

# Taking Care

along the pipelines we operate



## A guide for landowners and neighbours

Joffre Feedstock Pipeline ■ Ethylene Delivery System



Operations



Communities



Products



Environment



**Responsible Care®**  
Our commitment to sustainability.



Operations



Communities



Products



Environment

# Taking Care

Our work at NOVA Chemicals results in plastic products that take care of food, water and other goods vital to life. To enable these products, we must first take care of the people, places, materials and processes that make them possible. We take care with respect to our operations, communities, products and the environment. Taking Care is a way to think and a way to work. It's our particular approach for putting Responsible Care® into practice.

## About this guide

At NOVA Chemicals we care about the safety of our neighbours and landowners, the communities and the environment along the pipeline systems we operate — and at all of our petrochemical facilities.

Our commitment to Responsible Care, which includes Community Awareness and Emergency Response, is aimed at attaining the highest standards for health, safety and environmental performance in all of our operations.



### Sharing information with

**you on how we are “taking care” along our pipelines is a key part of that commitment. This guide explains our approach to maintaining very high standards for pipeline safety and integrity, our emergency preparedness plans, and landowner rights and responsibilities.**

NOVA Chemicals has been operating in Alberta since the 1970s. We work proactively to be a socially responsible neighbour in the communities where we operate and do business.

To achieve this, we continuously seek input and suggestions from our stakeholders.

# We provide high quality, value-added products for our customers worldwide

NOVA Chemicals' mission is to be the leader in innovation that enables our customers to deliver plastic products that make everyday life healthier, easier and safer. Our employees work with a focus on health, safety, security and environmental stewardship through our commitment to sustainability and Responsible Care.

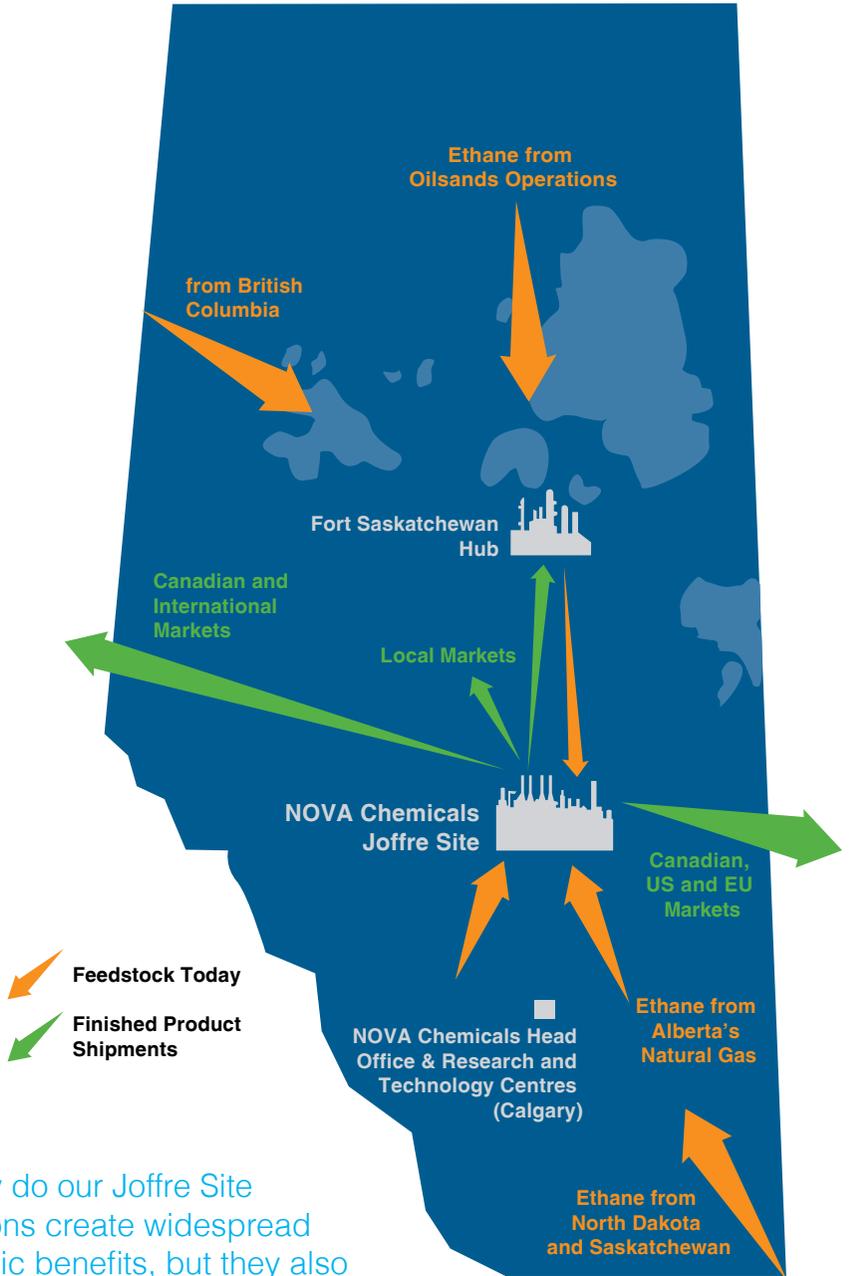
Our world-scale manufacturing facilities in Joffre, Alberta began operations in 1979. This was the foundation for what, today, is one of the largest ethylene and polyethylene production complexes in the world.

