

SiteLine

Joffre Site Community News

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Trail construction to start this Fall

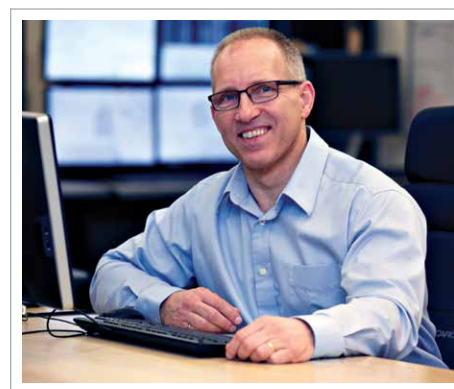
Milestones and moving ahead

As NOVA Chemicals is celebrating our 35th anniversary this year, we are proud of how our company continues to succeed in Central Alberta—providing business and employment opportunities and defining ourselves as a socially responsible neighbour.

At our site, the Polyethylene 1 (PE1) Expansion Project is definitely taking shape. It was just a year ago this June that we officially kicked off construction. By the end of Summer 2014 the reactor and flare stack will be in place and piling is expected to be complete. (Please see inside for more project updates.)

Our assets require constant reinvestment if we are to sustain and continue our success. In our last issue of *SiteLine* and at the May Open House, we reviewed our preliminary plans with you around a possible Ethylene 2 Debottleneck (E2DB) Project. We are in the process of doing a business analysis on the debottleneck's potential to increase our production capacity through the modification of existing equipment and possibly the addition of new equipment within E2. In terms of scale, field execution of debottlenecks tends to be similar in size and impact to turnaround activity. We will review the analysis with our leadership by year-end to determine whether we will continue to investigate the proposed project.

As with any such undertaking at the site, we are including environmental studies to help guide us in our E2DB decision making, and to meet our Responsible Care® commitments and regulatory requirements. This Summer we will be



The new “production train” or reactor for our polyethylene expansion will soon be lifted into position.

conducting the following studies: air dispersion modeling, site water quality screening and noise modeling. A future supplementary traffic impact assessment will update the work done to date. (See page 6 Regulatory Update for more information.) This information will be available at our Fall Community Open House for your review and input.

After a long, long winter, we hope you enjoy your summer. We encourage you to participate in our third annual Emergency Preparedness BBQ at the Joffre Site on August 7 (see page 6).

Rick Van Hemmen, Joffre Site Leader

PE1 Expansion Project

Important components focus of Summer work

Signs of progress are very visible at the PE1 Expansion Project as the flare stack is now in place. This Summer the polyethylene reactor, a key component for the expansion, will also be lifted into place. This new reactor is the third “polyethylene production train” in this facility.

The current workforce of about 200 continues to work on the installation of concrete foundations, piperack and structural modules, pre-engineered buildings and the construction of the cooling tower. All of these items are expected to be completed by year-end. Mechanical and underground utilities work is also underway—both targeted for a Fall completion. The Fall / Winter workforce is expected to reach about 400 as construction moves into installing structural steel, mechanical equipment and piping systems.

Construction of the storm water management pond in the rail expansion area is complete and landscaping underway (see Taking Care story page 5). PNR Railworks, which was awarded the rail track portion of the project, is starting set-up at the site.

PCL Construction has also mobilized on site in order to complete the new electricity substation by year-end.

Please go to our website to see new video footage of the construction work:
www.novachemicals.com/Joffre



The construction site was a hive of activity on June 23. The construction team safely used a 400-tonne main lift crane and a 250-tonne tailing crane to lift the flare stack and set it in place. The 83-metre stack was built in Stettler by FlareTech Inc. and shipped to the site in six pieces that were assembled by Ledcor's structural team during the Spring. The same height as the existing PE1 flare stack, this additional stack will be used for emergency purposes, start-ups and shut-downs.



A view of the expansion area as of June 2014.

