

First Roxor going underground at Nutrien Rocanville

BY KEVIN WEEDMARK The first Mahindra Roxor customized by Ro-canville's Universe Satellite Sales for the mining industry is going under-ground at the Nutrien Ro-canville mine, and owner Stan Langley hopes its just the first of many Roxors to be put to work in the mining industry. "When Mahindra came

when Mainful can be to us and asked us if we wanted to take on the Roxor line, we didn't real-ly feel like we needed anly feel like we needed an-other product to sell here, but after looking at them and taking one for a drive we figured this might be a unit that would work re-ally good underground," says Langley. "It's built rugged and it's more like a truck than a side by side or UTV. so we figured we or UTV, so we figured we would take on the line.

"Once we got a couple of them in I had someone from the Rocanville Nutrien mine and someone from Mosaic come in and we had one of the Roxors sitting in the back shop and I said 'okay, if you're starting out and you're going to build a vehicle of your dreams to have underground, what would you do to this vehicle?' So they came up with a few ideas on the bumpers and

different things on it. "Because I worked at the mine, I knew some of the things they had to have, and I wanted to involve them to see what they would want. "After we did that, we

brought in Scott Norton, and Scott had actually built some of the original mine vehicles that went underground years ago when the mine first started. He built us the bumpers and the toolbox and things like that. "The original bumpers

that come on them were very small and they didn't cover the full back part of the unit and the tail lights would stick out a bit,"

would stick out a bit," Langley explains. "We have a bumper that will stick out a little further so you don't take out a tail light, you don't damage the box. They are a wee bit wider than what the bad rices if they what the body is so if they rub up against a wall or a belt the bumper should hit first, and that's what we did with the front so damage to the machine wouldn't happen. That bumper is a wee bit wider and sticks out a little bit further than the body." What other customiza-

What other customiza-tion has gone into the un-derground Roxor? "We've taken out the key from the ignition system and we just have a toggle switch there for turning the power on and we just have a push but-ton start, so they don't have to worry about



having to find a key if someone accidentally takes a key—it's just a push button start.

"They have master lockouts so when you're working on a piece of equipment you can lock all the power off to that unit so it can't be started, which we added as a safe-

which we added as a safe-ty feature. "It's got the warning lights on it so they have an amber light when they're driving down the drifts or if they are parked in the drift it's flashing. If they are towing, the amber light will turn to a blue light because blue means they're towing.

means they're towing. A toolbox was added that slides open from the back of the first customized Roxor.

"The first one that we are putting down in Ro-canville actually has a toolbox in the back of it,"

toolbox in the back of it," Langley explains. "They've actually just released a four seater model that we're going to bring in, so that might even make it a little better where they can actually be used to carry a four person crew." Wehicle height can be a challenge, so the Roxor going underground has been fitted with small-er wheels to reduce the height.

height. "We were able to meet the height requirements by going with a smaller rim and set of tires on it so we didn't have to alter the rollover protection system at all," explains Langley. "We actually just went with a smaller tire."

Langley says the Roxor may meet a need in the

"I think there could eventually to be lots of them underground," he said. "The first one is always the hardest one to

get down, to prove your self. If it can prove itself I believe the prices on these units are quite a bit lower than some of the stuff er than some of the stuff they have been using in the mine. They've been buying a lot of different models hoping to find the right thing. I'm just hop-ing this is the right thing." The first Roxor was ready to go down the Nu-trien shaft last week. "We had to take the front and rear bumpers

front and rear bumpers off because all we are allowed is 144 inches in length, so the bumpers come off and the tailgates come off to go down the shaft, and we just put it back together, put on the bumpers once it's down. It's not a lot of bolts to put that bumper back on, and she'll be ready to roll." The Roxors are powered

by a four cylinder 2.5 litre turbo diesel. The Engine Control Unit on the first Roxor going underground has been reprogrammed to set the top speed at 40 km/h, the speed required in the mine

in the mine. While the first Roxor is going into the Nutrien Rocanville mine, Langley is hopeful to have one in the Mosaic mine as well before long. "Mosaic has been in

