



What happens in an actual emergency?

December 6, 1997, 6:30 p.m. - Jim Steele, Investigator with Alberta Environment's Pollution Emergency Response Team (P.E.R.T.) is just sitting down to supper. The telephone rings and the news is not good. There is a "wild" sour gas well east and north of Red Deer spewing what appears to be, a lot of hydrogen sulphide into the air. It's a "Category 2", Jim learns. His first task is to determine hydrogen sulphide concentrations in the immediate and surrounding areas. Supper will have to be postponed.

Jim knows that the local authorities in Red Deer are already setting up Command Headquarters to assist in handling this emergency. Jim quickly calls Ryan, another member of P.E.R.T. who will travel with him to Red Deer and assist with monitoring around the well. Jim also alerts another P.E.R.T. member who will assume responsibility for answering the 1-800 emergency phone line to provide information about the situation and advise people on safety.

Jim and Ryan leave Edmonton, driving south to Red Deer. Once there, Ryan takes the mobile air quality monitoring unit to the well site where he immediately starts sending information to Jim who is at Command Headquarters. Ryan reports that there are elevated levels of hydrogen sulphide in the air.

Based on the air monitoring results and information from the Alberta Energy and Utilities Board (AEUB) team, Alberta Public Safety Services makes plans to evacuate people in the area of the well blowout. Monitoring and communication of information from the site comes into Headquarters continuously. In all, 168 people are evacuated from the area. Everyone is anxious. Phones are ringing steadily. The calls are from people concerned about their families and friends as well as the safety of the livestock and farm animals which had to be left behind.

December 7, 1997, 11:40 a.m. - Good news. The well is shut-in. The source of the hydrogen sulphide is now cut off and the situation will improve. Farmers with cattle in the area are worried that their livestock might be badly affected.



P.E.R.T. continues to monitor the levels of hydrogen sulphide, especially checking low-lying areas where it could settle and give high concentration readings.

2:00 p.m. - The emergency is over. No reports of sick people or animals come in, the concentration levels of hydrogen sulphide are down to a safe range, and people are relieved that the crisis is past.

This incident is one example of an environmental emergency.

Some of the more common types of pollution emergencies in Alberta are:

- transportation spills of hazardous chemicals,
- sour gas well blow-outs,
- dangerous chemicals improperly stored or abandoned,
- pollutants from operating and abandoned industries,
- oil pipeline breaks,
- materials unlawfully dumped at landfill sites, or
- environmental hazards from natural disasters

The following are some examples of pollution emergencies in Alberta over the last few years.

- The 1987 tornado in east Edmonton which destroyed many buildings as well as tanks housing hazardous substances (caustic chemicals for pulp mills, welding gases, etc.).
- The sodium dichromate spill in 1989 on highway 831 which required cleanup and resurfacing of the roadway over a period of three months.
- The highway 22X case where abandoned laboratory chemicals were found on the roadside outside Calgary in 1989.
- The discovery of creosote in the Bow river in Calgary, 25 years after the producing company had ceased to operate.
- The pipeline leak outside of Rocky Mountain House in 1990 which released an estimated 12,000-14,000 barrels of crude oil into the ground.

What are some of the common dangerous materials spilled In Alberta?

- gasoline
- diesel fuel
- sulphur
- caustics
- agricultural fertilizers
- agricultural chemicals
- acids
- industrial chemicals
- oil

How are environmental emergencies handled In Alberta?

Many emergencies are reported by a vigilant member of the public. Signs of suspected danger are reported to either the local authorities in the area or to the provincial P.E.R.T. headquarters in Edmonton using the 1-800 toll-free number.

Members of P.E.R.T. travel to the site of the emergency and meet with local officials such as police, fire department, health officials, and members of AEUB. Depending on the type and size of the emergency, a course of action is decided.

The RCMP or municipal police are in charge of policing. Representatives of the local emergency services attend to their areas - for example, the fire department would control any fire danger. P.E.R.T.'s job is to provide monitoring, expert advice on the pollution levels and hazards, assistance in planning the control of the emergency as well as cleanup. Public Health authorities assess and advise on health-related concerns. If people must stay out of the area, local authorities can close off access (highways and secondary roads) for a short period of time. A request is forwarded to Alberta Infrastructure if primary highways must close for any length of time. Emergencies are handled in a highly cooperative manner by teams of experts trained and experienced in their areas of special concern. Every effort is made to protect the safety of the public and the environment.

