

# Tank and Petroleum Use Mishaps

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

## **USA, AZ, CHINLE**

**SEPTEMBER 1 2009.**

### **EPA ORDERS CHINLE, ARIZ. GAS STATION TO CONTINUE CLEANING UP FUEL SPILL ORDER REQUIRES ALL PARTIES INVOLVED TO PARTICIPATE AND COOPERATE IN CLEAN UP EFFORTS**

The U.S. Environmental Protection Agency ordered Pic N Run gas station in Chinle, Ariz., located on the Navajo Nation, to continue the clean up of approximately 15,000 gallons of petroleum fuel accidentally released at the site.

In spring 2005, a subcontractor working at the Pic N Run gas station, located on Route 7 near the entrance to Canyon de Chelly, punctured the underground fuel line leading to newly-installed above-ground storage tanks. In fall 2005, Pic N Run gas station operators discovered the release to the environment from the fuel line, which resulted in up to seven feet of free gasoline product in wells at the site.

"The accidental release that occurred at this facility demonstrates the critical need for careful management of gasoline. Human error can result in both environmental and financial impacts," said Jeff Scott, the EPA's Waste Division director for the Pacific Southwest region. "Working in coordination with the Navajo Nation EPA, we requiring that all the parties involved work cooperatively together to make certain the environment and public health are protected."

The Order requires Pic N Run to take responsibility for the cleanup at the gas station, and also requires the facility's leaseholders and Pic N Run's contractors to participate and cooperate with the EPA, the Navajo Nation EPA and Pic N Run in these efforts. Under the order, Pic N Run must assess the site, continue cleaning up the gasoline, and undertake corrective action at the EPA's direction.

<http://yosemite.epa.gov/opa/admpress.nsf/0/4f7c5d07c5769c44852576230062c594?OpenDocument>

## **USA, IA, DES MOINES**

**SEPTEMBER 2 2009.**

### **DIESEL SPILL MAY NOT HAVE BEEN ACCIDENT MAN ALLEGEDLY DUMPED FUEL AFTER TRYING TO SELL TANK.**

*John Mangalonzo*

Fire crews in Burlington and West Burlington spent nearly three hours Monday cleaning up what initially was thought to be a diesel spill caused by a Dallas City, Ill., man who appeared to have driven a pickup hauling a large fuel tank with its valve open.

Perhaps it was not accidental. Authorities received information from employees at Alter Scrap Metal Processing, 2101 West Burlington Ave., who reportedly told police Jim Trout, 61, was at the scrap yard earlier in the afternoon and attempted to sell the rusty tank -- 27 feet long and 8 feet in diameter -- as scrap metal.

He is now facing 18 citations, issued by an Iowa Department of Transportation vehicle enforcement officer. Details of the violations were not immediately known.

Department of Natural Resources is expected to look into the incident as well.

Alter employees told police they inspected the tank Trout brought in and found there was approximately 100 gallons of diesel fuel still left inside and refused to buy the tank.

"They say the guy pulled across the road from their place, and they said they saw him open up the valves and take off down the road and started dumping the diesel fuel on the roadway," said Burlington Police Sgt. Joel Larkins.

Police said they were called at 4:06 p.m., shortly after Trout left Alter.

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Trout went north from West Burlington Avenue to Plank Road. Due to construction north of Burlington, the man pulling the large tanker with a pickup turned around and passed Alter again.

A Des Moines County Sheriff's deputy found Trout and his truck on Roosevelt Avenue near the 2600 block of Agency Street where a traffic stop was conducted.

A Burlington Police officer assisted and immediately noticed several violations from the way the tank was being transported and nonuse of safety chains, among other things, prompting a call to DOT.

"He must have stopped somewhere and shut the valve (off) because there was no spill on Roosevelt (Avenue)," Larkins said.

Burlington Fire Department Battalion Chief Bruce Workman said crews arrived six minutes after the call was received. The last truck left the cleanup operation at 7:08 p.m.

"It (the spill) covered a mile and a half but not a steady stream, but intermittent streams covering about half that distance," Workman said.

It is unknown how much diesel fuel, if any, was left inside the tank.

Police said the trailer and the tank have been cordoned off in a private parking lot. It cannot be moved until Trout, who said he got the tank at no cost in Biggsville, Ill., can assure authorities it can be safely transported.

And that includes emptying it.

<http://www.thehawkeye.com/Story/Diesel-090109>

## **NEW ZEALAND, KARORO GREYMOUTH**

**SEPTEMBER 4 2009.**

### **MAN KILLED IN GREYMOUTH TANK EXPLOSION NAMED**

Police have named a subcontractor who was killed when the bitumen storage tank he was working to make safer exploded.

He was Kieran John Hudson, 21, of Greymouth.

Police said he was welding on the top of the 18,000 litre tank at the Fulton Hogan Bitumen plant in Main South Road, when it exploded about 9.40am.

Mr Hudson, who had been working to extend guard rails, died instantly.

Fulton Hogan New Zealand chief executive Bill Perry said he understood none of the other people working near the tank were injured .

The accident was a great tragedy, he said.

The company would be working with authorities to find out the cause.

"Emergency services are attending at the moment and myself and other senior managers are on the way to Greymouth.

"The Labour Department have been notified and we will be carrying out a full investigation over the next few days."