talks with us a fair bit on them," he said. "Because their shaft is a little smaller than Rocanville's where they want to take it down, they have to take it from the nose and lift it up and then lower it down that way, so they have to have an engineered lift proce-dure for it and they con-tacted me the other day that they will have some one coming out here from an engineering firm to do that design on there, so I'm 99 per cent sure that they will be taking one underground there too to

try." Langley believes there is a good potential market for the Roxors in the min-"They've tried a lot of different vehicles down

there," he said. "They have Toyotas, John Deere Gators, Kioti side-bysides. "There isn't a vehicle

that's really manufac-tured for mining. I've

been after the manufacturers, saying why don't you come up with a really good diesel vehicle that good diesel venicle that meets the height require-ments? There's a big mar-ket. But when you have to build something like that to work underground, it costs a lot of money in 0 kep. and environment R&D and engineering. Mahindra has come out with something as an off-road vehicle that looks like it might be very close to the fit that they need for the mines. They're built heavy and sturdy so I'm hoping they will work well. There are a lot of potash mines in Saskatchewan and it would be nice

ewan and it would be nice to supply them. "Once this one is under-ground I'll be talking to them every day. I'll want to know if they think it needs anything else on anything that could be done better. I know Ma-bindra ic vary interseted hindra is very interested in making sure this works for them, and they're go-ing to work with us. I hope it works out. It would be nice to have a couple of guys just putting these to-gether all the time."



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New technique for studying rusting of steel benefits mining industry

EY FEDERICA GIANNELLI University of Saskatchewan (USask) PhD student Arthur Situm has developed a new non-invasive technique to study the rusting of steel, research that may help with the safety of potash mining and con-struction of buildings, roads and bridges. At the Canadian Light Source (CLS) synchrotron, a national research facility of USask Situm has been studying how the

USask, Situm has been studying how the protective coatings of rebars—the steel re-inforcing bars used to strengthen concrete —withstand rusting (corrosion). He did his research with the potash mining indus-try especially in mind.

try especially in mind. Salt from potash mining seeps through the porous concrete and may cause rebar to rust faster, which could require more frequent replacements. The world's larg-est reserves of potash, mainly used for crop fertilizer, are in Saskatchewan and the industry is integral to the provincial economy, making up nearly 30 per cent of the mineral's worldwide production in 2017. 2017

"Concrete usually holds up pretty well even when the rebar is somewhat rusted, but the method I developed helps you determine at which point the protective coat-ings of the rebars fail, so that researchers can develop better coatings," said Situm. Unlike other methods used to study corrosion, Situm's new synchrotron tech-

nique, which stems from a combination of X-rays, a microscope and the CLS particle accelerator, shows how effective the coatings are without removing them from the



Andrew Grosvenor (left) and Arthur Situm at the Canadian Light Source synchrotron Dave Stobbe photo

rebars. Normally, coating removal damag-es samples by making them unusable for future testing and may interfere with the corrosion of the coating itself. The project is funded by: the federal agency NSERC; the International Min-erals Innovation Institute (IMII); potash companies Nutrien, BHP and Mosaic; and Mitacs, a national not-for-profit organiza-tion that fosters growth and innovation for business and academia in Canada.

"We work closely with these companies to better understand what their needs to better understand what their needs are in terms of rebar, and we regularly share our results with them and IMII," said chemistry professor Andrew Grosvenor, Situm's supervisor. "We hope that by the end of the project our work will be useful for them to further improve the safety of constructions in the potash industry." Situm has simulated different conditions

for multiple types of protective coatings in

the lab to understand how the materials the lab to understand how the materials and surface chemicals can respond. His results show that a well-known and more expensive coating called "fusion-bonded epoxy" is able to withstand corrosion bet-ter than other types of coatings tested. "It's not just the work we do in the lab

that can tell us to choose a particular coating. A material performance can change greatly based on the lifetime of the material and environmental exposure, so we are not recommending one coating over oth-ers," said Grosvenor. "Arthur was more interested in finding new ways to study corrosion."

