Taking Care

along the pipelines we operate in Ontario

A GUIDE FOR LANDOWNERS AND NEIGHBOURS

NOVA Chemicals®

Responsible Care®
Our commitment to sustainability.

NOVA Chemicals has been operating in Ontario for over 30 years. 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.

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 high standards for pipeline safety and integrity, our emergency preparedness plans, and landowner rights and responsibilities.

Note: The images throughout this brochure are staged re-enactments.

ABOUT NOVA CHEMICALS

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

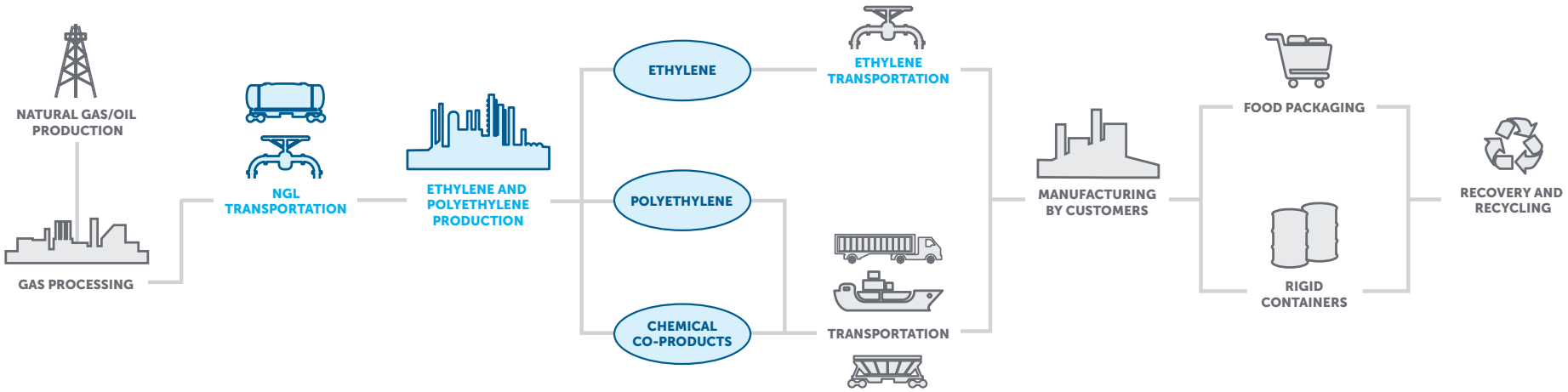
NOVA Chemicals' mission is to be the leader in innovation that enables our customers to deliver plastic products that make everyday life healthier, easier and safer. Our employees work with a focus on health, safety, security and environmental stewardship through our commitment to sustainability and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

NOVA Chemicals has production facilities located in Canada and the United States, including four petrochemical facilities in St. Clair Township in Ontario.

