

Neighbourhood News

FALL 10

A NEWSLETTER FOR OUR NEIGHBOURS



Part of a Global Network



Beyond the Burnaby Refinery - Part of a Global Network

The two hundred and fifty people who work at the Burnaby Refinery are also part of Chevron's global manufacturing network. Being part of a large, international organization means the refinery has access to resources to call on for expertise in any number of areas. Chevron and its employees are recognized industry leaders and the advice of many subject matter experts is just a click away.

Maintenance Shutdown Team Lead Julie Buchanan takes regular advantage of having a host of experts she can contact to share ideas and advice. "I draw heavily on our experienced team in facilities around the world," she commented. "During our recent shutdown, we undertook important work on our sulphur pit, which was something the Burnaby Refinery had never done before. We were able to find out how to plan this work, to anticipate the kinds of

repairs we might expect and how to do the work safely thanks to those who had done this job before."

Julie accesses expert opinions whenever the Burnaby Refinery is making major equipment purchases such as a new boiler or flare components. She also consults with her international colleagues when she wants to learn best practices before undertaking certain repairs. "There's a lot

of value in being part of a wider network; we're not an island unto ourselves. We have access to colleagues who have a great deal of technical knowledge."

Managing Knowledge from Around the World!

Refinery staff also use Chevron's Global Manufacturing Knowledge Management website for guidance. "All you have to do is type in a question, such as 'I plan

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Manager's Message

JIM GABLE
GENERAL MANAGER



I am pleased to report that the refinery has just successfully completed its major fall turn-around of key process units. Many people probably don't realize how complex these periodic maintenance events are, but for this fall activity over four hundred additional workers were on site over a six-week time period emptying, cleaning, inspecting and improving equipment. Major refinery turn-arounds as large as this one occur every five years and require nearly two years of detailed planning. They're critical to ensuring the smooth and safe operation of our facility for the next half decade. One important aspect of the job is to work diligently to keep noise levels and other potential

neighbourhood impacts to a minimum – which is no easy feat given that we are working 24/7. We are as proactive as possible in mitigating sound issues by scheduling noisier work for the daytime hours, using screening and baffles and carefully positioning equipment.

During these turn-arounds we often call upon the expertise of Chevron professionals who work in other parts of the organization's global network. Colleagues from around the world have vast experience in

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THIS DOCUMENT CONTAINS IMPORTANT INFORMATION.
PLEASE HAVE SOMEONE TRANSLATE IT FOR YOU.

這份文件包含重要資料，請找人為您翻譯。

이 문서에는 중요한 정보가 담겨있습니다.
다른 사람에게 번역을 부탁하십시오.

此文件包含重要信息，希望請人為您翻譯。

ਇਸ ਦਸਤਾਵੇਜ਼ ਵਿਚ ਮਹੱਤਵਪੂਰਨ ਜਾਣਕਾਰੀ ਹੈ। ਕਿਰਪਾ
ਕਰਕੇ ਕਿਸੇ ਨੂੰ ਕਹੋ ਕਿ ਉਹ ਤੁਹਾਡੇ ਲਈ ਤਰਜਮਾ ਕਰ ਦੇਵੇ।

PART OF A GLOBAL NETWORK

to open a sulphur pit – has anyone done this before?” explained Julie. “A response is usually received within 24 hours.” The site also has a search function. And, there’s a vast online library of Chevron engineering standards. “I can find out everything there is to know; from creating engineering specifications for a new piece of equipment, to building a foundation or designing a control system,” said Julie.

Every Chevron refinery around the world also has representatives on a global energy team that networks and shares ideas and best practices. Technical Specialist Peter

Wynne interacts with this group on a regular basis to determine ways the Burnaby plant can become more energy efficient. During the recent Fall 2010 shutdown, Peter used this system to get advice on how to clean a particular heat exchanger.

“We can also call on experts to visit our facility for in-person advice,” said Peter. “We had some folks visit Burnaby to show us how to optimize two large compressors powered by steam turbines. Using their tips, we’re saving hundreds of thousands of dollars in natural gas costs and creating far fewer greenhouse gas emissions.”

Peter also notes that the refinery’s new cooling tower features new variable speed fans. “That alone has reduced our hydro bill by two to three per cent – a significant saving. We got that idea from others and have verified to our network the savings that are possible.”

A Two Way Exchange of Expertise

Planning Analyst Rob Lazenby works at the Burnaby Refinery but reports to Chevron’s Energy Technology Company as a global expert in refinery oils planning and optimization. His expertise is in building models used to determine which crude oil feed-stocks a refinery should source for processing. Rob also shares his knowledge through planning seminars offered around the world up to four times a year.