Situm's technique 'maps' how the chemical elements of a material are placed carcoss its surface, and how they may change in response to corrosion or aging. His results are published in the journals Corrosion Science and Surface and Interface Analysis. "Much like a map of a city, which tells

you where parks and buildings are, and how big, my map shows a very accurate distribution of chemicals in a material," he said.

Situm plans to extend the applications of his technique to study the stability of the ceramics used to store nuclear waste, using a simulated nuclear fuel.

Federica Giannelli is a graduate student intern in the University of Saskatchewan re-search profile and impact unit. This content runs through a partnership with The Star-Phoenix.

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Senator serves on committees that reviewed Bills C-48 and C-69 Michael MacDonald proud of Senate's role

BY KEVIN WEEDMARK

One day after the Senate transport committee rejected the federal moratorium on oil tankers in northern B.C., the energy committee that studied C-69 voted to ap-prove 187 amendments to the bill, which would make developing resource projects more difficult. Senator Michael MacDonald happens to be a member

of both the Senate Transport Committee that rejected Bill C-48, and is the deputy chair of the Senate Energy Committee that proposed all the amendments to Bill C-69

He said the senators' amendments came from groups "We heard from the Canadian Association of Petro-

"We heard from the Canadian Association of Petro-leum Producers, from the workers in these industries, from communities affected by these industries, and from provinces," he said. We went to people who knew what they were talking about on the impact of the bill. The independent senators had a number of amend-ments as well. We gave them our support, and we got ours passed, and now it's up to the government to de-cide which of those 187 they're going to keep. "One of the most important amendments we pro-posed is curtailing the minister's ability to go in there

posed is curtailing the minister's ability to go in there and arbitrarily shut everything down because they feel like it.

"Another one is stopping intervenors from coming in from anywhere in the world. We want a lot of this stuff

from anywhere in the world. We want a lot of uns stan-tightened up. "We're pleased that we got a lot of our amendments on the table. Now we'll see. When the government is run by a bunch of idealogues I don't expect too much, unfortunately. Hope springs eternal, but this is not a government that has been open to accepting too many things unlose you put them in a corner" MacDonald said the amended bill now goes back

to the Senate. "It goes to third reading, and it can be amended at third reading, so I expect there may be more amendments to come. They're voted on by the entire

"Once the bill is eventually called, I assume it will pass, and then it will go back to the House, where they will have to decide which amendments they're going to

The bill will go back before the senate for third read-ing during the last week of May, and then it goes back to the House of Commons. What did MacDonald learn in the hearings on Bill

"I always thought it was problematic. I always thought it was undermining national unity," he said. "But in the hearings I learned that there is a much bet-ter understanding in the West of what it's doing to the economy."

Moosomin's economic development committee was among those that submitted briefs to the Senate Energy Committee on Bill C-69. The community had earlier Andrew Scheer, Sask Premier Scott Moe, New Bruns-wick Premier Blaine Higgs, and Senator Denise Batters. MacDonald said he believes the community had an

impact on the national debate. "The brief got read and looked at and assessed, and

we had a lot of briefs from a lot of communities and groups that led to those amendments. "The one thing I noticed about this bill—you see

"The one thing I noticed about this bill—you see a lot of bills where all you get is cut-and-paste stuff. 'Sign here and send this message off.' But what I no-ticed about this bill was the number of independently sourced letters from people who have great experience and insight into the oil and gas industry, engineering, mining, investment, movement of capital. Just a really

great cross-section of well-educated and professional people who have written in with insights that we never would have got sitting around the table in Ottawa. Certainly not from the bureaucrats

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Mosaic K1 winners

Members of the winning Mosaic K1 mine rescue team: From left, Bruce Fraser (Instructor); Aaron Polvi; Skyler Hladun; Jared Cook; Jeremy Lundgren (captain); Dylan Bachtold (Vice-Captain); Clint Hollingshead (Co-ordinator); Colleen Parkin-Kempton; Frank Falkevitch (Instructor).

