

# Tank and Petroleum Use Mishaps

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**By learning about the misfortunes of others, it is STI's hope to educate the public by creating a greater awareness of the hazards with storage and use of petroleum and chemicals. Please refer to the many industry standards and to the fire and building codes for further guidance on the safe operating practices with hazardous liquids. Thanks and credit for content are given to Dangerous Goods-Hazmat Group Network.**

<http://groups.yahoo.com/group/DangerousGoods/>

## **CHINA, BEIJING**

**AUGUST 19 2015.**

### **CHINA'S TEENAGE, UNTRAINED FIREFIGHTERS MAKE DISASTERS LIKE TIANJIN WORSE**

More than 1,000 firefighters were dispatched after a series of massive explosions killed dozens and left hundreds injured in the northeast Chinese port city of Tianjin on Aug. 12. Tragically, some of these firefighters, which included contract workers just 17 years old, might have made the situation worse.

The culprit of the blasts is Ruihai International Logistics, which handles "dangerous chemicals." Chinese officials have found 700 tons of sodium cyanide at two locations near the blasts stored by Ruihai, reportedly 70 times the permitted quantity. Calcium carbide, another chemical known stored at the site, can emit flammable gases when it becomes wet.

Firefighters from the the Tianjin Port Group, a government-bureau-turned state-owned company that serves as the main operator of the port of Tianjin, were the first to arrive at the scene and hosed down the blaze with water, which caused more blasts, according to reports in Chinese media, including well-respected business newspaper Caixin reported.). After rescue work continued for around an hour, the blasts took place, Caixin reported.

Several firefighters of the company now treated in hospital told the Beijing News that they did not know the fire was caused by chemicals. But rather than dying down when they wet it, the fire "became bigger and bigger," one told the newspaper. Firefighters said they were barely trained to use foam and sand though the two are a must in dealing with chemical fires.

"No one told them the fire involved chemicals," a firefighter who was off duty the night of the explosions told the New York Times.

Once they arrived, the firefighters should have gotten instruction on the compositions of hazardous materials from Ruihai, and followed these to put out the fires, an anonymous person from a forwarding company who do business with Ruihai told Caixin.

Chinese officials ordered firefighters on the scene to halt rescue work around ten hours after the explosions. Military personnel specializing in handling nuclear and biochemical materials were sent to the site, and the firefighters switched to using foam and sand. More than 40 hours after the explosions began, all the fires were put out.

### **Like "migrant workers"**

China has a three-tier firefighting system. The country has 130,000 official, national fire-fighters, who are controlled by the Ministry of Public Security. Local governments and public institutions also have firefighters. And finally, businesses who have a high risk of fire are also obliged to set up firefighting teams. Those include businesses that produce or store inflammable or explosive goods (like Tianjin Port Group),

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according to China's fire protection law.

Despite the three-tier system, China has less than 0.2 firefighters per 1,000 residents, far below the average number for developing countries of 0.3 to 0.5, the Beijing News noted. The U.S has around 3.6 firefighters per 1,000 residents, according to data from the National Fire Protection Association (note: the US figures include a large number of volunteers).

Top-tier firefighters of the state public security ministry, who usually serve for just two years, enjoy the same status as police officers. Some of those funded by local governments and government-owned businesses also are treated as civil servants, with the same perks and often robust training. They are referred to in China as "in the system" firefighters.

But most of the second and third tiers are not "in the system," and often are not full employees, just contract workers. These include the firefighters of the Tianjin Port Group.

The state-owned company hired 240 contract firefighters, though they report to the public security bureau of Tianjin, Caixin reported. Caixin said those firefighters are always the first to respond to an alarm in the Tianjin Port, though they are less professionally-trained than public security ministry firefighters.

"They are a bit similar to migrant workers," an anonymous person at the public security bureau of the Tianjin port told China Newsweek. When the company needs people, "they hire" them, the person said, "the younger the better."

