



BP's Steelman Gas Conservation
Facility and Gathering System
A Good Business That Looks
After the Environment



A Proud Story

BP's predecessors built the Steelman Gas Conservation Facility in 1958. Since then, we have expanded several times to its present capacity. The facility currently collects solution gas from over 50 different upstream oil and gas companies – the raw gas coming into the facility amounts to approximately 20 million standard cubic feet per day. The Steelman facility transforms this raw solution gas into approximately 12 million cubic feet of natural gas, enough gas to heat some 38,000 homes per day.

The gathering system that feeds the facility is intricate and wide-ranging. It includes 19 gas compressor stations with over 1000 km of pipelines that connect some 130 batteries. The system gathers solution gas from approximately 6,000 square miles of southeast Saskatchewan.

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Solution Gas Made Easy

Oil producers find natural gas along with crude oil. This raw gas is commonly called solution gas which is dissolved in the oil at reservoir conditions deep beneath the surface. When the oil is brought to the low-pressure surface, the solution gas releases naturally. This raw gas is not in pure form since it may also contain Natural Gas Liquids (NGLs – propane, butane and ethane), hydrogen sulphide and water.

Prior to the construction of the Steelman facility, upstream oil producers flared the solution gas. Now, through the facility and gathering system, BP collects and processes the solution gas and NGLs and puts them into the sales system in Saskatchewan and elsewhere in North America.

Collecting Solution Gas Good for the Environment

By collecting the solution gas, BP has reduced the flaring in southeast Saskatchewan and is improving regional air quality. Flaring the gas increases the emissions and the amount of particulates in the air since flaring may not efficiently combust the gas. Flaring also wastes energy and sales opportunities, since it is possible to transform the raw gas into products customers and consumers can use.

NGLs are also used as an energy source. For example, propane is the fuel of choice for the everyday barbecue while butane is the energy source for lighters.

The petrochemical industry uses ethane to produce ethylene, a product used in the production of consumer goods such as brake fluid, radiator coolant, floor tiles, down pipes, food wrap and plastic packaging

The Steelman facility makes these products possible from natural gas that was previously flared.

Removing Natural Gas Liquids

Once BP receives the solution gas, we “sweeten” the gas by removing any hydrogen sulphide and carbon dioxide. We also remove the water from the gas through a process call “dehydration.”

The next process is called “chilling” where our technicians refrigerate the gas to separate the methane from the NGLs. In this process, we use special equipment to achieve temperatures as low as –90 degrees celsius. We then send this super-cooled stream to a distillation tower to separate the methane from the raw gas mixture.

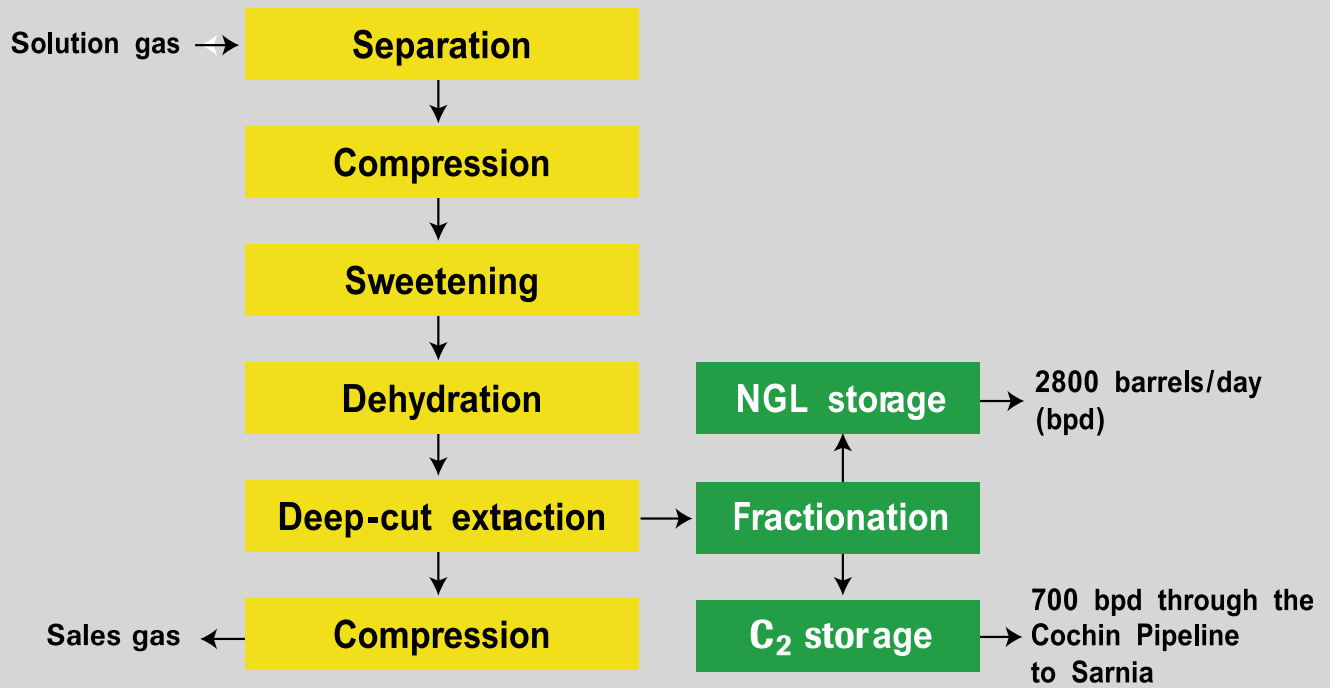
Our specialists remove the remaining components, mostly ethane, propane and butane, from the bottom of the tower. We pump these NGLs to another tower and separate the ethane from the rest of the liquids. The end products are liquid ethane and an NGL mixture of propane and butane.

