

The Story of Sulphur: Part One

What burns with a blue flame, melts to a red liquid, is an essential part of all living cells and is commonly referred to as “brimstone”? Sulphur of course!

What used to be gathered by lowering people down volcanoes is now a byproduct in the processing of oil and natural gas. Sulphur is one of the most abundant elements in the earth’s crust, and can be found in the oil and gas fields of Alberta.

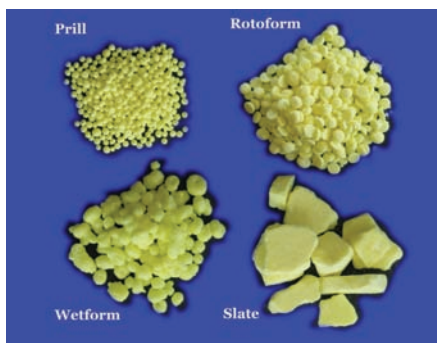
The process for extracting sulphur from natural gas was invented by chemist C.F. Claus in 1883. When sulphur is extracted using this process, it comes out as a hot liquid. As it cools it is formed into one of four different kinds of pellets received by PCT:

Slate – liquid sulphur poured across a stainless steel conveyor and cooled

Wetform – liquid sulphur droplets cooled in water

Rotoform – liquid sulphur droplets on a stainless steel conveyor and cooled

Prill – liquid sulphur sprayed into air and “tumbled” dry



The four different kinds of sulphur pellets at PCT



Sulphur handling at PCT

Open-top railcars are filled at various oil and gas plants in Alberta and transported to PCT for unloading. Before the sulphur leaves the plants it is first sprayed with a wetting agent to prevent dust from escaping the 8,000 foot train as it travels across the Rocky Mountains to Port Moody. Sulphur does not react with water so it is not affected by rain or snow while being transported in open-top cars.

Canadian sulphur is 99.9% pure and as a result, PCT is the largest sulphur export terminal in the world. But what happens to all that sulphur once it reaches its final destination?

The most common use of sulphur is in fertilizer. Considered one of the greatest

developments of the 19th Century Agricultural Revolution, fertilizer is vital for increased crop yield and essential for life. All people, animals and plants rely on the nutrients in their food to help them grow. Absorbed through their roots, fertilizer is the “food” that plants need to produce healthy crops. Experts say that without fertilizers, the planet would be without one-third of its food supply.

Fertilizer also helps protect the environment and reduces global warming by enhancing plant growth. By growing more in less space, land can be conserved and healthy crops put more oxygen into the atmosphere. Not only does fertilizer do all of this in farms around the world, but it also happens in your own backyard. Over time, soil loses some of its nutrients. Fertilizer helps rejuvenate soil and keep the nutrient levels in it from declining.

As part of the building blocks for life, Sulphur can be found in more places than just fertilizer. All high protein foods have sulphur in them. Both plants and animals need it to help synthesize proteins. You can also find sulphur in many preservatives and in fungicides for food like strawberries and apples. Sulphur is even a part of the penicillin that saves lives every day.

We’ve come a long way from lowering people into volcanoes to retrieve sulphur. Today, we view sulphur as vital to our modern lives. An element with more sides to it than most people know.

Scholarship Winners



Three students from Port Moody Secondary School receive scholarships for their outstanding scholastic and extracurricular work. From left to right: Matthew Rasmussen; Samantha Lawton; and Vince Florian.

Have you ever wondered how much of a difference students are making? In Port Moody Matthew Rasmussen, Samantha Lawton, and Vince Florian inspire their peers and community.

What do three students doing very different things have in common? Humility, dedication and a competitive spirit. These three qualities were echoed over

and over again in letters of support for this year's recipients of PCT's \$1,000 scholarship. Here's a glimpse into the lives of this year's PCT scholarship recipients.

Matthew Rasmussen has remained on the honour roll through high school while working, volunteering and playing sports. These activities have prepared Matthew for life as a member of the

UBC Thunderbird football team and student at the Sauder School of Business.

Among an impressive roster of extra-curricular activities, Samantha Lawton finds the time to volunteer with Richmond Special Olympics Gymnastics, compete in acrobatic dance, and study current events. Samantha hopes to obtain a Masters in life sciences in order to later work for the World Health Organization.

Vince Florian was recognized last year as the top engineering student in his grade. Vince is also a respected volunteer coach with the Tri City Youth Basketball Association and works hard to ensure his players learn important lessons about teamwork and fair play.

The scholarships these three students receive will offset the cost of tuition, fees, books and academic supplies. PCT wishes Matthew, Samantha and Vince the best of luck in their studies next fall and believes these Port Moody students will be some of tomorrow's leaders. PCT is proud to support them today in achieving their goals.

Train Noise Addressed

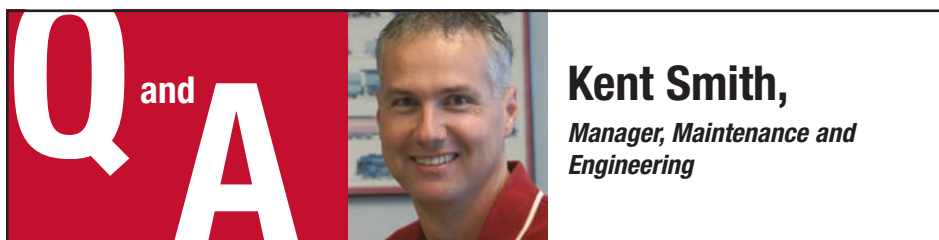
Handling trains at PCT is tricky business due to limited amounts of track. Each incoming train is split into sections that are guided onto three separate tracks by CP Rail. Once positioned, PCT employees move the railcars into the dumper to unload their contents. When finished, CP Rail returns to site, reconnects the railcar sections and then takes them away to be reloaded.