According to the country's fire department, China's businesses had hired around 65,000 firefighters at the end of 2013, known as "enterprise funded" firefighters. Of those, nearly 37,000 are contractors, without full time employment benefits. Contract firefighters also account for the majority of firefighting crews in city or village level governments.

China has a total of 113,110 contract firefighters, nearly the total of the country's 130,000 public security ministry firefighters. These contract workers reportedly don't stay in the job long thanks to low payment, lack of promotion, and great danger.

"A large gap in public security firefighters on active service, and a severe loss in contract-based firefighting crews—these are the two biggest problems China's fire service system is facing," an expert at the Chinese People's Armed Police Force Academy told the Beijing News.

A mother of a missing firefighter told state-run digital publication The Papers that her son was paid around 4,000 yuan (approximately \$626) per month, about double the lowest wage in Tianjin.

### **Contract workers' heavy toll**

It is still not clear how many of these contract workers were deployed to the blast site, but what is clear is they paid a heavy price.

As of 9am Aug. 17 in China, at least 114 had died in the blasts, and 70 are missing, Tianjin authorities said at a press conference. Of the 54 dead that have been identified, 39 are firefighters. Firefighters also account for 64 of the 70 missing. Of those, contract firefighters account for 23 of the dead, and 56 of the missing.

The Tianjin Port "Fifth Brigade" firefighting unit may be completely gone. Of the unit's 25 members, two are dead and 23 missing, many of them in their teens. The Beijing News posted a photo of the unit from Chinese New Year 2014 on Sina Weibo:

An incomplete list of missing firefighters compiled by Chinese media shows that at least five of them are just 17 years old.

Chinese Premier Li Keqiang said families of the deceased official firefighters and contract counterparts will be given the same compensation when he visited injured firefighters on Aug. 16.

"They are all heroes," Li said

<http://qz.com/480804/chinas-dearth-of-trained-firefighters-can-make-disasters-like-the-tianjin-explosion-much-worse/>

**USA, NEV, LAS VEGAS  
AUGUST 20 2015.**

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## **1 INJURED WHEN PROPANE TANKS EXPLODE BEHIND LAS VEGAS STRIP, AN EMPLOYEE WAS REFUELING PROPANE TANKS**

Kailyn Brown and Jesse Granger

An employee at a hot-air balloon business west of the Las Vegas Strip was injured this morning when propane tanks he was refueling exploded, Clark County Fire Department and company officials said.

Two vans with utility trailers and two larger propane tanks holding 500 to 1,000 gallons of fuel also caught fire, according to fire department officials.

The blaze, which prompted the evacuation of nearby businesses, was brought under control before 11 a.m. and did not spread to surrounding buildings, officials said.

The explosion was reported about 9:05 a.m. at Vegas Balloon Rides in the 4300 block of Polaris Avenue.

An employee was refueling propane tanks — fire department officials said they were from five to 20 gallons — at the time of the explosion, said Jeff Chatterton, a spokesman for Vegas Balloon Rides.

The 35-year-old man, whose name was not released, was taken to University Medical Center with arm and leg burns, fire department officials said.

He is in good condition and "good spirits," Chatterton said.

The explosion happened at the company's maintenance facility and no passengers were at the site, Chatterton said.

Video posted on Twitter shows the fire and explosion. A column of black smoke could be seen rising from the area.

David Johnson, an employee of Allstate Electric, said he was at a neighboring business to pick up some material when he heard an explosion and saw a fireball.

"After the second explosion, I felt the heat wave hit my face and I was like, 'Let's get out of here,'" he said. "I knew there could be the possibility of shrapnel hitting us, so we bolted it across the street."

Heat from the fire melted a streetlight pole, Johnson said. "It was like something out of a movie," he said.

William Reynolds, 26, said he was on his couch on the 37th floor of a high-rise building nearby when he felt a tremble. He went out to the balcony to see "an intense fire." As he started recording the thick black smoke filling the sky, he witnessed the second explosion.