A man, who was about 600 metres from the explosion, said a piece of vent flew off the tank and left a big hole in his workplace roof.

"It sounded like a bloody sonic boom going through the place," the man, who did not want to be named, told Stuff.co.nz.

A man who worked at Coast Glass, about 250m away from the site, said the explosion was "like a bomb going off".

"All we just heard was a big blast," Jarrod Roberts told the website.

"You could just feel the waves coming towards you - it shook everything."

<http://www.odt.co.nz/the-regions/west-coast/72579/one-dead-after-greymouth-explosion>

## **PROCESS SAFETY BEACON**

**SEPTEMBER 2009.**

### **OVERFLOW + IGNITION = TANK FARM FIRE! (PART 1) – STORAGE TANK CONTAINING A FLAMMABLE LIQUID OVERFLOWED**

A large storage tank containing a flammable liquid overflowed. The spill was not detected until a security guard noticed a strong odor. He immediately reported his concern to operations personnel. Two operators responded, driving a truck to the area to investigate. Within minutes, there was a loud explosion followed by a fire. It is believed that the truck provided the ignition source. It took emergency response personnel a day and a half to extinguish the fires which spread through the tank farm. More than a dozen employees were hospitalized and there was significant

523, 524, 525, 526, 527, 528, 529, 530, 531

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property damage. The incident investigation found that the tank was being filled and, unknown to the operators, the tank level gauge AND the high level alarm had failed. The operators did not monitor the filling operation closely because they believed that the tank still had plenty of capacity.

[http://www.aiche.org/uploadedFiles/CCPS/Publications/Beacon/BeaconEnglish\(1\).pdf](http://www.aiche.org/uploadedFiles/CCPS/Publications/Beacon/BeaconEnglish(1).pdf)

## **USA, MO, WEBSTER COUNTY**

**SEPTEMBER 8 2009.**

### **SEYMOUR FIRE TOUCHES OFF EXPLOSIONS**

*Kevin Schwaller*

A Webster County man is safe after a fire burnt down his workshop and caused several explosions.

Authorities estimate the blaze drew more than 50 emergency workers to the scene about three miles north of Seymour, Missouri.

Ashes and charred metal are all that's left of a dangerous situation. As firefighters battled flames on a Webster County property Monday morning, they knew hundreds of gallons of fuel rested nearby.

"I could feel the heat plum down here to the house," said Richard Dinwiddie, the property owner.

"The gas tank did BLEVE," said Asst. Chief Larry Reeves, of the Webster County Fire Protection District.

Reeves says when the flames reached one of the tanks it exploded, sending a fireball about 200 feet into the air.

"The owner said he was transferring fuel in from one tank to another," said Asst. Chief Reeves.

Dinwiddie was in his workshop when the fire broke out. He says a spark from a transfer pump set a gas can on fire and started the place ablaze.

"It scared me, in fact my legs are still shaking," said Dinwiddie.

Dinwiddie says when the fire started, an MFA Oil truck was still inside, filled with 600 to 800 gallons of gasoline.

"I just hit her in reverse and went backwards and got it out, took it up to the county road and left it," Dinwiddie said.

"If he hadn't got that truck out we would've had a mass incident take place," said Reeves.

Even after getting out the gas truck, Dinwiddie went back into the shop.

"I had to get my 08' truck out," Dinwiddie said.

He had to save his pickup.

"I had about \$10,000 to \$15,000 worth of tools in [my shop]," said Dinwiddie.

Despite the loss, Dinwiddie and his family are happy no one was hurt.

"I'm alive and that's the good part," said Dinwiddie.

Dinwiddie says he'll replace the tools one by one, but at 72, he's in no hurry.

Five different departments responded to the fire. A neighbor says he heard a boom from about a quarter mile away.

Firefighters say other chemicals caused several small explosions in the fire. Dinwiddie works for MFA Oil part time. He says his property has been in the family for about 150 years.

<http://ozarksfirst.com/content/fulltext/?cid=183352>

## **USA, OH, SALT LAKE CITY**

**SEPTEMBER 12 2009.**

### **DIESEL FUEL LEAKS INTO STORM DRAIN**

Salt Lake City fire and Health Department crews were working Friday afternoon to stop diesel fuel from leaking onto Interstate 15 and into valley storm drainage. Fire spokesman Mark Bednarik said a hole in a diesel tank was allowing the fuel to leak onto northbound lanes of the freeway near 2100 South. It was not immediately clear what caused the hole in the tank, nor how much fuel had leaked out, Bednarik said. Hazardous-materials crews quickly stopped the fuel from further dripping into drainage systems. Salt Lake Valley Health spokeswoman Kate Lilja said there was no significant environmental damage from the leak. While the fuel did leak into the storm drain, she said it did not reach a drainage pond, so it did not pose a threat to the public and that it would be fairly simple to clean up.

[http://www.sltrib.com/News/ci\\_13317719](http://www.sltrib.com/News/ci_13317719)

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## USA, TX, SAN ANTONIO

SEPTEMBER 16 2009.

### FUEL TANK BLAST BURNS MAN AT S.W. SIDE HOME

A 46-year-old man suffered second- and third-degree burns over 35 percent of his body Monday morning when an old fuel tank exploded at his Southwest Side home, authorities said.