This positioning and reconnecting

by the railway is called "switching". This activity can produce noises, particularly when the railcars are empty. When the cars are moved their steel wheels will sometimes produce a squealing sound as they go around curved track. PCT works hard to minimize these sounds by making sure cars are moved slowly. Switching crews from CP Rail are trained to make sure railcars are traveling at exactly the right speed to minimize noise.



When two railcars reconnect



Q: What is a rotary dumper?

It's the equipment we use to turn sulphur railcars upside-down. Basically, it is a giant barrel where open-topped railcars are clamped into place and flipped over. The barrel is housed in a small building located on the tracks behind our sulphur piles.

Q: How does it work?

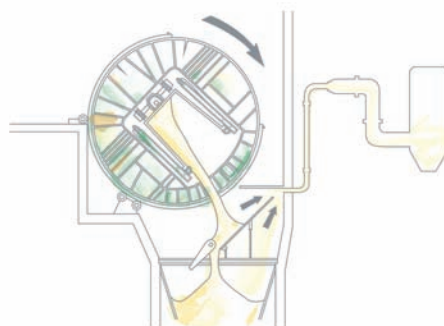
The barrel is mounted on wheels that allow the entire assembly to roll over. What's unique about the dumper is that the cars always remain connected to one another. Once a car is clamped into place, the barrel rotates and allows sulphur to slide out of the top of the car into a hopper. Sulphur is then put into our stockpiles or loaded directly onto a waiting ship with a series of conveyors.

Q: How long does it take you to unload one full train of sulphur?

Each car takes 2 to 3 minutes to unload. In total, an average-sized train of 115 cars takes between 5 to 6 hours to unload. You will probably see us using the rotary dumper once per day on average.

Q: What needs to happen before the dumper is ready to go?

A lot actually. Because we don't have enough rail track to be able to loop one train continuously through the rotary dumper, the railway must divide the train into three sections before we start. Operators then manually check each



How the rotary dumper unloads sulphur at PCT

car to ensure the brakes are off. After that, operators make sure that the entire handling system is ready and operating before we begin unloading railcars. Finally, one by one, each railcar in each section is positioned into the barrel of the dumper by a giant positioning arm.

Q: Who operates the rotary dumper?

We have specially-trained employees who operate the rotary dumper. They sit in a control booth just outside the dumper. Each operator makes sure that each car is positioned properly into the dumper, that the conveyor systems are working correctly and that the sulphur makes it successfully to our stockpiles or waiting ship.

Did you know about these new Port Moody facilities?



Ken Catton presents Director, Heather Scoular, with a plaque.

The Port Moody Library

The Port Moody Public Library has a new PCT Group Study Room. PCT is proud to invest in Port Moody's library knowing that their contribution will help benefit residents in the future. The Port Moody Public Library is not only an integral part of the community, but it also helps build community through the programs and services they have to offer.



Pacific Coast Terminals Curling Centre

Officially opened in April, PCT has sponsored the Curling Centre in the new Port Moody Recreation Centre. We hope you all can enjoy curling and skating in the new centre.

Website Contest



Are you hungry?

Log on to www.pct.ca and complete these questions online to enter to win a dinner for two at the Saint St. Grill.

- How many railcar unloading stations for Glycol does PCT have?
- What province do most of our products come from?
- What year was PCT established?
- How many vessel berths does PCT have?
- What award did PCT receive in 2004?

The Port's City Scene

Golden Spike Days, June 28–July 1

Synonymous with the city of Port Moody, Golden Spike Days combines great food, fun, entertainment and an amazing atmosphere during the Canada Day long weekend. One of the Tri-City area's most popular events, Golden Spike Days offers a little something for everyone. PCT is proud to sponsor 'Inlet Ecological Boat Tours' at this event.

PCT Summer Sundays Concerts in Rocky Point Park, July 6–August 24

Slap on the sunscreen and lug down the lawn chair to Rocky Point Park for the second annual PCT Summer Sunday Concert series. Local musicians belt out jazz, folk and soul every Sunday afternoon in July and August. Concerts begin at 2 PM.

Canada Day Seniors' Lunch, July 8

PCT is pleased to sponsor this Canada Day Luncheon to be catered by the Community Integration Services Society Food Services Program. For more information call 604-469-4561.

Links to Literacy, August 25



Join the Port Moody Public Library at their annual "Links to Literacy" golf tournament and fundraiser at Meadow Gardens Golf Club. PCT is proud to once again sponsor this great day of golf and support a great cause. For more details, please contact Dayna Solem at 604-469-4686 or email dayna.solem@cityofportmoody.com.

Kids Activity

Circle the things that need sulphur to grow. Draw a line under people that use sulphur every day. Make a check mark beside things that are made with sulphur.

without sulphur . . .

○ Circle the things that need sulphur to live and grow.
 Draw a line under people that use sulphur every day.
 Make a check mark beside things that are made with sulphur.

animals	carrot	painter
bread	fertilizer	apple
egg	fireworks	balloon
farmer 	medicine	raincoat
meat	grape	wheat
beans	tires	doctor
paper	rubber boots	chemist 
milk	skyscraper	ice cream

Now, try to imagine a world without sulphur . . .

Visit PCT online at www.pct.ca to view the answers to this Kids Activity.

Contact Information

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Your comments and contributions are welcome. Please forward them to:
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