"Flames were shooting out of the area in a very consistent stream," he said in an email.

The company's balloon rides launch off-site every day at dawn. Chatterton said he didn't know if the tanks being refueled were used in that morning's flight.

Riders typically don't visit its business south of the Rio casino-hotel, across Interstate 15 from the Strip.

Chatterton said he expected the company wouldn't be offering rides for at least a couple days. He added that he wasn't sure if the empty baskets that hold passengers were also engulfed in the fire, but he assumed a few may have been destroyed.

Streets in the area were closed as firefighters battled the blaze, but they were reopened by about noon.

The extent of the damage has not been determined, and the cause of the blast is under investigation, officials said.

<http://lasvegassun.com/news/2015/aug/18/explosion-reported-behind-las-vegas-strip/>

## **USA, WI, SHAWANO CO, ALMON**

**AUGUST 16 2015.**

### **ONE MAN IS DEAD AFTER A FARM TANK ACCIDENT IN SHAWANO COUNTY.**

According to a press release from the Sheriff's Department, first responders, Wittenberg Ambulance and the Shawano County Sheriff's Office were dispatched to an address on River Road in the Town of Almon, north of Bowler, around 4:50 p.m. On scene, they found a man who was unresponsive in an

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8000 gallon vertical whey tank. The 32-year-old from Birnamwood was performing maintenance work inside the tank, according to the Sheriff's Department. He was pronounced dead at the scene. The cause of his death is under investigation by the Shawano County Sheriff's Office. An autopsy is scheduled for a later date. The victim's name won't be released until family is notified. Further details of the incident will be released as they become available.

<http://www.wsaw.com/home/headlines/1-Killed-in-Shawano-Co-farm-accident-321920882.html>

### USA, TX, HOUSTON

SEPTEMBER 3 2015.

#### MASSIVE EXPLOSION DISFIGURES TEXAS LANDOWNER, AND HE BLAMES FRACKING

Cody Murray, a former oil field services supervisor, could immediately hear that something was wrong – very wrong – with his North Texas water well. In an instant he darted back and shoved his elderly father to the ground before a fireball erupted 30 feet in each direction from the well house.

Murray's nearby wife and daughter suffered first degree burns, and his father fared slightly worse. But the flames engulfed Murray, now 38, catching his t-shirt on fire.

"The skin was sloughing off his body," said attorney Chris Hamilton, who filed a lawsuit on behalf of the Murrays last month in a Dallas County Court, accusing nearby oil and gas operations of contaminating groundwater with the methane that caused the explosion in August 2014.

Legal battles over industrial pollution are nothing new, but this case touches on a flashpoint issue in Texas: hydraulic fracturing, which simultaneously brought the state billions of dollars while throwing up a plethora of public health and environmental objections.

The Murrays' well blew up on the family ranch, just 1,000 feet from the nearest gas well, about 50 miles northwest of Fort Worth in the Barnett Shale region—the birthplace of fracking.

"This is sort of a battleground and any new decision will probably be significant beyond its importance," said Jim Blackburn, a Houston-based attorney of environmental law and professor at Rice University. "It's the pivotal point we are at with fracking."

To win the case, he said, the Murrays must prove that the methane in their water supply was not common natural contamination.

Scientific studies have shown that gas wells drilled for fracking can leak into groundwater. The first was led by researchers at Duke University in 2011, and showed a link between methane contamination in water wells and their proximity to gas drilling sites.

Study author Robert Jackson, now with Stanford University, said that drilling shafts can puncture gas pockets which can flow through buried crevices into water supplies.

"I'm not saying that means it happened [in this case]," he said. "But in principle it is plausible."

He said contamination generally only occurs in poorly-built wells where the cement casing surrounding the shaft is cracked or inadequate. Hamilton, the Murrays' attorney, said that's just what happened.