Construction to start this Fall on Community Nature Trail

To complement the PE1 Expansion Project we continue to make progress on development of the NOVA Chemicals Community Nature Trail. A detailed design of the trail, located to the East of the rail yard expansion, is complete. The construction contract on the 89-hectare (220-acre) project will be awarded soon. Depending on weather conditions we are hopeful the community can start enjoying the trail by early next year.

With the help of local naturalists and wildlife photographers, we have created interpretive signs which will be placed along the trail. The theme of the signs, Taking Care with our Land, reflects how the area is unique in many ways and how wildlife habitat, agriculture, industrial and recreational land uses can exist harmoniously together.

The sign to the right is an example of the type of information you will find along the trails. The Sprague's pipit is rarely seen, but makes a home in this wetland. We're excited about sharing this beautiful area with the community and our employees.

AGRICULTURE • INDUSTRY • RECREATION

Taking Care with our land

Grassland Sentinels

Many grassland birds and mammals are brown, making them almost invisible among tufts of summer grass. The **Sprague's pipit** is no different. This shy bird nests on the ground and flies away long before you approach. Often only its song—seven or eight descending notes—gives away its location.

This is the perfect spot for the **Swainson's hawk**. This common hawk nests in treetops or shrubs and hunts in the open for ground squirrels, mice and small birds. Keep an eye out for its aerial patrols and its bulky nest.

A Responsible Care® Company

A closer look at expansion area activities



The installation of piperacks and other structural modules manufactured off site continues.



After manufacture in Germany, light-weight aluminum polyethylene pellet loading blenders were shipped to the site for assembly and specialized welding.



On April 16, 2014 the first piperack module was safely delivered and set into place. This was the first of 51 modules to be shipped from Ledcor's modular assembly yard in Nisku. The last module is scheduled for shipment in early 2015.

PE1 Expansion Project economics

- **\$950-million capital cost; including start-up spending the total is close to \$1 billion to 2016**
- **40% to 60% capital cost to be spent in Alberta**
 - Majority for direct labour
- **1,000 person years or 2 million work hours**
 - Peak workforce up to 800 by April 2015
- **Permanent employees 25 – 35**
 - 15 – 25 contract positions
- **Significant economic benefits to Central Alberta Region**
 - Materials, commodities, services
 - e.g. concrete, gravel, trucking
 - Support services for workforce
 - >\$8 million accommodation, food, recreation
 - Collaborating with local Chambers to connect to local businesses

E2 furnace refurbishment

The Ethylene 2 Furnace Refurbishment Project is an important example of the infrastructure and other improvements associated with the PE1 Expansion Project.

Ethylene produced at the Joffre Site will be the feedstock for the expanded polyethylene manufacturing activities. With the refurbishment of five of our 11 E2 furnaces, we further ensure a continued reliable supply of feedstock for our polyethylene facilities.

The Refurbishment Project is also expected to result in air quality and noise management benefits.

The foundations for the furnace work are complete. KBR, the contractor for this project, is now mobilizing to the site. Approximately 100 additional workers are expected to arrive in July 2014. The work is scheduled to be completed by early 2016, at which point we plan to proceed with refurbishment of four more furnaces.



Locomotive gets new home

Our surplus locomotive has been donated to the East Central Alberta Heritage Society (ECAHS).

We've had a long-term business relationship with ECAHS' operating partner Alberta Prairie Railway. This operating railway near Stettler stores our hopper cars and on occasion helps us move cars. Each summer ECAHS and Alberta Prairie Railway demonstrate pioneer railroading and host passengers from all over the world on their active rail service between Stettler and Big Valley. They were very interested in our locomotive. In this our 35-year anniversary, which includes the start of our rail yard operations, we continue Taking Care, lending a hand to organizations dedicated to making a difference and improving the overall quality of life in Central Alberta.



Pictured at the donation are representatives from ECAHS, Stettler Tourism, Town of Donalda and NOVA Chemicals.

May Community Open House draws good crowd

About 50 people came out to get updates on the PE1 Expansion Project and discuss the potential of the Ethylene 2 Debottleneck (E2BD) Project. As part of the event, Ducks Unlimited provided a display showing how agricultural and wetland areas complement each other. Other displays included children's safety by the Safe Communities Coalition of Central Alberta, North American Occupational Safety and Health and an INEOS product display.