Today, NOVA Chemicals has production facilities located in Canada and the United States. We are primarily an ethylene / polyethylene producer. We also have Research and Technology Centres in Canada and the United States. We employ about 2,800 people worldwide.



Using our resins, our customers produce consumer, industrial and packaging products.

# Feedstocks for our Alberta Joffre Site



Not only do our Joffre Site operations create widespread economic benefits, but they also contribute greatly to the production of value-added products.

# The pipelines we own and operate

NOVA Chemicals operates two pipeline systems in Alberta. These systems involve more than 385 kilometres (km) of pipeline that safely transport the feedstocks and products essential to the operations of NOVA Chemicals — and others in Alberta's petrochemical industry. We also own, operate and maintain a number of smaller length pipelines adjacent to our Joffre facilities.

**Joffre Feedstock Pipeline (JFP)** — This 180-km system was commissioned in 2005 to deliver natural gas liquids (NGLs) such as propane from Fort Saskatchewan to our manufacturing facilities at the Joffre Site. As of early 2014, JFP further enhances our feedstock flexibility through delivery of ethane extracted from an off-gas by-product of the oilsands upgrading process in Fort McMurray, Alberta.

**Ethylene Delivery System (EDS)** — We have safely operated this 205-km system for more than 35 years. Each year EDS delivers ethylene produced at the Joffre Site to others in the petrochemical industry from as near as the INEOS Linear Alpha Olefins facility located on our site in Central Alberta, to the Prentiss Site just north of us, and to Edmonton and Fort Saskatchewan.



Our manufacturing facilities in Joffre, Alberta are among the world's largest ethylene and polyethylene production complexes.

# A closer look at the pipelines we operate



Fort Saskatchewan ■  
Edmonton ■

Red Deer ■ Joffre

— EDS  
— JFP

NOVA Chemicals operates two pipeline systems primarily running along the same right of way from Fort Saskatchewan to Joffre.

## Joffre Feedstock Pipeline (JFP)

### *System specifications*

- Length: 180 km primarily along the existing EDS right-of-way
- Diameter: 10 inches (250 millimetres [mm]), High Vapour Pressure (HVP) strength-tested steel pipe meeting all Canadian Standards Association (CSA) and provincial requirements
- Depth: minimum of 1.2 metres below ground
- Maximum operating pressure: 9,930 kilopascals (kPa)
- Surface facilities: A control room located in Alberta, remotely controlled and manual block valves with stations in secured compounds, metering, in-line inspection launching and receiving facilities
- In operation since 2005
- Product transported: ethane and propane feedstock

## Ethylene Delivery System (EDS)

### *System specifications*

- Length: 220 km
- Diameter: varies between 4 – 12 inches (100 – 300 mm), HVP strength-tested steel pipe meeting all CSA and provincial requirements
- Depth: minimum of 1 metre below ground
- Maximum operating pressure: 9,930 kPa
- Surface facilities: A control room located in Alberta, remotely controlled and manual block valves with stations in secured compounds, pump station, metering, in-line inspection launching and receiving facilities
- In operation since 1979
- Product transported: ethylene, a “building block chemical” used at Joffre and other petrochemical complexes in Alberta to make a wide range of consumer and industrial products

# Our commitment: safety, health and environment

We are a Responsible Care company. We are committed to Responsible Care and sustainability in our daily operations as well as our future growth. We operate with regard to the safety and well-being of our co-workers, communities and the environment.