He pointed to records from the Texas Railroad Commission which showed that casing on the nearest gas well to the Murrays' property, one operated by EOG Resources, Inc., didn't match reports filed by the company. They also showed that casing extended down about 550 feet, even though an initial schedule planned for 1000 feet. That well, Hamilton said, was drilled horizontally, directly under the Murrays' well.

EOG and another company named in the suit, Fairway Resources, LLC, both said they do not comment on pending litigation.

Hamilton said that contracted testing showed that the methane was not natural contamination because it bore markers of very deep-earth gas that couldn't plausibly migrate up near the surface so quickly without help from a driller. The well water also isn't as salty as the kind that would typically come up with some natural methane.

Conclusively proving that the methane came from a fracking well will be tough.

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"It's difficult," Jackson said. "You have to do a lot of work."

Scientists would need to test the gas from the nearby wells, but also chart any separate gas pockets they may have tapped, access that gas and test it, too.

Blackburn noted he was once very confident that it was methane contamination from a nearby landfill that had made one of his client's tap water flammable. But in the course of trial, testing showed the gas came from a deep natural source.

"It's very complex," he said. "These things are not always what they appear."

Hamilton said he is working with the RRC and independent contractors to do complete testing on the wells. In the meantime, Murray lives with the results of the disaster. Third degree burns destroyed nerves in his arms, so he can't feel the steering wheel to drive, needs his wife's help to set the shower temperature and "can't even pour a pitcher of tea," Hamilton said.

He's seeking compensation of medical costs, suffering, disfigurement, lost income, lost earning capacity and other things.

<http://www.chron.com/news/houston-texas/texas/article/Massive-explosion-disfigures-Texas-landowner-and-6478547.php>

### **INDIA, UTTAR PRADESH, RAMPUR**

**SEPTEMBER 3 2015.**

#### **4 LABOURERS DIE WHILE CLEANING LIQUOR FACTORY TANK**

Rampur distillery last Radico Khaitan tank cleaning in case of death of four workers filed a case against the five men were. Rampur distillery in the Civil Lines police station against the three officials and two contractors of culpable homicide has been reported. Civil Lines police station area on the highway in Rampur distillery Radico Khaitan are cleaning the tank yesterday were seven workers were buried in the rubble. Four of whom were killed. Nirmal Singh, brother of the deceased in this case report is recorded at Jaipal Singh's complaint. Factory general manager, deputy manager in charge of the unit and two contractors have been charged. The report said the accident happened negligence of the accused. At the scene there was a leak of toxic gas that proper arrangements were not made to stop. The administration also initiated a magisterial inquiry into the case has been made. [Translated from Hindi into English by Google]. <http://www.jagran.com/uttar-pradesh/lucknow-city-fir-against-five-in-rampur-mishap-12829928.html>

### **USA, WASHINGTON, DC**

**SEPTEMBER 8 2015.**

#### **DAMAGED PIPELINE SPILLS MINERAL OIL INTO ROCK CREEK PARK**

A utility spokesman says a damaged Pepco pipeline has spilled traces of non-toxic mineral oil into Rock Creek Park and that repairs are likely to take weeks. Pepco spokesman Sean Kelley says mineral oil is used to insulate Pepco's underground cables and that the company believes that an unaffiliated contractor damaged the pipeline while doing work in an area of Klinge Road NW. The Washington Post reports the leak was discovered after traces of the oil were detected in Rock Creek. Officials publicized the spill in a news release Friday, but said there was "no cause for major concern." Three lanes of Klinge Road between Adams Mills Road and the bridge over Rock Creek Park are expected to remain closed until Tuesday. <http://www.wusa9.com/story/news/local/dc/2015/09/07/damaged-pipeline-spills-mineral-oil-into-rock-creek-park/71848344/>