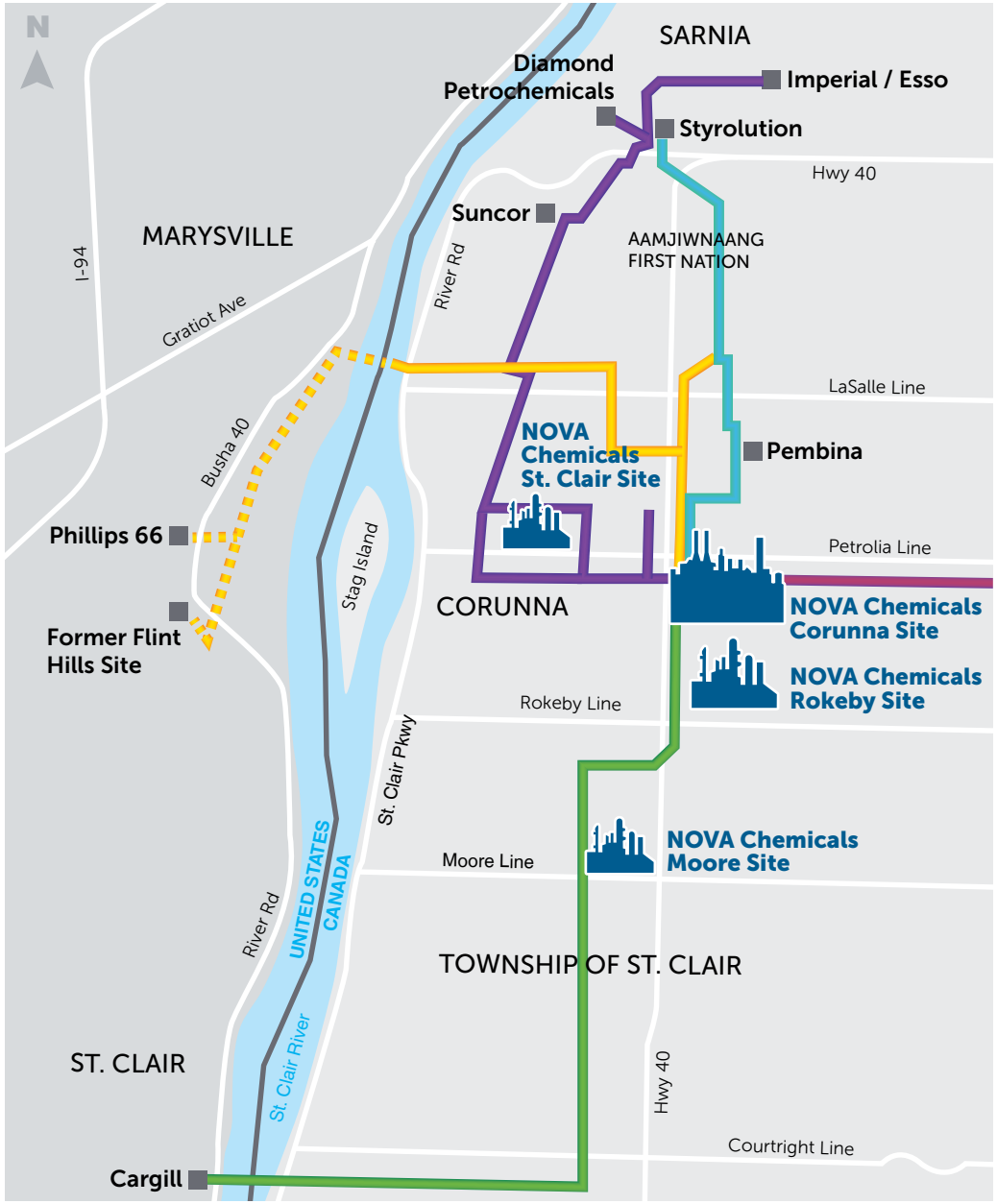
NOVA Chemicals produces ethylene and polyethylene, along with a number of co-products. We also have research and technology centres in Canada and the United States. All together, we employ about 2,400 people worldwide.

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

ETHYLENE / POLYETHYLENE VALUE CHAIN:



PIPELINES IN OUR MANUFACTURING EAST OPERATIONS



MAIN PIPELINE CORRIDORS

- Pipeline Corridor A
- Pipeline Corridor B
- Pipeline Corridor C
- Pipeline Corridor D
- Pipeline Corridor E
- U.S. Pipeline Corridor

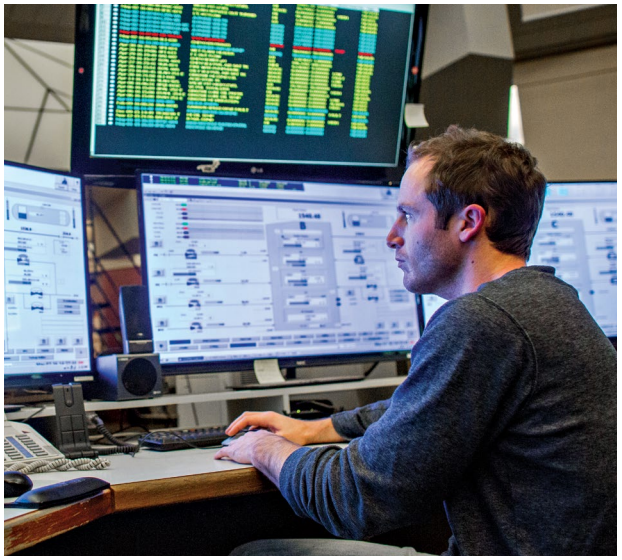
We refer to our Ontario operations as Manufacturing East. We continue to make significant investments into our petrochemical facilities located in the Sarnia-Lambton region.

THE PIPELINES WE OPERATE

NOVA Chemicals owns and operates numerous pipelines in Ontario that safely transport the feedstocks and products essential to our operations as well as to others in the petrochemical industry. Five of our pipelines cross the St. Clair River to connecting facilities located in Michigan. We also own, operate and maintain a number of small length pipelines adjacent to our Manufacturing East facilities.

Our pipeline systems involve more than 125 kilometres (km) of pipeline. In these pipelines we transport a variety of hydrocarbons including high vapour pressure liquids and oil, as well as commodities such as brine.