“I’ve been at the Burnaby Refinery for 25 years and in this role for the past 18 months,” said Rob. “Having this global network of specialists allows someone with my experience to support our international operations while staying here in Burnaby where I can mentor new planners and keep some of the refinery’s history on site.”

Like his Burnaby colleagues, Rob sees many benefits to global information sharing. “We have the opportunity to be part of the bigger business and to learn new techniques. Rather than continuing to do things the same way, we’re able to find new ways to solve problems.” He concluded, “It’s a great opportunity to tap into people with experience and also for the Burnaby Refinery to be plugged into a system that has overcome challenges not yet encountered here.”

MANAGER’S MESSAGE CONTINUED

servicing and restarting complicated pieces of equipment safely, quickly and efficiently. It’s just one way the Burnaby Refinery relies on the larger Chevron organization for expertise and resources. You can read more about this in our cover story.

In addition to turn-arounds, tanks are an ongoing maintenance priority for the refinery, and another instance where we’re making proactive efforts to reduce noise is with the floor replacement in one of our larger tanks (see the article in the Across the Fence section). It is important that we address neighbourhood concerns and continue to take steps to reduce possible noise from this project.

The refinery is one of the few industrial facilities in Burnaby that has a Community Advisory Panel (CAP), and we consider it a key component to being a good neighbour. It’s one way we continue to have open communications about areas of common interest and to work collaboratively to address issues with the neighbourhood. As you will read elsewhere in this issue, we will be holding our first Neighbourhood CAP meeting on November 25 at the Confederation Seniors Centre and I encourage you to attend.

Over the past few months I’ve enjoyed having more and more opportunities to get to know some of our neighbours. My family and I greatly enjoyed the recent Chevron Movie in the Park event. We had a great turnout on a spectacular summer evening and were impressed by the strong display of community spirit – one that the refinery is very proud to be a part of.



Chevron Burnaby Refinery Community Advisory Panel (CAP) Neighbourhood Meeting

The Chevron Burnaby Refinery Community Advisory Panel has been active since 1996. The Panel consists of a group of interested local residents who meet regularly with refinery management and local regulatory officials to review plant activities and current issues related to ongoing Refinery operations.

Please join us for a special Neighbourhood CAP Meeting on Thursday November 25th, 2010 from 7- 9pm at the Confederation Seniors Centre, 4585 Albert Street, Burnaby BC.

At this meeting for refinery neighbours there will be a presentation about how the CAP functions, we’ll take a look back at CAP’s activities during 2010, consider topics for CAP discussion in the coming year, and take questions from the audience. Residents will also have a chance to meet refinery management, the other members of CAP to learn more about the Community Advisory Panel’s work.

For more information on this inaugural CAP Neighbourhood Meeting contact the Burnaby Refinery’s Community Relations office at 604-257-5030 or visit the CAP website: www.chevroncap.com

Check out the New CAP Website

The Chevron Burnaby Refinery Community Advisory Panel (CAP) website was launched this summer. Check out www.chevroncap.com for all the latest news. Regular refinery operational status updates will also be posted on the site. Site visitors can also access the minutes from the latest CAP meetings along with useful resources.

CAP consists of volunteers from the neighbourhoods adjacent to the plant and senior refinery management who work with an independent facilitator to identify and resolve issues of mutual importance and concern to the local community. The new CAP website will help you better understand the work the panel does and how you can participate.

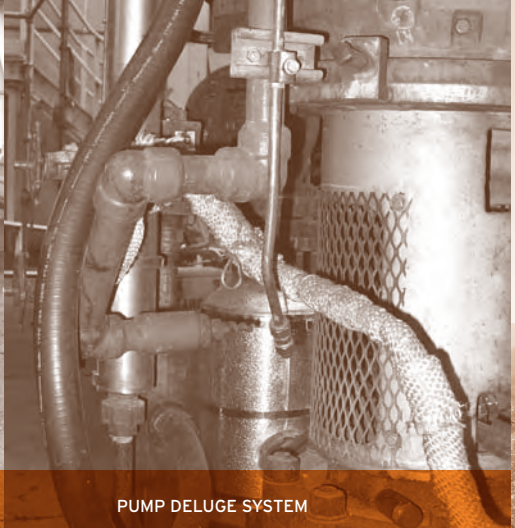
Safety First



INFRARED CAMERA



FIXED WATER CANNON



PUMP DELUGE SYSTEM

Fire Protection Measures at the Burnaby Refinery

When it comes to fighting fires, the Burnaby Refinery is well prepared. In addition to the three fire trucks and one hazardous materials truck on constant standby, there are many procedures in place to isolate, contain and extinguish a fire should one occur. Safety Trainer Brad Kuznik walks us through the systems, equipment and protective gear.