Henry Perez was flown to Brooke Army Medical Center around 9:30 a.m., when lingering fuel or fumes caused an explosion in the 12000 block of Briggs Avenue, according to Bexar County officials.

Perez, a co-pastor of Galvan Revival Church, was cutting old tanks that he believed to be empty to use for scrap metal when his son, 25-year-old Encarnacion Perez, heard a loud noise. "I heard a big boom and ran outside," Perez said. "He was breathing and walking, but you could tell he had a shock."

[http://www.mysanantonio.com/news/local\\_news/59293517.html](http://www.mysanantonio.com/news/local_news/59293517.html)

## NEW ZEALAND, HAMILTON

SEPTEMBER 16 2009.

### WORKER DEAD IN FUEL TANK EXPLOSION

Mr Crown had just started work on dismantling this tank when it exploded. Frantic workmates failed to save a man who was killed when a fuel tank exploded in the Hamilton suburb of Pukete today. The man had just started work on dismantling a tank in Kamiro St shortly after 2pm when it exploded and he was hit by a flying lid. The Fire Service's Waikato area commander, Roy Breeze, said it was believed that the man had been using welding gear which ignited petrol fumes in the tank causing the explosion. The man's workmates tried to resuscitate him and ambulance officers and firefighters worked on him for some time but he could not be revived. Mr Breeze said the tank was one of several being broken down for scrap metal. "It looks like he started to work on this tank, probably with a gas torch, and the tank has exploded," Mr Breeze said. "Part of the tank has hit the person. "When you get an enclosed container that has had even the smallest amount of flammable liquid in it, and then to introduce a flame or spark or something like a gas cutter, you are asking for a huge explosion." He said the tank looked like it had been opened with a can opener. Police said the man's name would be released when relatives had been told. The Department of Labour was investigating.

<http://www.stuff.co.nz/nelson-mail/news/national-news/2867446/Worker-dead-in-fuel-tank-explosion>

## BELIZE, BELIZE CITY

SEPTEMBER 16 2009.

### BUTANE EXPLOSION BLOWS DELIVERY MAN TO BITS.

*Jacqueline Godwin*

This morning at 10:00, residents within a three block radius of the corner of Mopan and Mahogany Streets in the Lake Independence area of Belize City heard a massive "boom". Many reported feeling their house shake and almost everyone we spoke to thought it was a hand grenade tossed somewhere very close to them. But they were wrong; the thundering boom was the sound a 50 pound butane cylinder exploding at Brown's Butane Service. That alone is frightening, but the tragedy is that an employee of Brown's who was handling the tank when it ruptured was killed by the force of the explosion.

7News was on the scene and here's more.

#### ***Jacqueline Godwin Reporting,***

"Twenty five year old Elton Herrera, an employee of Brown's Butane Gas Service was carrying the fifty pound cylinder when it exploded – and exploded into the air like a rocket – hurling Herrera to his death. His mangled remains were strewn across the street. Neighbours say was he launched like a projectile, across the street and into the air as high as 20 feet. Some of his internal organs were found a block away near the canal.

"He was literally blown to bits as hundreds of droplets of the victim's blood were splattered one of the company's delivery trucks and two other vehicles parked by Brown's Butane Gas Service on Mopan Street.

#### **Michael Middleton, Operations Officer – Fire Department**

*"He was filling a tank, I understand they placed it in the back of the pickup truck for delivery and they found out that it was leaking and he went into remove the leaking tank and that is when the bottom of the tank gave way, threw him some 75 feet away and the tank carried on two blocks."*

That's two blocks, plus a canal– which adds up to about 500 feet between where it was launched from and where it finally landed and destroyed this wooden veranda of this one storey house at the corner of Sarstoon and St. Jude Street. Luckily no one was home at the time. When the cylinder was examined by fire officials they noticed that the bottom of the tank was completely gone.

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**Michael Middleton,**

*"From what we observed, first of all we noticed that the tank was basically rusty and when we found it we did an inspection of the tank and what we found is that the tank seems to have been re-welded; a new bottom seems to have been placed on it and what happened is probably the original bottom had a hole and the owner had it repaired by removing the old bottom and had another bottom placed on it and that was basically the weak spot and that gave way."*

**Walter Brown, Spokesperson - Brown's Butane Service**

*"I don't know if it was welded. I didn't see it, I wasn't here. However if it was welded I am sure they would not have filled it. So if somebody says it is welded, I don't know. I would have to look. I haven't been able to do that yet. But we would not fill a welded tank and we don't weld any around here."*

According to Walter Brown he was not present when it happened, but the company did inspect the cylinder before it was filled and at that point everything appeared normal.

**Walter Brown,**

*"This is the line that goes from the tank that we are going to fill but it also has a pressure, it can pressure the tank so we put it into the valve, put the valve into the tank, and we put it on with just pressure, no gas comes out. If it works, it doesn't leak or anything like that, and then we take the water and do the bottom and check the bottom, the sides, and the valves and if everything is okay then we fill it. From my investigation just now and talking to people around here, they tested the tank before they filled it."*

**Jacqueline Godwin,**

*"So what happened?"*

**Walter Brown,**

*"Like I said I wasn't here, I don't know but if I don't know it is not right for me to comment on that. However it is a tragic accident. The best we can do is convey our condolences to the family. If we could change it, we would."*

Four hours earlier Elton Herrera was only three blocks away at home having breakfast. According to Yvonne Dyer and Gregorio Herrera they heard the explosion but never thought that their son's life had just ended.