Once the immediate danger is dealt with, monitoring continues until safety is ensured. An investigation team starts to work and cleanup begins.

How are spills cleaned up?

There are six steps to the cleanup process:

1. **Identification** – First, the team has to find out what product they are dealing with. The investigation team checks the waybill on the truck or they look carefully for some product identification on the container.
2. **Containment** - When it is safe to do so, they try to stop the spread of the product, if possible, by plugging the leak. Diking with sand or soil to block off culverts, ditches, and other escape routes is the usual procedure. This is particularly important when the material might run into a body of water.
3. **Recovery** - As much of the spilled product as possible is picked up. Depending on the spill, pools of liquid are sucked up by vacuum trucks or soaked up with absorbents such as straw, sawdust, or commercial products.
4. **Cleanup** - All affected soil is scraped off down to the level to where the contaminant has soaked in.
5. **Disposal** - The type of disposal depends on the nature of the product. Experts from Alberta Environment's Pollution Control Division decide on the best and safest methods of disposal. Sometimes the material is returned for reprocessing as in the case of gasoline or diesel fuel. Contaminated soil or snow is sometimes buried at local landfill sites with the permission of the municipal government. Hazardous materials are most often transported by truck to the special waste treatment facility at Swan Hills for safe disposal.
6. **Reclamation** - After a spill, the site needs to be restored to its original state. If contaminated soil is removed, clean soil must be brought in to replace it. Sometimes special additives or fertilizers must be added to make the soil productive again. Pollution Control offers advice on reclamation. As a final step, the area is re-seeded.

What happens when spills of hazardous chemicals are not cleaned up immediately?

Of course the answer to this question depends very much on the contaminating material. Most spills which are not cleaned up immediately contaminate the soil, water and air. When a contaminant pollutes water, the situation is particularly difficult to clean up and speed is essential. Hazardous chemicals can damage vegetation, injure animals, or cause a health and safety hazard to people.

Oil Spills: How do they happen?

Although many people in Alberta worry about oil spills, they are not among the most common environmental emergencies in this province. When oil spills do happen, they are usually on land and are the result of the failure or breakdown of equipment that handles the oil. Since oil pipelines run for thousands of kilometres through and over some very rough terrain, strict design standards must be adhered to. Pipeline operations are under inspection and review continuously, and pipeline companies operate with high safety requirements. As a result, pipelines do not break very often.

The causes of the breaks that do occur are not necessarily associated with poor design of lines or their construction. Earth-moving equipment can sometimes disturb a line, or above-ground parts can be harmed. Natural occurrences such as landslides and floods can also damage pipelines. The most common spills, however, are related to transportation of oil in trucks. Human error accounts for the majority of these accidents.

On a rare occasion, pipeline leaks are caused by an unusual incident. Once, a rifle bullet was fired into an above ground expansion loop of a line. This single shot released 1,300 barrels of crude oil!

Does the polluter always clean up?

In some cases, the polluter or polluting company cannot be found. The company may have gone out of business many years before and there is no one to contact. Then the Pollution Emergency Response Team assesses the situation, plans and oversees the cleanup and reclamation of the site. Provincial and/or municipal governments absorb the costs in such cases.

Sometimes the polluter refuses to take responsibility for environmental damage or for a potentially harmful situation. When such a case is reported, Alberta Environment makes decisions for the appropriate action to contain, clean up, dispose of the harmful materials, and restore the site. If the polluter refuses to begin to pay the costs as the work is done, Alberta Environment takes legal steps to recover the costs from the polluter. The court system is used to ensure that those who cause damage or danger pay the costs for work done to correct the situation.

What to do if you spot a potential problem.

If you discover what you think may be an emergency or a dangerous situation, take steps to **PROTECT YOURSELF FIRST**. Then:

- Get out of the area quickly.
- Contact the Police if there is an accident and the Fire Department if the product is flammable and Alberta Environment (Pollution Control) to obtain advice and further information on hazards and cleanup procedures.
- Don't touch anything or allow your clothing or shoes to come into contact with any substance or its container.
- Report the situation to the police in the area or call Alberta Environment's 24-hour emergency toll free number 1-800-222-6514.

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Alberta Environment - Information Centre

Main Floor, Oxbridge Place
9820-106 St.
Edmonton Alberta Canada T5K 2J6

Phone: (780) 427-2700
(Toll free in Alberta 310-0000)
Fax: (780) 422-4086
E-mail: env.infocent@gov.ab.ca
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