With the closing of the Satinwood School, we will be moving our October 15, 2014 Community Open House to a new location: Haynes Hall. Watch for more details in the Fall.

We were proud to present a cheque to sponsor the Satinwood Commemorative Celebration. On June 7, 2014 more than 600 school alumni gathered for a reunion and to share memories from this wonderful school with a 106-year history.



On the occasion of our 35th anniversary, here are some more Joffre Site milestones (see previous issue for the 1980s):

The 1990s. . .

- 1990** Introduction of hexene linear low density polyethylene (LLDPE) resins.
- 1991** AGECE was amalgamated with Novacor Chemicals Ltd. Started up second polyethylene pelletizer unit.
- 1992** PE1 increased nameplate capacity to one billion pounds per year.
- 1993** Debottlenecked Ethylene 1 (E1) to increase capacity to more than 1.5 billion pounds / year, allowing PE1 to meet or exceed new nameplate.
- 1994** PE1 increased nameplate capacity to 1.2 billion pounds / year.
- 1995** Novacor, as a member of the Canadian Chemical Producers' Association (CCPA—now the Chemistry Industry Association of Canada) and a Responsible Care® company, completed a successful verification of the six Codes of Practice, allowing us to remain an industry leader in safety, health, environment and risk management.
- 1996** Novacor changed name to NOVA Chemicals. Announced expansion of the site including a third ethylene plant (E3) and a second polyethylene plant (PE2).
- 1997** Construction of Joffre 2000 began with E3 in mid-year. Investigated feasibility and economics of a cogeneration facility (COGEN) to supply the site's electrical and steam / heat needs. Developed commercial agreements with BP Amoco for a new Linear Alpha Olefins (LAO) plant for the Joffre Site. NOVA Chemicals is a major supplier and customer.
- 1998** Following the July 2 merger with TransCanada Pipelines Limited and the spin-off of NOVA Chemicals, NOVA Chemicals Corporation became a focused commodity chemicals company. COGEN (a joint venture of ATCO Power, EPCOR and NOVA Chemicals) construction commenced.
- 1999** NOVA Chemicals celebrated 20 years of success at the Joffre Site and surpasses the 50% complete milestone on Joffre 2000 projects. First company in Canada to receive CCPA Round 2 Verification. BP's LAO plant (now INEOS) construction commences.

Watch for more milestones in coming issues.

Working proactively through our Good Neighbour Strategy Team

As planning for the PE1 Expansion Project got underway in 2011, we wanted to ensure the relationships with our community and broader stakeholders were maintained and even improved during this growth phase. In 2012 we started the Good Neighbour Strategy Team which now meets bi-weekly to identify and address potential impacts of expansion on the community, employees and the operational site. This team also works proactively with our construction contractors.

Opportunities	
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Ernie Tromposch leads the construction management program for major projects and is a member of the Good Neighbour Strategy Team which brings together years of experience from all areas of NOVA Chemicals. “During the last expansion we learned a lot about what our stakeholders want and need from us when there are additional people, deliveries, traffic and activity.

“We have a tracking tool that reflects commitments we have made to stakeholders during the consultation process. This tool makes sure we follow through on the things we said we would do during planning and construction. It also functions as a positive community ledger that provides us with opportunities to proactively identify other ways to do the right thing as a socially responsible neighbour.”

Alignment with the overall NOVA Chemicals Taking Care model which frames the unique approach to Responsible Care® and sustainability is important to the team. (See story at right for Taking Care examples.)

The Good Neighbour Team keeps an eye on the positive community impacts as well and is actively working to highlight regional employment and business opportunities. “It’s all a part of doing what we say and saying what we do,” says Ernie.



Lacombe County visit

On June 11, 2014 Lacombe County councillors and staff visited the Joffre Site to see first-hand expansion project progress, and review how commitments made as part of the Development Permit process are being met by NOVA Chemicals. The annual visit also provides a better understanding of site operations and the economic and workforce scope at the Joffre Site.