**Yvonne Dyer, Mother**

*"Well he usually gets to work for 8 o'clock and so he left before 8."*

**Jacqueline Godwin,**

*"How long has he been working with Brown's Butane?"*

**Yvonne Dyer,**

*"Probably about two to three months. He usually just delivers so I don't know. He is not a person that talks a lot so I don't know. He complains now and again but he is not somebody who talks a lot."*

**Jacqueline Godwin,**

*"So when you heard the explosion this morning, this is the last thing you would have expected to hear about your son?"*

**Yvonne Dyer,**

*"Yes ma'am because I don't know he worked with the gas part, I just know he delivers so I didn't know. I just heard the explosion and I came out and I said maybe it was a blow-out but then a little while after that I smelt gas and so one of his friends came and told me it is Elton, he is dead."*

**Gregorio Herrera, Father**

*"I was sitting right over here and he was sitting over here eating breakfast and like I said, I wake up with a funny feeling this morning. I just watched my son in his face and it is like I said, he said to me, 'Daddy why you the watch me.' I said I don't know son. I told him I was running a little joke but then after breakfast he said he was going and I said alright. I didn't know that was the last time I would see my son alive."*

*I heard the explosion but what I didn't know, a few moments after I smelt gas and then one of his friends run to come tell me that Elton dead. I didn't say nothing, I sit down same place and I never even got up."*

But is Brown's Butane Gas Service responsible for the death of Elton Herrera?

**Walter Brown,**

*"I don't think we are responsible. First thing, we don't own the tanks. The tank is the private property of whoever it is that we are filling."*

**Michael Middleton,**

*"Jackie this should have never occurred. In the past we had many dialogue with all the butane companies and safety as you know is one of the fire service's main issue but from our point of view, these butane companies, they seem*

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*to be very negligent. They do not worry about safety, all they worry about is profit and I am not knocking where the incident happened, I am not knocking Mr. Brown. I am putting it out there that butane companies, all butane companies operating in Belize need to be more safety conscious."*

**Walter Brown,**

*"We did what we were supposed to do, we tested it before we filled it. It would appear that after they filled it, they found that it could not take the pressure and they were taking it out as understand, they were taking it off the truck when the accident happened."*

**Jacqueline Godwin,**

*"But that couldn't have been determined before during inspection?"*

**Walter Brown,**

*"No it wouldn't come out. When you fill the cylinder then whatever other weakness it had would come out then. But if you just pressurize it under normal circumstances, if it is not weak you would not see anything."*

**Michael Middleton,**

*"The company said they tested the cylinder, they said it passed their test, I will argue with that. But from what our inspection shows, the tank had a fault. Maybe the company overlooked but from what we can see the tank did have a fault and should not have been filled."*

**Walter Brown,**

*"We do not own any tanks. So this is the point we have to make; we don't own any tanks. We don't recycle tanks. All the tanks belong to somebody and now we have to go pick it up, test it, fill it, and take it back."*

But what is not disputable is that a tank that more than likely was welded exploded and claimed the life of Elton Herrera. It is a tragedy that the National Fire Service has been sounding its alarm for quite sometime.

**Michael Middleton,**

*"Be safe inspect your tanks. If tanks come in rusty, if they come in with leaks, do not fill these tanks."*

Elton Herrera's family believe the company could have prevented their son's death.

**Yvonne Dyer,**

*"It is an accident as far as I see it. It is an accident but probably they are responsible in some kind of way because you are supposed to know what somebody does or what they can't do. But as I am concerned it is an accident and I guess that is how it is supposed to be. But I think they are kind of responsible some way. They are responsible because if you are not trained to do gas, you are not supposed to put somebody to do it. I think you should be trained to go around gas."*

**Jacqueline Godwin,**

*"So you're saying your son never had the experience to fill the tanks?"*

**Yvonne Dyer,**

*"I don't know, I don't really know. He never said anything about filling tanks before so I don't know."*

**Gregorio Herrera,**

*"If that's the way, if those cylinders are not properly secured before then they shouldn't fill it and a man like whom he is in the gas industry for years, he should know or have somebody out there with experience to check these cylinders and see if they are sealed properly and things like that right."*

Elton Herrera had just started working at Brown's Butane Gas Service two to three months ago. Jacqueline Godwin reporting for 7News.

It is important to note that there was no spark or flame which ignited the tank. Once the bottom of the tank ruptured – the gas escaped rapidly into the air, expanded and caused the rocket-like explosion. So what about that Butane depot in your neighbourhood or those in residential areas all across the country? Well, today's tragedy has certainly caught the attention of the authorities to what they consider to be a major public safety issue.

Tomorrow morning at 9:00, a meeting will be held at City Hall with the Fire Department, NEMO, and the BDF. Presently, the Fire Department and the Department of the Environment approves and inspects butane depots.

Late this evening Brown's Butane Gas Company issued a press release in which it expresses its condolences to the Herrera family for the loss of their son. According to the company, in more than twenty years of operation, they have had a clean safety record and this is the first major incident.

And according to Brown's Butane Gas Company, each empty tank which is brought in for filling is checked for leakage and the integrity of its structure. It is first pressurized and scrutinized carefully before being filled and the company states that it maintains a strict policy of refusing to fill tanks which are corroded or damaged in anyway.