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Every day the Steelman plant transforms raw incoming solution gas into approximately 12 million cubic feet of natural gas, enough natural gas to heat some 38,000 homes per day.

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Steelman Gas Conservation Facility Process Flow Diagram



BP and Safety

Safe Facility

BP's goal is "no accidents, no harm to people, and no damage to the environment."

To help us achieve this goal, we use a systematic approach to ensure a safe working environment. This system also ensures we consider the environment while doing our everyday work.

Safe Gathering System

We take the same systematic approach to ensuring our pipelines are safe.

Our safety effort starts with the selection of pipe – we select the best product. We use corrosion-resistant polyethylene pipe for gathering gas from the oil batteries to our compressor stations. From that point, we use high-pressure steel pipelines.

We rigorously test the steel pipe to ensure it meets our standards. Once we are ready to install the pipeline, we weld the pipe segments together and x-ray the welds to ensure they are complete. Before putting the pipeline into operation, we test it at a higher pressure than would normally exist in the line. This tells us if the pipeline is safe to operate.

After we bury the pipe, we install cathodic protection, a method that uses weak electric current to help prevent corrosion on the pipeline.

BP also has a regular inspection program that looks at the conditions inside our pipeline systems. We also use sophisticated electronic tools called "smart pigs" that travel inside the pipe. They detect dents and metal loss on the pipeline.

Emergency Response

Our Steelman facility and gathering system have emergency response plans.

We develop these with input from our neighbours, local communities, municipal governments, regulatory agencies, police, fire, ambulance and mutual aid groups.

The plans are comprehensive, site-specific and carried out by trained people who care. They help protect the health and safety of our employees and neighbours and also help us protect the environment.

BP updates the plans on a regular basis to ensure we have up-to-date information. We depend on our neighbours to help us with this effort. So, if someone calls you for information, please help to ensure our information is up-to-date. We will respect and protect your privacy.

Help Us Be Safe

If you plan to excavate on or near one of our pipelines, please consider these points:

1. Identify the precise work location. Check records or look for evidence of a pipeline.
2. Visit the site and look for signs of a nearby pipeline or other buried utilities.
3. Call BP and discuss your plans.
4. Ask BP for our pipeline crossing guidelines.
5. Call the Sask 1st Call System at 1-866-828-4888.
6. Be on site with the BP representative when the pipeline is located and know the meaning of the pipeline markers.
7. Hand-expose the pipeline prior to excavation within three metres (10 feet) of the pipe.
8. Notify BP one working day before backfilling over the pipe.
9. Immediately notify BP if you contact the pipe or its coating.
10. Always follow the instructions of BP's representative.

Working Safely Together

We work very hard to live up to our goal of “no accidents, no harm to people and no damage to the environment.” We realize, however, that we need to work together with communities around us to help us achieve our goal. That is why we regularly interact with the community that surrounds us.