- Pipelines entering our Corunna facility carry products such as ethane, the primary feedstock.
- Pipelines exiting our facilities carry finished products and co-products including ethylene, brine and a variety of hydrocarbon blends and fuel products.



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.

Most of the hydrocarbon products carried in our pipelines are slightly heavier than air and normally would tend to accumulate in low-lying areas. Please see page 12 for what to do if you suspect a leak.

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

Responsible Care®
Our commitment to sustainability.

Taking Care along the pipelines we operate

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.

Safety is a priority in our operations. We take care to attract and develop talented people committed to the safety and well-being of themselves and others. We foster relationships that promote community safety and other social and environmental values.

MEETING REGULATORY REQUIREMENTS

NOVA Chemicals operates within all applicable regulatory standards and guidelines, including Federal, Provincial and State depending on the governing jurisdiction.

Ontario pipeline facilities are under the jurisdiction of the Ontario Energy Board (OEB) and Technical Standards & Safety Authority (TSSA).

The Canada Energy Regulator (CER) regulates the Canadian portion of all interprovincial and international pipeline systems under the terms and conditions of the *CER Act* and applicable regulations. Our CER-regulated pipelines are owned by Genesis Pipeline Canada Ltd., a wholly-owned subsidiary of NOVA Chemicals Corporation.

The United States Department of Transport (DOT), through the office of Pipeline and Hazardous Materials Safety Administration (PHMSA), has jurisdiction for the U.S. portion of the international pipeline systems.

Canadian information sources:

Ontario Energy Board: www.oeb.ca

Technical Standards & Safety Authority: www.tssa.org

Canada Energy Regulator (CER): www.cer-rec.gc.ca

As a Responsible Care company, 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.

OUR RESPONSIBILITIES AS PIPELINE OPERATOR

Our responsibilities as pipeline operator include maintaining a management system with programs that include:

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

People, systems and equipment make safety a priority

All of the pipelines we operate were constructed in accordance with applicable Provincial, State and Federal (Canada and United States) requirements.

Experienced technicians monitor our pipelines 24 hours per day, 365 days per year. Technicians 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. 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.

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.

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, anticipation, risk control and mitigation of occupational and industrial safety hazards for the protection of people and property.

Pipeline integrity management

The Pipeline Integrity Management Program brings together diverse elements in the management of risks and interacts with other NOVA Chemicals programs to meet the requirements of all types of pipeline systems, such as:

- design and construction through NOVA Chemicals' Project Development & Implementation (PD&I) and Facility Change Management (FCM) processes;
- condition monitoring through our operations and process control procedures and processes;
- maintenance and repair through the Manufacturing East regional maintenance, inspection, and reliability processes;
- operating conditions through our operations and process control procedures and processes;
- failure and damage incidents through investigation, root cause identification, and prevention processes;
- damage and deterioration identification through our inspection processes;
- manufacturing imperfections identification through our inspection processes;
- environmental protection through our Responsible Care processes and procedures; and
- occupational safety through our Responsible Care processes and procedures.

Our integrity management program addresses the life cycle of the pipeline system, which includes abandonment. While we do not have any current plans to abandon any of our pipelines, it's important to note that engagement with affected parties is an important part of the abandonment process.

Our Security Management Program protects people and assets from third-party impacts that could cause an injury or incident. This includes fenced compounds, locked valves, alarms, cameras and patrols.

Inspections and Monitoring

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.

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

Ground Patrol — Regular right-of-way inspections are conducted by contracted pipeline personnel along the pipeline corridors.

Because of these comprehensive practices, pipeline incidents rarely occur. If a potential problem or leak is detected, maintenance crews are dispatched immediately to safely deal with the situation.

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.

Fugitive emission controls — Above-ground facilities such as block valves, pig traps or metering 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.

Pipeline Abandonment

Pipeline abandonment is when a pipeline is permanently taken out of service and the delivery of a product to an end user is discontinued. Operation ceases and the pipeline is shut down. The pipeline may then either be removed from the ground or it may be left in the ground (known as abandoned in place). Removing or leaving the pipe in the ground depends on many factors, including current and future uses of the land, safety, impacts to potentially affected peoples and communities, property, environment, and economics. Approaches to abandonment will likely involve both methods and are determined as part of a pre-abandonment plan.

Pipeline that is abandoned in place remains regulated pipeline and continues to be monitored post-abandonment. Abandoned pipelines maintain signage and remain in the one-call database so their locations remain identified. Right-of-ways that are affected by abandonment are reclaimed and returned to a state similar to their surroundings.