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**USA, FLA, DANIA BEACH**

**SEPTEMBER 9 2015.**

## **FIRE INJURES WORKER AT DANIA BEACH GAS STATION**

Erika Pesantes

Flames shot up 15 feet in air during gas station fire that injured one in Dania Beach, authorities say. Broward Sheriff Fire Rescue tends to a fire affecting the underground fuel tanks at a Mobil gas station at 3991 Stirling Road in Dania Beach on Sept. 8, 2015, that left at least one person injured. A worker was injured during a fire at a gas station in Dania Beach on Tuesday afternoon, a fire-rescue official said. It was unclear what happened when the worker accessed the fuel tanks, but there was a flash fire that burned him at the Mobil gas station at 3991 Stirling Road, according to Broward Sheriff Fire Rescue spokesman Mike Jachles. The worker was taken to Memorial Regional Hospital and was conscious and alert. He was in good condition, Jachles said. At least two workers were attempting to access the fuel tanks when the fire occurred at 1:35 p.m. Arriving crews spotted flames that shot up about 15 feet in the air, Jachles said. Broward Sheriff Fire Rescue's Haz-Mat team and Hollywood Fire Rescue responded. On Tuesday afternoon, the gas station remained closed during the investigation of the fire. Occupational Safety & Health Administration officials have been notified of the incident.

<http://www.sun-sentinel.com/news/fl-dania-gas-blast-20150908-story.html>

**USA, TX, MIDLAND CO**

**SEPTEMBER 10 2015.**

## **TANK BATTERY FIRE REPORTED IN MIDLAND COUNTY**

Authorities rushed to the scene of a tank battery fire Tuesday around 12 p.m. It broke out in the 9600 block of South FM 1788 and "appeared to be accident," according to Midland County Fire Marshal Dale Little. No injuries were reported, he confirmed. Residents reported seeing thick black smoke from miles away and feeling "some type of booming explosion." The initial impact shook the ground and rerouted dozens of drivers onto West County Road 160. Investigators said approximately nine units were called to the scene.

<http://www.newswest9.com/story/29982188/tank-battery-fire-reported-in-midland-county>

**USA, AZ, PHOENIX**

**SEPTEMBER 10 2015.**

## **HUGE INDUSTRIAL FIRE IN PHOENIX BRINGS EXPLOSIONS, PROMPTS EVACUATIONS**

A huge industrial fire involving hazardous materials is still smoldering near 19th Avenue and Broadway Road in Phoenix. The fire burned strong for more than an hour Wednesday afternoon, and caused powerful explosions and massive fireballs. Those explosions actually caused barrels to fly out as projectiles. Phoenix firefighters said multiple storage tanks filled with used motor oil went up in flames Wednesday afternoon. When one 55-gallon drum exploded, the blast damaged some power lines in the area. That blast forced firefighters to back up their ladder trucks to a safer area. The fire generated a tremendous amount of smoke, likely thanks to all that motor oil. A large plume of black smoke could be seen for miles. And the fireballs could be seen from a distance seen blasting from the inferno. 50 firefighters were on scene to battle the 3-alarm fire, and 20 hazmat specialists were called out to evaluate the materials. About 100 employees were evacuated from the area, including workers at a nearby Circle K. Phoenix fire officials warned the public and the media to avoid the area, calling it an "active and dangerous" fire scene. The FAA said the fire did not impact air traffic, but some departures were directed to fly further out to the west before turning southwest to avoid the smoke.

<http://www.tucsonnewsnow.com/story/29993921/huge-industrial-fire-in-phoenix-brings-explosions-prompts-evacuations>

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## ENGLAND, WALES, VALE OF GLAMORGAN

SEPTEMBER 10 2015.

### FIRE CREWS TACKLE OIL TANK BLAZE IN OGMORE-BY-SEA

Firefighters are tackling an oil tank blaze which has spread from one building to a neighbouring property in Vale of Glamorgan. The fire, at two detached properties in Ogmores-by-Sea, has caused one roof to collapse. South Wales Fire and Rescue Service said it was called to the incident at about 13:50 BST on Wednesday. It is not thought that anyone is trapped in the properties. The footage was taken by nearby resident Phillip Jenkins.