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Meanwhile the National Fire Service continues the investigation and is scheduled to meet with the police on Tuesday to determine whether or not any charges will be levied against brown's butane gas company.  
<http://7newsbelize.com/sstory.php?nid=15015>

## **USA, FLA, JACKSONVILLE**

**SEPTEMBER 16 2009.**

### **CSB RELEASES FINAL REPORT ON T2 LABORATORIES EXPLOSION**

The massive December 2007 explosion and fire at T2 Laboratories in Jacksonville, Fla., was caused by a runaway chemical reaction that likely resulted from an inadequate reactor cooling system, investigators from the U.S. Chemical Safety Board (CSB) said in a final draft report released on September 15. The board is to vote on the report findings and recommendations at a public meeting in Jacksonville on Tuesday evening, September 15.

Concluding that T2 did not recognize all of the potential hazards of the process for making a gasoline additive, the report calls for improving the education of chemical engineering students on reactive chemical hazards. The explosion and fire on December 19, 2007, killed four T2 employees and injured four others. In addition, 28 people working at nearby businesses were injured when building walls and windows blew in. The blast sent debris up to a mile away and damaged buildings within a quarter-mile of the facility.

"This is one of the largest reactive chemical accidents the CSB has investigated," said chairman John Bresland. "We hope our findings once again call attention to the need for companies to be aware of how to control reactive chemical hazards." In 2002 the CSB completed a study of reactive chemical hazards, which identified 167 accidents over a two-decade period and made recommendations to improve reactive chemical safety.

The draft report on the T2 Laboratories explosion calls on the American Institute of Chemical Engineers (AIChE) and the Accreditation Board for Engineering and Technology (ABET) to work together to include reactive chemical education in baccalaureate chemical engineering curricula across the country.

The CSB found that although the two owners of the company had undergraduate degrees in chemistry and chemical engineering, they were nonetheless likely unaware of the potential or the consequences of a runaway chemical reaction. The CSB noted that most baccalaureate chemical engineering curricula in the U.S. do not specifically address reactive hazard recognition or management.

Chairman Bresland said, "It's important that chemical engineers recognize and are aware of the proper management of reactive hazards."

Investigation supervisor Robert Hall, PE, said, "Our recommendations aim to address the gap in the chemical engineering curriculum. If future chemical engineers are given the proper educational tools, they will be able to more fully comprehend the hazards that exist during a chemical manufacturing process."

The draft report and safety recommendations will be considered for approval by the board at a public meeting on September 15 in Jacksonville. The meeting will begin at 6 p.m. at the Marriott Hotel located at 4670 Salisbury Road. All findings, causes, and recommendations remain preliminary pending approval by the board. The board will ask for public comments on the investigation at the public meeting.

The CSB also on September 15 released a 3-D computer animation depicting the events that led to the accident. Following approval of the report, the CSB plans to release a new nine-minute safety video, "Runaway: Explosion at T2 Laboratories," containing the 3-D computer animation and a description of the causes, consequences, lessons, and recommendations resulting from the accident.

The accident occurred during T2's production of MCMT, a gasoline additive, which the company manufactured in batches using a 2500-gallon reactor. On the day of the accident, T2 was producing its 175th batch of the chemical when operators reported a cooling problem.

Hall said, "Despite a number of near-misses during earlier production efforts, T2 failed to recognize the underlying runaway reaction hazard associated with its manufacturing process."

Chemical testing by the CSB found that the recipe used by T2 created two exothermic, or heat-producing, reactions; the first was an intended part of producing MCMT but the second, undesired reaction occurred if the temperature went above 390 degrees Fahrenheit, slightly higher than the normal production temperature. The cooling system likely malfunctioned due to a blockage in the water supply piping or a valve failure. The temperature and pressure inside the reactor began to rise uncontrollably in a runaway chemical reaction. At 1:33 pm, approximately ten minutes after the initial cooling problem was reported, the reactor burst and its contents exploded.

The CSB is an independent federal agency charged with investigating industrial chemical accidents. The agency's board members are appointed by the president and confirmed by the Senate. CSB investigations look into all aspects of chemical accidents, including physical causes such as equipment failure as well as inadequacies in

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regulations, industry standards, and safety management systems.

The board does not issue citations or fines but does make safety recommendations to companies, industry organizations, labor groups and regulatory agencies such as OSHA and EPA. For more information, visit [www.csb.gov](http://www.csb.gov).  
<http://www.reliableplant.com/article.aspx?articleid=20022&pagetitle=CSB+releases+final+report+on+T2+Laboratories+explosion>

## **NEW ZEALAND, HAMILTON**

**SEPTEMBER 16 2009.**

### **POLICE NAME WORKER KILLED IN TANKER BLAST**

*James Ihaka*

Police have named a man who was killed when a disused fuel tanker he was working on exploded in the Hamilton suburb of Pukete.

He was Kenneth Joseph Crown, 55, who was a metal recycler from Hamilton.

Firefighters and ambulance staff were called to the blaze at Petroleum Services' dangerous goods yard in Kaimiro St, Hamilton, at 2.10pm yesterday.

The yard stores recovered underground tanks and LPG and petroleum tankers.