As a pipeline owner, we are responsible for all costs related to abandonment of our pipelines and reclamation of the right-of-ways — there is no cost to the public. This includes cleaning up the surrounding area until it is reclaimed to meet the conditions of the abandonment approval. For our federally-regulated pipelines, the CER requires companies to set aside money to pay for future abandonment work. Companies review their estimates for the abandonment of their facilities at minimum every five years to confirm that the funds set aside are appropriate. We use a trust as our Set-Aside Collection Mechanism (SAM-COM) and annual reporting on the status of our Genesis Trust is submitted to the CER. Our annual reporting is available online by visiting the CER website at https://www.cer-rec.gc.ca/ and selecting Applications and Hearings > View Regulatory Documents > Advisory > Abandonment Funding > SAM-COM Annual Compliance Reporting and selecting Genesis Pipeline Canada Ltd. from the list of companies.

Pipeline abandonment is a complex process that requires considerable engagement and planning before any physical work is carried out. Rest assured that if you are an affected party of a pipeline that is planned to be abandoned, there will be opportunity for your input early in the process. If you have any questions in the meantime, please contact us.

EMERGENCY PREPAREDNESS AND RESPONSE

Our pipeline systems have an Emergency Management Program (EMP) and a Pipeline Emergency Response Team (PERT) Manual in place to help 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 the PERT Emergency Procedures Manual includes details on notification of the public and others.

We worked closely with landowners, residents, community officials, police, fire and other first responders and mutual aid groups to develop the PERT manual. The manual is reviewed and updated on an annual basis to ensure procedures are effective. All pipeline personnel understand and know their roles, and the roles of other emergency responders. Drills and exercises are conducted regularly in conjunction with emergency response personnel from the municipalities through which our pipelines travel.

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

As part of our Taking Care program, we provide information on pipeline emergency response plans and landowner awareness to residents along the pipeline corridors.

For more information, please visit our pipeline operations page at https://www.novachem.com/locations/pipeline-operations/ to review our PERT Manual or our Emergency Management fact sheet *NOVA Chemicals Pipeline Operations: Preparation for an Emergency Response*.

The first priority in any emergency response is the safety of neighbours and employees.

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 Sarnia-Lambton Community Awareness and Emergency Response (CAER);
- Regulatory agencies; and
- Neighbouring industries.

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.

As landowners and neighbours, you are our additional eyes and ears along the pipeline. Through our outreach programs and regular communications, 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:
1-844-346-3202 (press 0 for an attendant)

24/7 PIPELINE EMERGENCY: 1-800-278-0584

Indigenous Consultation

NOVA engages with our Indigenous neighbors with respect for their unique history, cultural and traditional rights, and connection to their ancestral lands. We proactively identify opportunites to engage in meaningful and effective communication, learning and engagement in a timely and respectful manner.

At all road and railway crossings along pipelines and at major water crossings, you will find markers such as this. These markers are not necessarily on top of the pipeline. It is important to remember that they are there for awareness and 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 prescribed area, to adhere to the provisions of Federal and Provincial regulatory requirements. This area is defined by the Canada Energy Regulator as a strip of land measured 30 m on both sides of the centre line of the pipe. If there is more than one pipeline in the right-of-way, the prescribed area is measured from the outermost pipelines on each side.

Before starting any projects or work within the prescribed area or near the pipeline right-of-way, you must get written consent from the pipeline company.

For example, you will need consent to:

- dig 30 cm (12 in) or deeper in the prescribed area;
- perform cultivation that is 45 cm or deeper (or is within an area considered to high risk);
- build a facility such as a playground near the right-of-way;
- build fences and dig fence posts inside the prescribed area;
- drive vehicles and construction equipment across a pipeline off of a public roadway; and/or
- carry heavy loads across a pipeline or drive certain types of agricultural equipment.

To facilitate consent, it is essential that you:

Contact Ontario One Call at least five full working days before you dig to ensure that all utility lines are located and marked. This serves as notification to infrastructure owners in the vicinity of your work that you intend to perform a ground disturbance and the owners of the infrastructure will locate their facilities (at no cost to you) and provide direction on whether your work can proceed or whether conditions are needed to maintain the safety and integrity of their facilities. You have a right to that information, and a responsibility to request it. You cannot proceed with your work until you have received direction or clearance from each infrastructure owner.

www.on1call.com

or call toll-free

1-800-400-2255

ONTARIO ONECALL

For complex or significant work, 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. Construction or installation of a facility (pipeline, structure, road, railway, ditch, drainage system, sewer, dike, telephone line, telecommunications line, utility, pathway) across, under or over a pipeline or running parallel in proximity to the pipeline requires a crossing agreement. If you know this is your scope, we request that you contact us in advance of entering a one-call to facilitate the process in advance.