Ethylene 3 turnaround

The Ethylene 3 turnaround was completed on June 23, 2014. Approximately 850 contract workers, supported by 170 of our employees, were involved in the work which cost more than \$60 million. Staggered work shifts helped to reduce traffic impacts.



Technicians check tolerances on the steam turbine major equipment to optimize performance for operating reliability and energy efficiency.

Some ways we are Taking Care

- The current growth projects maintain a zero net tree loss, so any trees that are required to be removed are replaced.
- Wildlife habitat and bird nesting are important considerations for the projects. The rail expansion project plans include planting 30,000 trees, shrubs and bushes, along with grass seeding to support an enhanced storm water management system. This Summer, for example, more than 1,500 willow shrubs will be planted near the nautilus pond area.
- We are also using steel instead of wood rail ties providing longer life, the opportunity to recycle used ties and eliminate the use of creosote for tie preservation.
- The Good Neighbour Strategy Team also collaborated on the development of the PE1 expansion environmental legacy project: the NOVA Chemicals Community Nature Trail.



Regulatory updates

Proposed Ethylene 2 Debottleneck (E2DB)—

(Also see page 1 for information on environmental studies.) We have met with Alberta Environment and Sustainable Resource Development (AESRD) to discuss an amendment to the Joffre Site operating approval to accommodate this potential project. Preliminary information has also been provided to Lacombe County related to a Development Permit. If the project proceeds, we would expect to submit a regulatory application to AESRD by year-end. The Lacombe County application will follow shortly thereafter.



Aerial view of E2. Furnace refurbishment is underway regardless of whether we proceed with E2DB.

The business analysis and environmental studies for the proposed debottleneck are looking at two potential scenarios: a 25% increase or a 40% increase in nameplate capacity. E2 was debottlenecked in 1987 to the current nameplate capacity of 1.78 billion pounds per year or 809 kilotonnes annually. With the two potential scenarios, the Joffre Site's overall ethylene production will be increased in the range of 6% to 9%. There will be no change to the site footprint, fence-line or five-km emergency planning zone.

With Board and regulatory approvals, construction could commence in the second quarter of 2016 for mid-2019 start-up. E2DB timing is aligned with a scheduled E2 plant turnaround in 2019 to minimize impacts on the community—for example, reducing flaring and steam venting associated with plant shut-downs and start-ups. We expect to gain efficiencies and therefore reduce overall oxides of nitrogen emissions, noise emissions and improved greenhouse gas intensities.

Temporary PE1 Expansion Project laydown area and assets—We are currently investigating the regulatory implications of keeping this as a permanent area for housing equipment laydown and temporary / contractor personnel for ongoing projects.

Free-standing radio communications towers—Having received all necessary federal and County permits, we are now proceeding with the construction of two new radio

communications towers. The towers are classified as low-power private communications systems. They are not Wi-Fi or cell phone towers. The free standing towers are required for safety and will enhance our internal radio system to ensure we can communicate with individuals in all locations, including the river water area where coverage is currently poor. Both towers are on land owned by us—one near our river pump-house, the other at our North Gate. Construction is expected to be completed this Summer.

The spirit of our community



You and your family are invited to join the Joffre Community Society, Lacombe County, and NOVA Chemicals for the

Official Opening Ceremony: NOVA Chemicals Community Activity Centre

Thursday, August 7 at 5:00 p.m.
in the Hamlet of Joffre

followed by

NOVA Chemicals' Annual Emergency Preparedness Awareness Community BBQ*

Thursday, August 7 at 5:30 p.m.
at NOVA Chemicals Joffre Site Loss Prevention
Building 3 (watch for BBQ entrance signage)

**Includes free vehicle emissions testing*

We hope to see you at either or both events!

NO RSVP REQUIRED

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For more information, please see these websites:

- www.novachemicals.com | www.novachemicals.com/Joffre
- Chemistry Industry Association of Canada: www.canadianchemistry.ca
- American Chemistry Council: www.americanchemistry.com

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