mr. Dunagan that the working theory was Freeport LNG has a 18 inch recirculation line and somehow the was blocked in during normal operation and when the line was blocked in the relief valve did not operate due to it also being blocked in, because of this the process in the line continue to build pressure until the pipe was not able to contain the product any longer. I learned that during maintenance of this relief valve in or about April 2022, the valve was not opened once the maintenance was completed. I learned that Mr. Dunagan planned to send portions of the pipe out to have it tested to see if the pipe prematurely failed. I learned from Mr. Dunagan that the process valve was blocked in approximately four (4) days prior to the explosion, which allowed the process in the pipe to cook and heat up until the pipe was no longer able to contain the pressure. Mr. Dunagan gave us a tour of the explosion site showing us what pipes were part of the explosion and what was secondary to the explosion.

On **06/22/2022** I made with Mr. Dunacan on my department issued cell phone. I learned from Mr. Dunacan that the investigation has been hindered a bit due to installing a life line so that they can tie off while conducting the investigation. Once the life line is installed they would be able to look for the ignition source. I learned that Mr. Dunacan was guessing the ignition source to be some type of electrical device. Due to not a lot of ferrous Steele present and observing the presence of electrical devices being sheared off. I learned from Mr. Dunacan that as of this date I was 95% confident that the relief valve being blocked in was the cause of the explosion and fire. I learned that possibly due to the over pressuring of the line caused by the relief valve not being open, the pipes may have been pressured well above the pipes working pressure. Prior to ending the call I scheduled a site visit with Mr. Dunagan for June 27<sup>th</sup> at 1000 hours.

On 06/27/2022 at approximately 1039 hours, I along with Deputy Fire Marshal Lloyd Guidry arrived at Freeport LNG. We made initial contact with Nate Cashion of Freeport LNG. After getting checked in and obtaining the necessary protective equipment that is required to enter the gate of Freeport LNG from Mr. Cashion. Mr. Cashion escorted Deputy Guidry and I to the command trailer where Brian Dunagan investigator with IFO Group offices from. We made contact with Mr. Dunagan who invited us to tour the incident site again. We learned that Mr. Dunagan was 96% certain that blocked in valves was the cause of the explosion and fire. Mr. Dunagan commented on the news paper report that indicated the explosion and fire was due to a terrorist attack. Mr. Dunagan confirmed based on his experience that it was highly unlikely that the explosion and fire was due to anything other than an accident. I learned from Mr. Dunagan that the valves were blocked in 4 to 5 days prior to the explosion and fire and that it was unlikely that someone would have set up a situation that would have taken 5 days before the event would occur. I learned from Mr. Dunagan that the black smoke that was seen at the time of the fire was due to the synthetic liner that is around the pipe rack, this particular coating is fire resistive not fire proof, the fire was hot enough that it cause the synthetic liner to burn. I learned that the reason it took so long to extinguish the fire was that the position of the fire made it difficult to get water on the fire, for safety of the firefighters it was not practical to put a firefighter in the rack to extinguish the fire. I learned the engineering design of the pipe rack performed as it was designed to do. The LNG remained in the trench with the fire was contained in the area until the fuel burned away extinguishing the fire. I learned from Mr. Dunagan that at this time the ignition source has not been determined but the working theory that the ignition source would be something electrical. Mr. Dunagan showed us the area that he suspected the area of ignition was located due to fire and smoke patterns of the entire pipe rack. I learned from Mr. Dunagan when the pipe failed due to the over pressuring, a lot of kinetic energy was released which is what caused all of the damage to other pipes in the rack, pushing pipes in different directions, shrapnel from the pipes being ejected across the area causing other damage. I learned from Mr. Dunagan that the expansion joints that are in place are designed to allow for movement of the pipes due to thermal expansion, based on the amount of damage the pipes appear to have been moving more than what he expansion joints are designed to allow. I asked Mr. Dunagan if there was any confirmation that Freeport LNG was investigation the movement of pipes prior to the explosion and fire. Mr. Dunagan showed us a pipe that had fallen off the pipe support. I learned that on the Monday prior to the explosion and fire, the pipe had moved enough to cause it to fall off the pipe support and unknown employees with Freeport LNG wrote it off to a bad pipe hanger. Mr. Dunagan could not say why the employees did not react to the pipe movement at that time. I asked Mr. Dunagan if he knew why Freeport LNG, knowing that they had a bad pipe rack, why would it not have been fixed. I learned from Mr. Dunagan that Freeport LNG was attempting to trouble shoot why the pipe was moving, the subcontracted for a third party engineer to evaluate the pipe racks, however the engineer that was sent the day before the explosion and fire was a mechanical engineer not a pipe engineer. I learned from Mr. Dunagan that mechanical engineer did a good job, however someone did not listen to him and react to the pipe moving. I learned from Mr. Dunagan that he had interviewed approximately 10 Freeport LNG and believe that he had talked with the person who blocked in the relief valve, however the person who was last to have put hands on the relief valve stated that he opened the relief valve up and placed a car seal on it, he could not say how the valve could have been closed again.

I learned from Mr. Dunagan that all of the piping would be removed and stored in a warehouse in Clute to preserve the evidence.

Based on the information that I learned and what I saw touring the area of the explosion and fire, it appears that the cause of the explosion and fire is accidental – Human error. There is no indication that the explosion and fire was done intentionally.

On August 09, 2022 at approximately 1033 hours, I sent an email to Adam Sowatzka, legal counsel with King & Spalding LLP. Mr. Sowatzka is who Mr. Dunagan referred me to in order to obtain a copy of the report and pictures that were taken during the investigation. I did not receive a response from Mr. Sowatzka.

On August 23, 2022 at approximately 0856 hours, I attempted to contact Mr. Sowatzka by phone. Contact was not made, I left a message on the voice mail, identifying who I was and the purpose of the call. At approximately 0911 hours Mr. Sowatzka returned my call. Mr. Sowatzka advised me at this time all information obtained from the investigation is private and that he would not be able to provide any information until the time that the investigation was concluded. Mr. Sowatzka stated that he did receive my email and I would receive a copy of the report as soon as it was released.

## **Documents, Statements, and Data:**

---

### **Area of Origin**

---

### **Develop Hypotheses**

#### Hypothesis 1

- A. Origin –
- B. Hypothesis –

#### Hypothesis 2

- A. Origin –
- B. Hypothesis –

#### Hypothesis 3

- A. Origin –
  - B. Hypothesis –
- 

### **Hypothesis 1 –**

### **Hypothesis 2 –**

**Hypothesis 3 –**

---

**Origin: Inside the ATM Building in the North West corner.**

**Cause: INCENDIARY**

**DISPOSITION: Closed**

---

Karl Gingrich  
Deputy Fire Marshal, Brazoria County

00/00/2022  
Date