Mr Crown had just started work on dismantling a tank when it exploded and he was hit by a flying lid.

The disused 5000-litre petroleum container had "cut up for scrap" written in pink spray paint on it.

"It looks like he started to work on this tank, probably with a gas torch, and the tank has exploded," Waikato fire area commander Roy Breeze said.

"When you get an enclosed container that has had even the smallest amount of flammable liquid in it, and then to introduce a flame or spark or something like a gas cutter, you are asking for a huge explosion."

Petroleum Services manager David Kraakman said Mr Crown was working as a contractor for a company called CMA Recycling at the site in Pukete.

"We're very sorry for his loss. We have a very good safety record and there's no way an event like this should have happened at one of our sites.

"I personally didn't actually know the guy, and I think he'd only been working at the site on Monday and Tuesday.

"I understand he was very experienced at what he did," Mr Kraakman said.

A spokesman from Hamilton-based CMA Recycling said it would release a statement later today.

Witnesses reported seeing Mr Crown's colleagues rush to the scene and try to extinguish the flames and perform CPR on him. But he died at the scene.

Engineer Mark Bate, who works at neighbouring site Voyager Trailers, was outside his workshop when he was nearly knocked off his feet by the explosion.

"The tank actually jumped off the ground, you know ... everyone in here could feel it. The whole thing gave me a hell of a fright," he said.

"I started looking over the fence and these guys started running out there with fire extinguishers and that but our boss came and dragged us out the front for a safety assembly."

At the same time, Mohammed Javed was across the road in a warehouse about 80m away from the blast. He and a colleague were setting up shop at their new premises.

"The force of the blast actually penetrated the walls here and for a while I thought the roof was going to cave in," he said.

"We went over and took a look and the guys there did a good job extinguishing the flames but you could see this guy lying in a pool of blood ... it's not a good way to start for us out here."

Police, fire and Department of Labour investigators were still onsite early yesterday evening.

Petroleum Services, which says on its website that it is an oil industry specialist, did not return calls yesterday. Signs outside the plant show the building and land are up for lease.

[http://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=10597572](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10597572)

## **USA, PA, FRANKLIN CO, CHAMBERSBURG**

**SEPTEMBER 19 2009.**

### **OIL SPILLS INTO FALLING SPRING CREEK**

*Roscoe Barnes III*

Franklin County firefighters worked feverishly Thursday to stop an oil spill in Falling Spring Creek that  
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originated with Knouse Foods Inc., according to Emergency Service Chief Terry Osborne.

"Knouse Foods has traditionally used recycled oil in the plant. They heat it up to a certain temperature until they can use it," he said. "The process of heating it produces condensation. They noticed that the condensation coming from the heating process contained oil."

People actually saw a "little bit of oil spill" Wednesday, but Knouse had just paved the parking lot, and they thought it was caused by that, according to Osborne. Late Thursday morning, the condensation went down into the storm drain which empties into the creek across Grant Street, Osborne said: "When they noticed it, they immediately began doing remedial work."

People from the Chambersburg electric plant reported it to the Chambersburg Fire Department. Fire personnel traced it back to Knouse Foods.

Because of the nature of the spill and its origin with the condensation, it's been hard to determine the amount of oil that entered the creek, Osborne said. The extent of the damage also was not known Thursday.

A spokesperson for the Pennsylvania Fish and Game Commission said a report on the incident could be released today.

Around 1:45 p.m. Thursday, fire department personnel were seen laying lines of white, floating Pig Spaghetti Booms across the creek in several places to catch the oil and prevent it from spreading down stream.

About 15 ducks were seen swimming and diving into the slick, oily water which smelled like industrial fumes. Fire personnel moved into the stream wearing rubber boots. The booms, which are used to absorb oil, are made of polyester and polypropylene.

Mike Heck, president of the Falling Spring Chapter of Trout Unlimited, planned to visit the stream this morning. He said the environmental issues would likely involve ducks, wild trout and minnows.

Heck described the area of the spill as "open trout waters." It's not the value part of the stream, or the area that Trout Unlimited has tried to protect through the years, he said.

"It certainly could have been worse if it had happened elsewhere. Hopefully someone will be held responsible for it," Heck said. "Kids play in the stream. They fish in this stream."

Falling Spring Creek is one of four world-famous trout streams in this area. The other three include Big Spring Creek in Newville, the Letort Spring in Carlisle, and Yellow Breaches Creek in Carlisle.

Osborne said he gives Knouse credit for the way the company has handled the matter: "They made all of the government contacts they ought to make. They contacted the Department of Environmental, and the Fish and Game Commission."

Knouse also has a cleanup company, EPS of Harrisburg, which arrived at the scene Thursday afternoon, according to Osborne. They will likely put some water in on the far side of the plant and flush the oil out, and then pick it up using a vacuum truck, he said. Osborne expected them to work through the night.

Knouse Food's Chambersburg Plant is located at 421 East Grant St. According to the company's Web site [www.knousefoodservice.com](http://www.knousefoodservice.com) the local plant was built in the early 1900s and purchased in 1949 as one of the first processing plants for Knouse. The Chambersburg plant's production has always been devoted exclusively to one product - apple sauce, according to the Web site.