Key to putting out any fire is quickly eliminating its fuel supply. Refinery pumps include emergency shutdown valves to prevent fuel from feeding a fire. The structural steel framing around the refinery is fire proofed to prevent collapse.

“Infrared cameras have been installed around our critical pumps. These cameras pick up heat signals and trigger alarms. We’re one of only a few refineries that have these alarm systems that identify the location of the fire and then trigger a deluge system that automatically sprays the area with water. These systems are very reliable and we’re looking to expand their use to other areas of the refinery.”

Fusible plugs are also installed on critical pumps. If the soft metal on these plugs melts out, air pressure changes activate the deluge system and alarms. The refinery also has several Lower Explosive Limit or LEL monitors that track levels of hydrocarbons in the air. “Hydrocarbons can potentially cause fires if they are present where they are not expected. If hydrocarbons are detected in a specific area, alarms are triggered.”

The refinery also has an extensive internal fire-water system standing by in case of

fires. This system includes fire water supply lines to feed hydrants and fixed water cannons that can spray water a considerable distance. Most of the cannons are part of a fixed network with some mobile units available as well. The fire-water system has a back up water supply tank and twin diesel fire-water pumps that automatically maintain the system pressure. “The objective is to protect surrounding units then isolate the equipment in the immediate area. Large run-off drains have been installed so they won’t be overcome by large amounts of water.”

Brad estimates the refinery has close to 350, 20-pound fire extinguishers which are vital for containing fires quickly. There are also dozens of hydrants on site as well as emergency hose cabinets.

“We also have fire watches – trained individuals whose job is to watch the area any time ‘hot work’ is being done that could cause a fire,” Brad added. “Their responsibility is to be observant and to assess the work site from a safety perspective: is there a fire hose and extinguisher handy? Has the area been wetted down? Are fire blankets in place to contain any sparks caused by welding or grinding? Is a work permit in place? Has the area been tested for flammables? Is all equipment turned off at the end of the day?”

In addition, all workers on site are outfitted with personal protective equipment (PPE) including boots, gloves, coveralls, hard hat, vision and hearing protection. The coveralls are made of flame-resistant NOMEX material that must meet stringent safety standards.



ASPHALT LOADING
1963

Across the Fence



Major Fall 2010 Maintenance Shutdown Wrapped Up

The Burnaby Refinery's third largest shutdown ever is now one for the history books. Important maintenance was conducted successfully on two of the refinery's major processing units: the fluid catalytic cracker (FCC); and the sulphur recovery unit (SRU).

"We were able to accurately predict and plan what work would need to be done and the amount of additional discovery, or unexpected work found during the shutdown was limited," said Turnaround Team Lead Julie Buchanan.

The FCC and SRU are both shutdown every five years during which they are inspected, cleaned, maintained, and upgraded. "We've done all the work necessary for these units to function well for the next five years," added Julie. "Plants operate more reliably when they don't have to shutdown unexpectedly, so by doing this preventative work, we're reducing our impact on the community."

Refinery Area 2 Seepage Update

Chevron is continuing its efforts to respond to the detection in late April 2010 of an oily substance in a gravel trench along a CP rail right-of-way and at the rocky foreshore at Burrard Inlet below the Area 2 processing section. The area of the refinery involved in this seepage has been the focus of a perimeter monitoring program since 2004 and the site of increased testing since late 2009. Refinery engineers and environmental specialists believe the problem may be the result of an accumulation of subsurface contamination on the refinery site over an extended period of time and subsequent migration offsite

through normal groundwater movement.

The BC Ministry of The Environment's Land Remediation Section is overseeing interception, containment and recovery measures that have been put in place to reduce further migration of this material from Chevron's property. Based on visual observations, the rate of flow does not appear to have changed significantly since the seepage was first detected. Absorption and containment booms remain in place at the beach below the refinery. On a daily basis, personnel are recovering any observed material which continues to be estimated at approximately 5 to 7 tablespoons per day.

A network of extraction wells along the refinery's north perimeter designed to prevent further offsite migration is now being tested and operating data is being collected in order to make any necessary modifications. A proposed plan for longer-term foreshore mitigation measures has been submitted to the Burrard Environmental Review Committee and Environment Canada for review. Source identification efforts are ongoing with further sample well drilling is focused along the refinery's storm and effluent water sewer system.