Mosaic K1 wins at provincial Mine Rescue Competition

BY KEVIN WEEDMARK Mosaic Esterhazy K1 was a big winner at the provincial

Mine Rescue competition Saturday, June 1 in Saskatoan. Mosaic Esterhazy K1 was the overall underground win-ner, was the winner in the underground mine problem competition, was runner-up in the proficiency category, and for the second year in a row, received the John T. Ryan National Award for Select Mines for zero lost time inju-ries or modified work injuries with more than 1.1 million

These of moduled work injuries with more than 1.1 million hours of work in 2018. Teams of dedicated and highly trained emergency re-sponse/mine rescue personnel from 16 mine sites around the province tested their skills at the 51st Annual Emergency Response/Mine Rescue Skills Competition held at the World Trade Centre at Prairieland Park in Saskatoon on Saturday, June 1.

Underground and surface rescue teams displayed their skills in five separate events, including Fire Fighting, First Aid, Proficiency Skills, Practical Skills and Simulated Surface and Underground Mine Problems The overall winners of the 51st Annual Emergency Response Mine Rescue Skills Competition are

> Overall Underground Winner – Mosaic Esterhazy K1 Runner Up – Nutrien Lanigan

Surface Winner - Nutrien Patience Lake Runner Up – Mosaic Belle Plaine

The Individual Event winners of the 51st Annual Emergency Response Competition are:

First Aid Underground Winner - Mosaic Colonsay Runner Up – Nutrien Allan

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SaskPower opens new \$4.4 million facility at Moosomin







SaskPower has opened a new \$4.4 million maintenance building at Moosomin.

The new Moosomin Maintenance Building was completed on January 31, 2019.

SaskPower Vice-president of Capital Projects and Procurement Grant Ring was in attendance for the opening June 6.

Grant Ring and Moosomin Mayor Larry Tomlinson cut the conduit to of-ficially open the new building.

The new facility is an 8,100 square-foot office/shop building, which will house eight to 10 employees. The building includes four storage

bays which allows SaskPower to store equipment, fleet and materials inside

and protected from the elements. Some other highlights of the building include:

- Building management system;
- In-slab heating;
- Wash bay;
- LED light and occupancy sensors;
- Secured compound;
- Video-conferencing capabilities; Sit-stand workstations; and,
- Ample windows to allow for natural light.

According to SaskPower, "by completing this project, SaskPower is able to provide better service to the town of Moosomin and surrounding area, reduce emergency response time, and provide a more functional and safe working environment for our staff.'



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Pattison Ag seeing increase in demand for underground Gators at Mosaic mine

BY KARA KINNA For the last six years, Pattison Ag in Moosomin has been supplying four-seater Gators to the Mosaic Esterhazy mine as underground vehicles, but in the last two years, the company has seen an increase in demand for the vehicles, as Mosaic has come to favor them as one of their prime underground machines.

"We're taking an 855M four seater Gator and we convert it to their mine specs for Mosaic," explains Trevor Green with Pat-tison Ag in Moosomin. "We take the mufflers off and send them to Ontario, they put scrubbers in them and send them back to us, and we put them back on the machine. They have speed limiter kits, special light-ing, different tires for height to make sure they stay under the right height. Those are some of the modifications we make.

"But mainly it's a John-Deere-built ma-chine that we have to do very minimal modifications on in order to work for

The machines are mostly used for em-

The machines are mostly used for em-ployee transport to the mining machines underground, and for hauling tools. "The durability is what they really like, and parts availability." says Green. "If anything goes wrong, we have a big ware-house in Regina. Within a couple days we're million parts for them."

we're pulling parts for them." Green says Mosaic started by ordering a

few machines, but in the last two years increased their orders significantly with the intent of switching out their other under-ground machines to Gators.

ground machines to Gators. "They started about six years ago, but the last two years it's really taken off," says Green. "Last year we sold them 14 and this year we sold four at the start of the year and we ared doing 12 right now. "This is all at Mosaic, and we just start-ed this week working with a couple of the contractors at Nutrim on some machines.

contractors at Nutrien on some machines there as well."