<http://www.bbc.com/news/uk-wales-34201337>

## USA, WYO, DOUGLAS

SEPTEMBER 10 2015.

### CHESAPEAKE WELL FIRE MAY REQUIRE "PROLONGED RESPONSE," OFFICIALS SAY

Officials are unsure how long it may take to extinguish a fire that started Sunday at a Chesapeake Energy oil well outside Douglas.

"It is too early to tell, although we anticipate this being a prolonged response," said Gordon Pennoyer, director of communications for Chesapeake.

Pennoyer said the fire has spread to all six wells at the oil site. No one has been injured in the fire. The cause of the blaze is under review but has not been determined.

Boots and Coots, a firm specializing in containment of well fires, had been deployed to the site north of Douglas. The team will begin clearing equipment from around the site in order to direct the fire upward and provide better access to it, Pennoyer said. The fire may be more visible as a result and steam may be seen rising from the site as the workers try to suppress the fire.

Wyoming Oil and Gas Supervisor Mark Watson said crews have brought in water to cool the fire before spraying it with foam.

Watson said the government is taking the backseat right now regarding the fire.

"Boots and Coots does this every day," Watson said. "The last thing they need is for the government to get involved."

Local residents on Wednesday expressed concerns about the fire's impact on public safety. Amber Munsinger, who has been surveying the fire since Sunday, said she has yet to see any improvement in the size of the flames.

"If anything it appears to have gotten worse since the fire was initially reported," Munsinger wrote in a Facebook message to the Star-Tribune.

Munsinger also worried that the fumes and smoke could affect her family, and that the fire could spread and create a grass fire.

Watson said there is limited potential for a grass fire since the well pad is made of gravel. He added that the nearest residential home is three miles away from the oil site.

To monitor air quality, Chesapeake has placed 11 stationary air monitors around the site, in addition to three mobile units, said Keith Guille, spokesman for the Wyoming Department of Environmental Quality. The devices are monitoring the amount of natural gas being produced by the oil wells. Guille said the fire is burning up most of the natural gas.

As of Wednesday, there were no health risks to the public, Guille said.

The Federal Aviation Administration has prohibited anyone from flying within a mile of the fire. The flight restriction is in place for flights below 2,000 feet.

[http://trib.com/news/state-and-regional/chesapeake-well-fire-may-require-prolonged-response-officials-say/article\\_bb1c1d2c-73b3-52f5-a08e-113a8442020b.html](http://trib.com/news/state-and-regional/chesapeake-well-fire-may-require-prolonged-response-officials-say/article_bb1c1d2c-73b3-52f5-a08e-113a8442020b.html)

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**USA, AZ, PHOENIX  
SEPTEMBER 11 2015.**

## **PHOTO'S; LARGE FUEL TANK FIRE IN PHOENIX**

The Phoenix Fire Department responded to a large fuel tank fire near 19th Avenue and Broadway around 2 p.m. on Wednesday.

<http://www.abc15.com/news/news-photo-gallery/photos-large-fuel-tank-fire-in-phoenix>

**USA, CO  
SEPTEMBER 11 2015.**

## **JUDGE'S RULING IN OIL AND GAS WORKER'S DEATH COULD SPARK CHANGE**

Jackson Lewis PC

A judge's decision to award lifetime workers' compensation benefits to the widow of a Colorado oil and gas worker who died from toxic gases after opening a tank to measure oil levels could reverberate throughout the industry.

Jim Freemyer, 59, died in July, 2014, after he inhaled a toxic mix of hydrocarbons in a low-oxygen atmosphere while he was gauging the level of oil in a tank at the Gaddis oil holding tank site near Johnstown, Colorado. The procedure, known as "tank gauging," occurs when a worker, usually a truck driver, measures the amount of oil in a tank by dropping a device similar to a tape measure into the vessel until it hits bottom, retrieving the gauge by winding it up, and noting the measurement of the oil depth on the tape.