## NOVA Chemicals' culture is built on the ethics and standards of Responsible Care

Responsible Care, launched in 1985 by the Chemistry Industry Association of Canada (CIAC), is the chemistry industry's approach to addressing stakeholder concerns about the

potential effects of chemicals and chemical facilities on human health and the environment. We are committed to minimizing our impact on the environment because it is the right thing to do and is key to the sustainability of our business. For more information, please see: [www.canadianchemistry.ca](http://www.canadianchemistry.ca)



**Responsible Care<sup>®</sup>**  
Our commitment to sustainability.

## Taking Care along the pipelines we operate

Taking Care is NOVA Chemicals' approach to putting Responsible Care and sustainability into practice. Our experienced Pipeline Team of field and technical staff is focused on operating our pipelines with the utmost consideration for public safety, adjacent landowners, environmental protection and pipeline integrity. We also take a proactive approach to communicating and working with stakeholders.



**Taking Care**

We adhere to a strict security management standard to safeguard our facilities. This includes vulnerability assessments of our transportation systems. As landowners and neighbours, you can help us by reporting unusual or suspicious activities.

# Meeting regulatory requirements

NOVA Chemicals operates within all applicable regulatory standards and guidelines.

The Alberta Energy Regulator (AER) governs all activities involving pipeline facilities in Alberta. The primary act that sets standards for the full life cycle of a pipeline is Alberta's *Pipeline Act*.



Moving products by pipeline is the safest, most efficient and environmentally responsible form of transportation. NOVA Chemicals has a consistent record of safe, responsible pipeline operations.

## Information sources:

For applicable Alberta Acts, Regulations and Standards governing pipeline operations contact: Alberta Queen's Printer at [www.qp.alberta.ca](http://www.qp.alberta.ca) or 780-427-4952 (toll free in Alberta by first dialing 310-0000) [www.alberta.ca](http://www.alberta.ca)

The Alberta Energy Regulator's (AER's) Directive 071 covers emergency preparedness and response requirements for the upstream petroleum industry in Alberta — including the pipelines operated by NOVA Chemicals: [https://www.aer.ca/documents/directives/Directive071\\_2005.pdf](https://www.aer.ca/documents/directives/Directive071_2005.pdf)

# Our responsibilities as pipeline operator

Our responsibilities as pipeline operator include:

- pipeline integrity program;
- damage prevention;
- security management;
- safety management;
- public awareness;
- environmental management;
- co-operative working relationships with stakeholders; and
- emergency preparedness and response.

## People, systems and equipment make safety a priority

The pipelines we operate were constructed in accordance with applicable Provincial requirements. Experienced operators monitor each of the pipelines 24 hours per day, 365 days per year. Operators continuously monitor pipeline pressure, temperature and flow conditions.

### Built into the pipelines are essential systems and equipment:

#### **Supervisory Control and Data Acquisition (SCADA) System —**

The SCADA Systems electronically gather flows, temperatures and pressures from the block valve sites located along each pipeline. This information is used by the pipeline operators to make operating decisions. SCADA also relays information to other computer systems, such as the Leak Detection System, and provides data on amounts flowing in and out of the system (material balance).

**Leak Detection System —** These computerized systems immediately sound an alarm condition to the operators if any abnormalities are detected (e.g. more product flowing into the system than out). The systems identify the condition and approximate location of the problem.

**Controlled Block Valves —** In keeping with regulatory specifications, block valves are located regularly along the pipelines. Operators and technicians use these valves to isolate portions of the pipeline for periodic maintenance or in case of an emergency. Block valve stations are located in secure compounds and are checked regularly, in accordance with regulatory requirements.

## Pipeline integrity management

**Inspections** — A sophisticated internal inspection tool called a “smart pig” travels through the pipelines to detect any defects, corrosion or abnormalities. Defects found are assessed and repaired as required.

**Corrosion Protection** — Corrosion protection systems are an essential component in the maintenance of all steel-based pipelines. Cathodic protection systems use a low voltage current along the pipelines to prevent electro-chemical reactions that can cause steel to corrode. All of our pipelines also have special pipe coatings that provide a layer of corrosion protection between the pipeline and soil.

## Damage prevention

**Aerial Patrol** — We use aircraft patrol to fly over the entire length of the pipelines on a regular basis.

**Ground Patrol** — Regular ground inspections are conducted by pipeline technicians who travel the entire route of the pipeline.