Since many of our neighbours work around our pipelines, it is critical to understand the importance of pipeline safety. The next section describes the important points to consider when working around pipelines.

Pipeline Markers

We place the markers at high traffic areas such as road and railway crossings. The markers are near but not necessarily on top of the pipeline or lines. It is important to remember that markers may not tell you the exact location, route, depth or number of pipelines.

Backhoes, bulldozers, hole augers or sharp tools are dangerous ways of finding pipelines. The proper way is to call before you dig two days (at minimum) before doing your work.

The Sask 1st Call “Call Before You Dig” 24-hour, toll-free number is 1-866-828-4888.

Restricted Activities on or Near the Right-of-Way

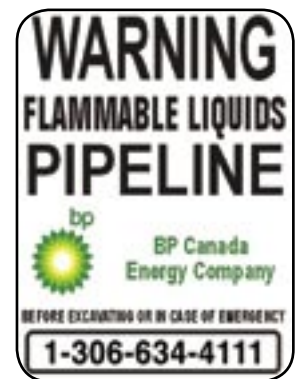
We realize that landowners work around our pipelines. There are, however, restricted activities on or near the right-of-way that are determined by government regulation and by the original easement agreement. These restrictions help protect the safety of our neighbours and our employees.

These include but are not limited to:

- Digging postholes, excavating and using explosives.
- Deep tillage.
- Berming (or piling of soil).
- Building roads, grading soil and installing utilities.
- Driving non-agricultural heavy equipment.

It is also important to note that, for safety reasons, we cannot allow some activities on the right-of-way. These include but are not limited to constructing buildings, piling bales or other material.

It is not our intention to stop you from doing your regular work. Our intention is to ensure our operations are safe for everyone involved.



If An Emergency Happens

Pipeline incidents rarely occur, but they do happen. Since pipelines carry a variety of materials that could be corrosive, inflammable, hazardous or toxic, it is important to know what to do if an incident does happen.

What to Look For

IF YOU **SMELL...**

- An odour similar to gasoline (but stronger), it may be NGLs.
- An odour similar to rotten eggs, it may be sour gas.

IF YOU **SEE...**

- A vapour cloud or frosted ground along a pipeline, it may be an NGL leak.
- A wet patch of yellowish liquid (like the colour of ginger ale), it may be condensate.
- No growth on a very small part of the right-of way directly above the pipeline.

IF YOU **HEAR...**

- A loud hissing or roaring noise, it may mean there is a break in the pipeline.

WHAT **TO DO** IF YOU ENCOUNTER A LEAK

Your first goal is to protect yourself and the safety of those around you.

- Shut off any equipment operating on or near the pipeline.
- Extinguish any tobacco products or any ignited material in the area.
- Shut off cell phones until out of the danger area.
- Walk out of the area immediately (uphill and crosswind) and alert others in the immediate area.
- If possible, move to an area that is 800 metres (1/2 mile) crosswind from the leak.
- As soon as you are safe, call the local police, fire department or emergency response agency.
- Call BP at the contact numbers listed at the back of this brochure.

WHAT **NOT TO DO** IF YOU ENCOUNTER A LEAK

- Do not make sparks or create heat sources that could possibly ignite the leaking products while leaving the area.
- Do not start motorized equipment.
- Do not drive a vehicle through the affected area.
- Do not touch or go near any product that may be leaking from the pipeline.
- Do not turn on or off any lights or appliances powered by electricity, batteries or natural gas.
- Do not use your cell phone in the affected area.



How BP Can Help Our Neighbours Be Safe

We have a team of specialists that will:

- Assist you to excavate or construct on or near the right-of-way.
- Be on-site to properly locate and mark the pipeline or pipelines.
- Guide you on how to work on or near the right-of-way.

We kindly ask that you give us a minimum of two full working days so we may properly respond to your request to work on or near the pipeline right-of-way. Since there may be situations where it takes us longer to respond to the request, please give us as much advance notice as possible.

BP Emergency Numbers

General Enquiries
(Right-of-way issues, compensation, restricted activities)

Don Grossberndt
1-403-233-1677 (call collect)
grossbdr@bp.com

Steelman Facility/Gathering System Contacts
Greg Andrist
1-306-634-4111 (call collect)

Call Before You Dig!!
Sask 1st Call:
1-866-828-4888