In July, a judge ruled that Freemyer's widow was entitled to funeral expenses and a monthly death benefit. The employer, Now or Never Trucking, Inc., of Greeley, said it will not appeal the decision, Bloomberg BNA reported.

Besides paying expenses and benefits, the trucking firm also faces a \$19,600 proposed penalty from the Occupational Safety and Health Administration. In a letter to Freemyer's widow in January, OSHA said it had determined Now or Never Trucking had not evaluated the respiratory hazard present during tank gauging, and alleged the victim had been working in an oxygen deficient atmosphere above or adjacent to an open thief hatch. In addition, OSHA said the company had not implemented engineering controls to eliminate or limit exposure to oxygen deficient atmospheres, or provided training to employees so they could recognize the hazard and employ work practices and personal protective equipment to guard against it.

The company's insurer, Pinnacol Assurance, initially denied the benefits, claiming Freemyer's poor health, not his workplace exposure, led to his death. However, the judge was persuaded by the testimony of a doctor who concluded Freemyer's pre-existing cardiovascular disease resulted in his not being able to survive the toxic environment at the tank. Without the exposure, Freemyer would not have died when he did, the judge concluded. The judge also noted that instructions for the filter respirator Freemyer was wearing indicated that it was not designed for low-oxygen environments.

Pinnacol, which also provides coverage for other Colorado employers, told Bloomberg BNA it wanted to do whatever it could to minimize the potential for such accidents in the future. Spokeswoman Edie Sonn said, "We have seen media coverage of other similar tragic incidents and want to be sure that our policyholders are aware of the safety resources available to them to address the issue of toxic fumes in gas gauging."

Sonn said that, besides developing materials internally, Pinnacol is sharing resources from the National Institute for Occupational Safety and Health, which earlier this year called attention to nine production workers who died during tank gauging work over a five-year period ending in 2014. Freemyer was one of those workers. The deaths promoted the OSHA National STEPS Alliance, a public-private partnership that includes OSHA and NIOSH, to issue a tank hazard alert this spring. That alert was featured in our newsletter.

Representatives of oil and gas producers Encana Corp. and Anadarko Petroleum Corp. told

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Bloomberg BNA they are evaluating alternatives to manual gauging for measuring oil levels in tanks, such as remote gauging and other automated control technologies. Besides remote gauging and automated gauging, sight gauges, closed loop systems, and remote venting are other engineering controls the OSHA National STEPS Alliance recommends.

<http://www.lexology.com/library/detail.aspx?g=5ccf23c8-7bc9-4d7a-978b-fce2693509ab>

## **USA, FLA, DANIA BEACH**

**SEPTEMBER 12 2015.**

### **FLASH FIRE AT GAS STATION: WORKER INJURED WORKING ON UNDERGROUND TANK.**

Local 10 News has obtained surveillance video that shows a flash fire at a Dania Beach gas station that left one man injured on Tuesday. Workers told Local 10 News reporter Jeff Weinsier that a man, identified as Elvio, was working on the underground tanks when vapors ignited, sparking a flash fire. Video from the Mobil on Stirling Road and Southwest 40th Street shows Elvio jump up and run from the flames. Elvio suffered second-degree burns to his face and has since been released from the hospital. He is expected to make a full recovery. Two other workers from Petro Solutions who were not underground were not injured in the fire. One man, who did not want to be identified, told Weinsier that he has never seen anything like this in his 30 years of working on gas station tanks. Elvio has been cleared to return to work for "light duty," but remains on leave. The Occupational Safety and Health Administration is investigating the incident. <http://www.local10.com/news/worker-injured-in-flash-fire-at-dania-beach-gas-station/35223678>

## **NEW ZEALAND, AUCKLAND**

**SEPTEMBER 15 2015.**

### **1 DEAD, 4 INJURED IN SOUTH AUCKLAND TANK EXPLOSION**

#### **UNAUTHORISED WELDING, WITHOUT PERMISSION CAUSES TANK TO EXPLODE.**

Unauthorised welding caused an explosion "like a sonic boom" which sent debris flying 100m through the air and killed one person in South Auckland today.