The Preliminary Site Investigation draft report for the foreshore investigation has been provided to the Ministry of Environment for review. A permit application related to archaeological considerations in this area has also been submitted and is undergoing review by the appropriate authorities. A plan for a Detailed Site Investigation is also being developed for submission to the Ministry.

Chevron is as concerned as the public and regulatory agencies with the mitigation of any impacts resulting from this seepage and is committed to conducting the necessary clean-up. For more information please contact the Refinery's Community Contact line at 604-257-4040.

New Floor for Tank in Area 2

One of the refinery's largest tanks located in Area 2 along Penzance Drive, is currently undergoing maintenance work including the installation of a new double floor.

Preparations to take the tank out of service began in August with product in the tank being relocated prior to a thorough cleaning. New floor plates will be installed and welded into place. Given the nature of the floor plate material being used and the type of work that must be done, extra measures are being put into place to minimize any work related noise in the immediate area of the tank along Penzance Drive.

"We need to locate and weld the plates into place," explained Tank Program Coordinator Kevin Jay. "We'll be doing our best to reduce any noise issues. The tank has both a floating and dome roof installed and the tank shell itself is an inch thick at the bottom. Both of these factors should help to minimize any work related sound."

Kevin anticipates the floor work and welding will begin in late November and should be complete by the end of January or early February. Workers will be on double shifts, with less activity expected during the overnight hours.

Staff Profile

MEET MATT LEVIS



Matt Levis is proud to work for Chevron...as was his father and his grandfather. A 28-year-old lab technician, Matt has worked for the refinery for close to six years. His father was a truck driver with the company for 33 years. And his grandfather worked at the Chevron Richmond Bulk Plant during the late 40's servicing tugs on the Fraser River and delivering gasoline to local farms.

"I'm proud to work for the same company that employed my dad for so many years: I was raised in a Chevron family," said Matt. "I'm also proud to work for a

company that works hard to operate in a responsible way."

Matt, who now lives in the Edmonds area of Burnaby, remembers visiting the Heights neighbourhood many times as a child for all kinds of company events. He has fond memories of visiting Confederation Park and the miniature railway for company picnics. Today, he is making new memories of the area by frequenting his favourite 'mom and pop' stores and restaurants along Hastings Street.

Matt studied chemistry at BCIT and always had it in the back of his mind that he might be able to land a lab job at the refinery if he did well enough at school. He, along with several other lab technicians, are responsible for testing samples of gasolines, diesel, and jet fuel manufactured at the refinery to ensure the finished products meet Federal specifications stringent quality standards. Matt also maintains, calibrates and repairs specialized lab equipment including the critical octane engines that are used to check octane levels of gasolines before they are distributed for sale at service station pumps. With his industrial first aid training, Matt also serves as one of the refinery's first aid attendants.

"It's a good way to make a living," says Matt. "I enjoy it; I have the opportunity to do different things, travel a bit and work with great people while keeping the Levis family tradition alive!"



▲ MATT'S DAD, TERRY LEVIS
▼ MATT'S GRANDFATHER, HAROLD LEVIS (L) WITH COLLEAGUE BOB EVERETT



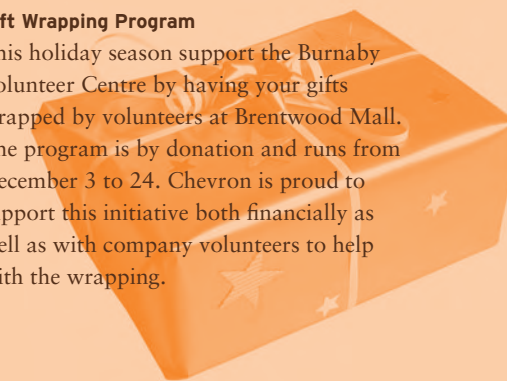
Community Corner

Movie in the Park

Over 1,500 people attended our third annual Movie in the Park. Sales from the food concessions raised \$3,200 to support the great community service work of Burnaby Community Connections.