[http://www.publicopiniononline.com/localnews/ci\\_13363412](http://www.publicopiniononline.com/localnews/ci_13363412)

## **USA, PA, PHILADELPHIA**

**SEPTEMBER 24 2009.**

### **DEADLY ACID POSES A SAFETY ISSUE FOR SUNOCO**

*Andrew Maykuth*

Sunoco's use of deadly hydrofluoric acid at its Philadelphia refinery has come under scrutiny after a March accident that sent 13 contract workers to the hospital.

The Occupational Safety and Health Administration last month cited Sunoco Inc. for four "serious" violations related to the March 11 incident. Sunoco said the 13 workers had received "precautionary" medical treatment after a 22-pound release of hydrogen fluoride, the gaseous form of hydrofluoric acid.

The U.S. Chemical Safety Board last month announced it was investigating two other hydrogen fluoride releases during the summer at refineries in Illinois and Texas.

"Because of its high toxicity, any loss of primary containment for hydrogen fluoride is a serious matter," said John Bresland, chairman of the board, an independent federal advisory panel.

The United Steelworkers union, which represents many refinery workers, called Aug. 31 for a nationwide phaseout of the gas, known by its chemical formula, HF. Hydrogen fluoride causes skin and respiratory irritation at low

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exposures. In large doses, it is fatal.

"HF is a bad actor," said Jim Savage, president of Steelworkers Local 10-1, which represents workers at Sunoco's Philadelphia refinery. "This is the worst thing we deal with in the industry."

The Steelworkers say that safer alternatives are available for hydrogen fluoride, which is used in about a third of U.S. refineries, including the ConocoPhillips refinery in Trainer and Valero's Paulsboro refinery. HF serves as a catalyst in alkylation units, which produce a high-octane gasoline-blending agent.

The only commercially viable alternative for HF is sulfuric acid, which is less hazardous, but is required in far larger quantities to achieve the same result. The materials are not interchangeable - an alkylation unit is designed to use only one catalyst.

"A mandate for a refinery to switch from hydrofluoric acid to sulfuric acid would result in capital and design costs between \$45 million and \$150 million per refinery, and an increase in operating costs of between 200 and 400 percent," said Bill Holbrook, a spokesman for the National Petrochemical & Refiners Association.

Sunoco has experience with both catalysts at its Philadelphia refinery, a 1,400-acre complex that was formed in 1994 by the merger of the adjacent Girard Point and Point Breeze refineries. Each has an alkylation unit.

Gulf Oil Corp. built the HF alkylation unit about 30 years ago at the Girard Point refinery. The Point Breeze side has a sulfuric acid unit.

Michael G. McKee, the refinery manager, said the sulfuric alkylation unit generated much more truck traffic for the refinery - two tanker loads of acid each day, compared with one delivery a week of hydrofluoric acid. Hydrofluoric acid also produces an alkylate with slightly higher octane, he said.

Sunoco says it recognizes the potential hazards of hydrogen fluoride, but is committed to the material. It has undertaken a \$125 million project to upgrade safety features on the HF alkylation unit.

Sunoco is renovating the unit to use a less volatile form of hydrogen fluoride to reduce the risk of an HF cloud during a catastrophic failure. The improvements also include new equipment to drain the alkylation unit in seven minutes if it springs a leak, averting disaster.

Thomas P. Golembeski, Sunoco's spokesman, said the improvements were not mandated by regulation, but were aimed at addressing public-safety concerns.

"It's basically a discretionary investment in community relations," he said. The project is scheduled to be completed early next year.

The contract workers installing the safety equipment were the ones evacuated on March 11 when alarms signaled a release of hydrogen fluoride.

OSHA attributed the leak to maintenance deficiencies when it cited Sunoco last month for four violations and proposed a \$20,000 fine. Sunoco is contesting OSHA's findings, which also criticized the refiner for neglecting to warn the contract workers about the possibility of leaks.

Al D'Imperio, area director of OSHA's Philadelphia Office, said the Sunoco HF unit has a "history of leaks," which he partly attributed to a design change implemented in 1991, when engineers downgraded the tubing that carries the acid through a heat exchanger. The design change involved replacing expensive Monel nickel-alloy tubes with cheaper carbon-steel tubes.

OSHA said the tubes have a service life ranging from one month to 15 months between failures.

McKee, the refinery manager, said the more expensive tubes had no advantages over the carbon-steel tubes. He said that acid leaks were a recurring problem in the industry and that Sunoco anticipated them by routinely changing the tube bundles.

"We take it very seriously," he said. "We're not supposed to leak."

On March 11, hydrofluoric acid leaked into the heat exchanger, mixed with condensed steam, and then escaped as a gas into the atmosphere through a hole in the steam system.

Golembeski said 22.3 pounds of hydrogen fluoride escaped before the unit was shut down (by comparison, more than 4,000 pounds leaked during a July fire at Citgo's East Plant refinery in Corpus Christi, Texas).

Alarms alerted the Philadelphia workers to evacuate, and none of them were contaminated with HF, Golembeski said. All but one were examined and released. One worker was diagnosed with a preexisting heart condition and remained in the hospital for three days.

Golembeski said the \$125 million project would add more safeguards to the system. "We are eager to complete this project and believe it shows our commitment to being a responsible neighbor," he said.

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But the improvements don't impress Savage, the head of the local Steelworkers union, who is a Sunoco employee.

"I don't want a less deadly form of HF," he said. "It really just needs to go away."