Because of our comprehensive pipeline integrity and damage prevention practices, pipeline incidents rarely occur. If a potential problem or leak is detected, maintenance crews, located at strategic points along the pipelines, are dispatched immediately to safely deal with the situation.

## Safety Management Program

As with all of our programs, safety management is an integrated component of our operations, aimed at preventing and mitigating releases of substances from our pipelines. Specifically, safety management involves the identification and mitigation of occupational and industrial safety hazards for the protection of people and property.

NOVA Chemicals has a Security Management Program in place to protect people and assets from third-party impacts that could cause an injury or incident. This includes fenced compounds, locked valves, alarms, cameras and patrols. In the event of an incident, we notify the RCMP.

### Working with others

To ensure public safety, pipeline security and integrity, damage prevention and environmental protection, NOVA Chemicals has established co-operative working relationships with:

- Counties and municipalities through which our pipeline systems run;
- Emergency responders and agencies;
- Industry associations such as North Region Community Awareness and Emergency Response and the Edmonton Area Pipeline and Utility Operators' Committee (EAPUOC);
- Regulatory agencies;
- Neighbouring industry; and
- The Alberta Common Ground Alliance.



## Environmental considerations along our pipelines

**Soil management** — Topsoil is an important non-renewable resource. When excavation activities occur along the pipeline rights-of-way, we ensure topsoil is carefully removed, stored and returned upon completion of work. Conservation and Reclamation Plans for each pipeline make provision for such activities.

**Fugitive emission controls** — Above-ground facilities such as block valves, pig traps or pump stations are monitored to identify and repair any minor leaks.

**Air / Noise management** — Any construction maintenance or operations activities include noise mitigation measures to reduce impacts on neighbours. For example, we minimize flaring at our facilities in consideration of both noise and environmental impacts.

**Waste management** — Any waste generated through the operation or maintenance of our pipelines is handled in a responsible manner, consistent with regulatory requirements and Responsible Care standards.



# Emergency preparedness and response

The pipeline systems have an Emergency Response Plan (ERP) in place to protect people, the environment and assets.

The first priority in any emergency response is the safety of neighbours and employees. Effective communication is critical and ERPs include detailed procedures on notification of the public and others.

We work closely with landowners, residents, community officials, police, fire and other first responders and mutual aid groups to develop these ERPs. They are updated and tested on an annual basis to ensure they are effective. They are posted at: <http://www.novachem.com/Pages/company/pipeline-operations.aspx>. All our personnel understand and know their roles, and the roles of other emergency responders. Drills and exercises are conducted regularly in conjunction with municipal emergency response personnel.

In the event of a pipeline leak or rupture, we notify the local municipality to assist with emergency management and response. Together we direct the community to either shelter in place or evacuate. (Please see inserts for specifics about your Emergency Planning Zone.)

As part of our Taking Care program, we contact residents along our pipelines to provide information on emergency response and to discuss any aspect of pipeline operations.

## Providing your information for ERPs

Our ERPs include information about landowners and neighbours. When we contact you we will ask you for updates such as:

- The key person to contact in the event of an emergency and how to reach that person 24 hours per day;
- The number of people in the home;
- Any special needs of people in the home, including medical conditions; and
- Details about pets and livestock on the property.

To protect your privacy, this information is used only for our emergency response planning purposes and is not shared or used for any other purpose.

# Stakeholder and public awareness — working together

Working co-operatively with stakeholders — from landowners along our rights-of-way to municipal agencies to industry associations — is essential.

NOVA Chemicals has right-of-way agreements with all landowners along the pipeline systems we operate. These agreements outline the obligations of both NOVA Chemicals and the landowner with respect to activities on the right-of-way. Most of the obligations are designed for landowner safety. Our intent is to ensure you have the right to use the land within the right-of-way — without negatively impacting safety.

## Don't hesitate to call us!

We contact all residents along our pipeline rights-of-way to provide information about operations and products carried, potential hazards, and our emergency response plans.

As landowners and neighbours, you are our additional eyes and ears along the pipeline. Through our visits and regular communication, we work hard at building a solid relationship with you. We want you to feel comfortable contacting us for information or to discuss any activities you see or hear that seem out of the ordinary — such as odours, noise, suspicious activities or other disturbances.

**Please call us at any time if you have any questions, concerns or suggestions.**

**NOVA CHEMICALS TOLL FREE:  
1-800-780-6682**

At all road and railway crossings along pipelines and at major water crossings, you will find markers such as the one to the right. These markers are not necessarily on top of the pipeline. It is important to remember they may not indicate the exact location, route or number of pipelines in the right-of-way.