The blast happened at Salters Cartage, a hazardous materials recycling business, in an industrial site on Bolderwood Pl, Wiri, about 1.35pm.

The force of the explosion blew photos off walls a block away, shook buildings and was described as sounding "like a bomb".

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The force of the explosion blew photos off walls a block away, shook buildings and was described as sounding "like a bomb".

Witnesses spoke of seeing flames leaping 30m into the air, and feeling buildings shake 5km from the blast site.

One man died in the explosion, Inspector Julia Lynch, area commander at Counties Manukau Police, confirmed this afternoon.

No one else was injured.

However, a number of the man's co-workers, who saw the incident, were being talked to.

"Obviously they're devastated, they're upset," Ms Lynch said.

"Police will be investigating the incident alongside WorkSafe New Zealand."

Salters Cartage managing director Ron Salter said the man who died was a contractor and was killed when a tank exploded.

Two contractors were on site, measuring some walkways, he said.

One decided to carry out some welding, without permission, causing a tank to explode.

The blast blew out all the windows at Salters Cartage, Mr Salter said.

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A worker at a nearby business said the explosion shook her building. Part of an exploding fuel tank had landed in a nearby yard, she said.

"It shook our whole house, [I] thought the windows were going to shatter, freaked the sh\*\* out of me," Janelle Stubbington said.

Workers at neighbouring sites said they saw debris flying through the air and billowing black smoke.

"People were just running around and we could hear sirens," said one man who wished not to be named.

He worked at a transport company that backs on to Salters Cartage.

"It shook the building pretty badly and we saw something flying through the air, it came down and there was a puff of black smoke."

A large fragment of what is believed to be a fuel tank was propelled about 100m through the air and landed across the road from the scene of the explosion on the roof of a car.

Satnam Bains was working at the Clendon Wines store on Roscommon Rd when the explosion happened.

"Bottles on the shelf rattled, I thought there was an explosion outside on the road," she said. "A lot of people came out of their stores to see what had happened."

Graeme Cochrane, branch manager at Repco Manurewa on Weymouth Rd - 5km from Bolderwood PI - said staff members felt the building and roof shake, and heard a thud beforehand.

Jason Farquhar told One News he saw a man standing on the roof of a petrol container. He described the container as being like a silo and said the man appeared to be welding.

Mr Farquhar heard "a pretty big bang ... like a sonic boom" and saw a "shock wave" when the explosion occurred.

The person on top of the container was thrown in the air far away from the container, he said.

A worker at a nearby business told the New Zealand Herald a loud noise "like a bomb" was heard.

"It was a large bang noise and then the cops and ambulance and fire all came." It sounded like a bomb - it was a big noise."

Terrance Matthews, who works at ABC Tissue on Roscommon Rd, said a set of roller doors about 12m by 8m shook violently.

"I thought someone had hit one of the columns, it was so violent, and we are like a kilometre away."

TransDiesel service adviser Peter Swann said his office building "shook like crazy".

"We thought it was a plane gone down."

A man who works around the corner from the factory also said the explosion shook his office.

"And massive pieces of debris were visible in the air immediately afterwards. There was a strong smell of gas in the area as well," he said.

Earlier, a St John Ambulance spokesman said four people received minor injuries in the blast, and another person was being assessed nearby for asthma-related symptoms.

The Fire Service said in a tweet the explosion was "huge".

Specialist fire investigators and dozens of emergency crews were sent to the scene following the blast. Roads around the site were closed for a time.

A WorkSafe NZ spokesperson said it had been notified about the incident and was investigating. "WorkSafe is not making any further comment."

Salters Cartage is owned by Ronald and Natalie Thomas, according to public records.

It specialises in waste oil collection and recovery; shipping and marine collection and recovery; oil disposal; fuel and chemical delivery and hazardous liquid storage.

[http://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=11513378](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11513378)