For more information on how to receive consent to proceed with your work, please see *Guidance for Working Near Our Pipelines* at www.novachem.com/locations/pipeline-operations or email us at MEPipeline@novachem.com.

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

The CER has developed a brochure titled *Construction Near Pipelines* that is a comprehensive and valuable resource for any company, contactor or person working near a pipeline. We encourage you to review this guidance when planning any work in the prescribed area of a pipeline.

AGRICULTURAL ACTIVITY

Agricultural activity means the production of crops and the raising of animals and includes tillage, plowing, disking, harrowing and pasturing, but does not include the construction of new buildings or impervious areas or the installation of tiling, drainage, placement of footings, foundations, pilings or posts, including fence posts. Just because an activity occurs on agricultural land, it does not automatically qualify as an agricultural activity.

If your activity does not qualify as an agricultural activity, consent is required for that activity in the prescribed area of the pipeline. This could take the form of a crossing agreement, ground disturbance consent or vehicle crossing consent — or a combination of consent types. Therefore, completing a one-call and obtaining written consent from NOVA Chemicals/Genesis Pipeline Canada Ltd. is necessary before the activity can be completed.

If you are a landowner or tenant who performs agricultural activity near pipelines, you must exercise due diligence in your operations. You may perform shallow cultivation (less than 45 cm deep) in low-risk areas across a pipeline but, if you cultivate to a depth of 45 cm or greater, you must get written consent from the pipeline company.

Operating a vehicle or mobile equipment across a pipeline, including over the right-of-way, does not require consent if it is for low-risk agricultural purposes such as planting or disking or it is within the travelled portion of a highway or public road.

The crossing of pipelines with vehicle or mobile equipment for agricultural activity is authorized if the equipment is operating within the allowable limits and manufacturing designs, the loaded axle weight and tire pressure of the vehicle or mobile equipment are within the manufacturer's approved limits and operating guidelines, and there has been no notification from a pipeline company that performing an agricultural activity could impair the pipeline's safety or security. While crossing a pipeline with a vehicle or mobile equipment used to perform an agricultural activity is authorized if it meets certain conditions, if it is causing a ground disturbance, that ground disturbance activity must also be authorized by either a Crossing Agreement or a Ground Disturbance written consent form.

The CER has developed a brochure titled *Agricultural Activities Near Pipelines* that is a comprehensive resource for guidance on how to work in the prescribed area (including the right-of-way), crossing a pipeline with vehicles or mobile equipment and building facilities on or near a pipeline. We encourage you to review this brochure for guidance before completing activity in the prescribed area of a pipeline.

Depth of cover is the depth of the soil measured from the top of the pipeline to the ground surface. The depth varies for each pipeline, depending on ground conditions and situations when the pipeline was first constructed. Depth of cover changes over time due to issues like compaction, activities, soil removal, ground settling, wind erosion, flooding, etc.

NOVA Chemicals completes depth of cover surveys to ensure depths have not decreased to an unsafe level; however, it is important that the depth of cover over top of a pipeline is not compromised by agricultural activities and that any reduction in depth of cover is remediated.

WHAT TO DO 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 (these clouds look like fog), or there may be 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 1-800-278-0584**

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

INVESTING IN OUR ONTARIO OPERATIONS

We have invested more than $5 billion in our Ontario manufacturing facilities over the last 10 years including building a new polyethylene facility to ensure ongoing safe and reliable operations that will remain competitive in global markets.

Corunna Site

The Corunna Site can produce up to 2.8 billion pounds of ethylene and approximately 700 million pounds of co-products annually. It began operations in late 1977 and was purchased by NOVA Chemicals in 1988. It was the first fully integrated cracker and petrochemical complex in North America.

Moore Site

Corunna Site provides feedstock to NOVA Chemicals' Rokeby, Moore and St. Clair River sites where they will convert ethylene into up to 2.4 billion pounds of polyethylene per year.

We are the largest private employer in the region:

- About 1,000 permanent employees
- About 300 contractors

St. Clair River Site

Rokeby Site

We believe community involvement is an important part of doing business. Locally, we have contributed nearly $4 million over the last 5 years through our community investment program. Our employees are also active volunteers in the community.

NOVA Chemicals®

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:

Emergency (24 hours per day): 1-800-278-0584

General Inquiries: 1-519-862-2911 or 1-844-346-3202 (press 0 for an attendant)
MEPipeline@novachem.com

For more information about NOVA Chemicals, please visit us at **www.novachem.com** or **www.novachem.com/locations/sarnia-lambton-on-canada/**

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