# Before you dig

Unapproved ground disturbances are one of the most common causes of pipeline damage. It is the responsibility of landowners and contractors when operating within the "controlled" area to adhere to regulatory requirements. This area is defined by the Alberta Energy Regulator as 30 metres (100 feet) on either side of the pipeline (measured from the centreline of the pipe).

**Before any ground disturbance of more than 30 centimetres or one foot in this controlled area can take place, it is essential that you:**

- 1. Notify NOVA Chemicals as early as possible about your plans.** We will help determine whether your planned activity constitutes a ground disturbance and provide you with instructions on working near the pipeline. You will need permission from us before you can proceed with any work classed as a ground disturbance.

For more information on how to receive consent to proceed with your work, please see *Guidance for Working Near Our Pipelines* at <http://www.novachem.com/Pages/company/pipeline-operations.aspx> or email us at [MWPipeline@novachem.com](mailto:MWPipeline@novachem.com).

- 2. Contact Alberta One Call** at least two full working days before you dig to ensure that all utility lines are located and marked. As part of this contact, and for your safety, NOVA Chemicals will be sent out to mark the pipeline as necessary — at no cost to you.

[www.AlbertaOneCall.com](http://www.AlbertaOneCall.com) or call toll-free  
1-800-242-3447.



Ground disturbance includes digging, excavating, tilling, trenching, plowing, drilling, tunnelling, auguring, backfilling, blasting, topsoil stripping, land levelling, peat removal, clearing and grading.

# If you suspect a leak . . .

In the unlikely event of a pipeline incident, it is important to know what to do in the event of a leak — or a suspected leak.

**If you see** a vapour cloud (looks like fog), or frosted ground or wilted vegetation near a pipeline, or discoloured snow. . .

**If you smell** an odour similar to gasoline or oil, but stronger. . .

**If you hear** a loud hissing or roaring noise. . .

## Do the following:

- ✓ 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 your cell phone or any other electronic devices until you are well removed from the area
- ✓ Alert others in the area
- ✓ Immediately leave the area — if possible travel uphill, crosswind or upwind from the leak
- ✓ **As soon as you feel you are in a safe location, CALL 911 then our 24-hour emergency number TOLL FREE 1-800-780-6682**

## Do not:

- ✗ Make sparks or create a heat source
- ✗ Start motorized equipment
- ✗ Drive a vehicle through the affected area
- ✗ Touch or go near any product leaking from the pipeline
- ✗ Turn on or off any lights or appliances powered by electricity, batteries or natural gas
- ✗ Use your cell phone in the affected area

**In the event of a pipeline leak or rupture, we notify the local municipality to assist with emergency management and response. The municipality in conjunction with NOVA Chemicals will direct the community to either shelter in place or evacuate.**

# The products in our pipelines

All of the hydrocarbon products carried in our pipelines are slightly heavier than air and normally would tend to accumulate in low-lying areas. In your location-specific information sheet provided with this brochure, we note health information about the products in the pipelines in your Emergency Planning Zone.

The following are some general properties of the products we handle:

**Ethylene** is a gas which occurs naturally. It is emitted by vegetation as a normal part of the growth and development process. Our industry produces ethylene which is an important commodity chemical. Ethylene is an extremely flammable liquefied gas, having a sweet natural gas-like odour at normal temperatures.

**Ethane** is produced from natural gas and the refinement of oil and is used as a feedstock in the petrochemical industry. Ethane is an extremely flammable gas, having a weak natural gas-like odour at normal temperatures.

**Propane** is produced from natural gas and the refinement of oil and is used as a feedstock in the petrochemical industry. Propane for feedstock use doesn't contain odorant (as would the propane available for consumer uses). It has a weak natural gas-like odour at high concentrations and is a flammable gas.







Please contact us at any time if you have any questions, concerns or suggestions about the pipelines we operate, or any of our operations.

**Pipeline Contact Information**  
(24 hours per day — emergency and non-emergency):

**NOVA CHEMICALS TOLL FREE: 1-800-780-6682**

<http://www.novachem.com/Pages/company/pipeline-operations.aspx>

**For community information:**

<http://www.novachem.com/Pages/joffre/joffre.aspx>

E-mail: [joffresite@novachem.com](mailto:joffresite@novachem.com)

**NOVA Chemicals Joffre Site**

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