Burnaby Volunteer Centre's Gift Wrapping Program

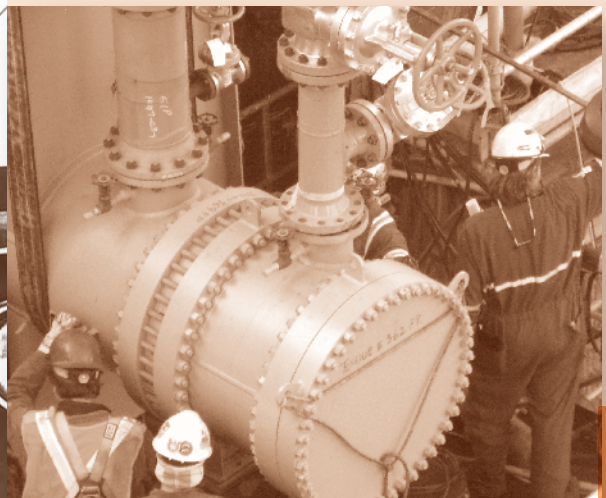
This holiday season support the Burnaby Volunteer Centre by having your gifts wrapped by volunteers at Brentwood Mall. The program is by donation and runs from December 3 to 24. Chevron is proud to support this initiative both financially as well as with company volunteers to help with the wrapping.



Chevron Refinery Tech Talk

Heat Exchangers: What are they and How do they Save Energy?

They look like big shiny cylinders about one to three feet in diameter and typically about 20 feet long. They're heat exchangers and the Burnaby Refinery has hundreds of them. If you live in a house with a modern furnace or water heater, you probably have some too. These important pieces of equipment are critical to making the refinery more energy efficient and reducing its greenhouse gas emissions.





Community Corner

Light Up the Heights

Get your holiday season off on a bright note with the Heights Merchants Association's annual Light Up the Heights festival. Look for the community Tree Lighting Ceremony at Heights Fountain Square on Saturday, December 4. The event includes sweet treats, family activities and a special guest appearance by Santa.

For more information:
www.burnabyheights.com



Burnaby Blues and Roots Festival

Taj Mahal was the headline performer at the 11th annual Burnaby Blues and Roots Festival. Chevron is a long-time sponsor of this much-loved community event.

ONE IN A SERIES OF ARTICLES THAT
 WILL HELP YOU UNDERSTAND WHAT
 GOES ON AT THE REFINERY.

Heat exchangers are used to heat or cool products in the refining process. Gasoline, diesel and other materials need to be heated during manufacturing and cooled before going to tanks for blending and shipping. This heating and cooling can be achieved in various ways including using air or water that's pumped through hundreds of tubes inside each heat exchange cylinder. All of these tubes are needed in order to provide the maximum amount of surface area to transfer the heat efficiently.

"Our preferred method of heat transfer is where we use the heat generated in making one product for heating other products," said Matt Fahey, Reliability Lead. "For example, we'll use the heat produced from a reactor to pre-heat the product feed going into the reactor. This presents us with an enormous energy savings opportunity."

"Recovering available waste heat means we don't have to heat fluids by burning natural gas," added Peter Wynne,

Technical Specialist. "This significantly reduces our greenhouse gas emissions. Our GHG emissions would probably be double if we didn't use heat exchangers."

With regular maintenance, heat exchanges are designed to last for around 20 years and some at the refinery have been operating reliably for 50 years. The refinery has a very robust monitoring system to ensure efficient operations. "We have regularly scheduled maintenance activities," said Matt. "And, during the recent shutdown we disassembled and cleaned all the heat exchangers. Once they were reassembled, we tested them before putting them back on line."

Matt also notes that the design of each heat exchanger is critical. "We must select the correct size and materials to achieve the optimal heat transfer and to prevent corrosion. We're constantly monitoring refinery operations and looking for opportunities to reduce emissions and our heat exchangers are the number one way we can achieve this."

Community Contact Line

(604) 257-4040

Chevron's Burnaby Refinery welcomes your calls and feedback. If you have any comments or concerns, please do not hesitate to call our Community Contact Line: 604-257-4040.

This line is staffed on weekdays between 8 am and 4:30 pm. Your call will be directed to the most appropriate person who can respond quickly. In the event of an emergency, or significant maintenance work underway that may contribute to unusual operating conditions, information and regular updates for the public are made available.

If you are calling after hours or on a weekend, your call will be forwarded to our on-duty shift supervisors. If you would like to report an odour or if you notice anything that you think is unusual, please let us know. Your calls are very important to us and we will respond as quickly as possible.



Neighbourhood News is a quarterly newsletter produced by Chevron's Burnaby Refinery for residents of the Heights, Capitol Hill and surrounding areas of North Burnaby.

We invite your comments, questions or suggestions for future articles.

Please contact us at Neighbourhood News, Chevron Canada Limited, Burnaby Refinery, 355 North Willingdon Avenue, Burnaby, BC, V5C 1X4.

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