[http://www.philly.com/inquirer/business/20090923\\_Deadly\\_acid\\_poses\\_a\\_safety\\_issue\\_for\\_Sunoco.html](http://www.philly.com/inquirer/business/20090923_Deadly_acid_poses_a_safety_issue_for_Sunoco.html)

## AUSTRALIA

SEPTEMBER 23 2009.

### SAIL-WORLD NEWS. ETHANOL, OR E10 – IT WILL NEVER BE ‘MATES’ WITH BOATS

#### 'OUTBOARD MOTOR REPAIRS CAN BE EXPENSIVE'

It's marketed through Australian Brazilian, European, US service stations as E10, signifying the pump will dispense gasoline with 10 percent ethanol added.

Many 'good things' are claimed for this additive – many it believe burns cleaner, substantially reduces carbon monoxide emissions and green house gases.

Sounds good, right? Wrong! Not if you're boat owner.

Personally, I have found the subject rather confusing and have been fortunate in having some 'gold plated' assistance in delving into the ethanol situation in the form of Gary Fooks.

Gary Fooks is chairman of the Eco-Friendly Fishing Association and a man who has been a consultant to government authorities, boating industry associations and even boat builders.

Despite the fact that has been issuing warnings for some time, Fooks was astounded when he visited the Melbourne Boat Show three months ago and discovered many boat manufacturers remained blissfully unaware of the problems posed by ethanol.

'I spoke with several manufacturers while I was in Melbourne and the vast majority were simply unaware of the problem or failed to recognise any seriousness with it,' he explained, and added 'I feel the main issue is that people are assuming it's an outboard problem.

'But it's actually a hull problem. Most modern outboards can cope with E10, yet very few fuel systems are ready.

'Manufacturers in the automotive industry have reacted somewhat faster and plastics and rubbers with the durability to withstand ethanol's corrosive effects on fuel tanks, hoses, and seals have been developed.

'Sadly, boat manufacturers have been much slower to react and for that reason there are many boats in use today that will succumb to malfunctions that can be attributed to ethanol, be it disintegrating fuel tanks to destroyed fuel lines. 'It's these dissolved elements that get into engines and destroy outboards' he added.

One Queensland boat manufacturer is anything but unaware – Greg Haines, of the Haines Marine Group, says all boats produced by the company, Signature, Traveller, Ensign, Seafarer, Walker Bay and Correct Craft, all carry a sticker prominently placed.

It reads – WARNING The use of fuel containing ethanol may cause damage to your fuel system and/or engine.

'We've been placing this message on all our boats now, probably for the past four-years or so,' Greg Haines said.

So what exactly is the ethanol problem?

Is your engine going to fail, explode, seize? Nothing like that, ethanol introduces its own problems for boat owners.

We've mentioned earlier the 'good side' of ethanol, so let's take a look at its bad side.

Gary Fooks lists what he terms 'three crucial characteristics' associated with ethanol that boat owners should be aware of.

Basically, these three major problems are; it can totally dissolve fibreglass or corrode an aluminum fuel tank, it can 'eat' fuel lines and dissolved elements pass through the best filters into an engine causing fatal damage.

Next it has a very poor shelf life compared to regular petrol.

And third, the ethanol can separate compromising the fuel mixture and releasing a dose of 100% ethanol into fuel systems and engines that can only cope with a 10% dose.

Firstly, it must be remembered that ethanol, although produced from grains such as corn and sugarcane, is actually a strong solvent.

So any old fuel stains and crud in fuel tanks will be dissolved. It's nice that it will clean the tank, but the residue either blocks fuel filters, or passes through the filter and damages engines.

The shelf life area is alone a major problem for boaters; let's face it, few recreational boats are used on a daily basis.

## Tank and Petroleum Use Mishaps

If there's a spell of inclement weather, for instance, a boat may sit unused for weeks. During that time the ethanol evaporates away quickest, leaving 'sour' low octane fuel behind. We know that stale fuel can spell all sorts of gumming and engine problems. The trouble is that the shelf life of E10 is only two weeks!!! Shorter in hot weather or the boat is in the sun all day.

Idle time, especially when there is humidity about will also cause what is known as 'phase separation' ethanol separates, sinking to the bottom of the tank. There is absolutely no way in can be avoided or re-mixed.

So what is 'phase separation'?

Like brake fluid, ethanol is 'hygroscopic', which means it absorbs or attracts moisture. If it absorbs any water, even that from the air, 'phase separation' occurs when the ethanol separates from the gasoline.

The gasoline floats to the top of the tank, the ethanol sinks to the bottom.

When this layer of ethanol builds up to more than a few mm, the fuel pickup tube inside the tank will deliver a dose of near 100% ethanol to hoses, filters and engines that are only rated to handle 10%.

Once phase separation has occurred there is no way to remix the ethanol and gasoline.

This leaves the boat owner with only one option – the fuel tank must be completely drained.

Disposing of the fuel then presents a new problem.

No problems have been revealed with clean, fresh E10 and engines; all outboard manufacturers and distributors state most engines are designed to operate efficiently with 10 percent ethanol added to standard unleaded fuel. (check with your manufacturer for specific advice)

<http://www.powerboat-world.com/Ethanol,-or-E10---it-will-never-be-'mates-with-boats/61595/arc>