What is it that Mosaic likes about the

Gators? "Basically they wanted a machine that was durable enough and would stand up to what they need it for," says Green. "They had Kubota, they had Bobcat, they had Jeep, they had Toyota, they had everything underground. And they just needed something that was cheaper than their Jeep or Toyota mine specific vehicles to use. So that's why they tried the Kubota and Bobcat

"They found they weren't standing up as well as the Deeres were, so they just made the decision last year that they were switching everything to the Deeres and that's when they started making the big-

ger purchases. "The Deeres just have a heavier dutier the competi-

tion. John Deere prides themselves on their side by sides being a well-built work machine. They kind of dabbled in the sport market, but they build work specific machines. They are built to work and they are built tough."

Green says the mine has purchased around 30 machines over the years, and he anticipates there will be more of the manines underground at some point. All of the modifications to the machines,

except for the mufflers, are done in house. Body armour, lights, toolboxes, tires, speed limiter kits, and backup lights are some of the modifications that are made to the machines at the Pattison Ag shop in Moosomin.

"It has kind of filled the gap for some of the slower times," says Green. "It al-ways seems to end up that when they are purchasing from us is when we are past our seeding time, so it definitely gave our shop some more work to do for two weeks

or so to fill the gap between seasons. "Once those are underground they do their own repair work on them, but we order parts for them.

"So we give them all the parts manuals and they have access to the parts books, or for any service advice they phone our shop.

Green says John Deere even did a cus-tom run recently to put in adjustable

bucket seats in the front of the machine instead of the standard bench seat they come with. He says the possibility of man-ufacturing a mine specific machine is now on John Deere's radar due to the demand in Moosomin.

"John Deere is excited about this," he says. "It's kind of neat that a multi-nation-al company is looking at this, and it all started in little old Moosomin."

Green says he sees potential for the mine-specific Gator market to grow, espe-cially since Pattison Ag has so many loca-tions, and could serve other mines as well. "They'd have one vehicle coming from

one company covering all their mines, and parts for them right there," he says. "It's a , and

very good option for them just because of our company being so wide-spread." He says Pattison Ag has also custom-ized some cabbed surface vehicles for Mosaic, another area where there could be

potential growth. He says he's pleased that Mosaic has chosen to deal locally for their under-ground machines.

"It's been good and it's nice that the mines spend locally. If they buy a Jeep or Toyota, those dollars are going to To-ronto or Vancouver or New York, whereas buying local machines from us, it's helping our store, and it's helping other local stores like the Russell store," he says.

Senator serves on committees that reviewed Bills C-48 and C-69 **Michael MacDonald proud of Senate's role**

Continued from page 51 "You have engineers who have worked both upstream and downstream over a 40-45 year period. They're pretty knowl-edgable and it shows.

"I was impressed by the amount of well-written independent correspon-dence we received on this bill from peo-ple who have something to say. "People who are well-versed in indus-try and managing environmental issues and managing environmental issues

ay and managing environmental issues and managing growth, and have a lot of experience in some of these industries are fully cognizant of the damage this bill could do when it comes to investment in this country and competing with the rest of the world."

He said the pipeline rally in Mooso-min also had an impact on the national debate.

"The attention paid to that rally in Moosomin had an impact when it comes to helping educate the public in general. Whether it has any impact on the government is another story. "And whether it has any impact on

certain power elements in the country is another story."

Where does he think the bill will go from here?

"I think it will pass before the election. Do I have any faith in the government when it comes to the oil and gas indus-try? No, not really. Not after what I've

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WAGANTALL Member of Parliament for Yorkton-Melville







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witnessed up there for the past number of years. I'm hoping for the best." MacDonald said he believes the lack of pipelines puts Canada at a disadvantage. "We have a common market in oil in

"We have a common market in oil in North America. Basically it's a free mar-ket. We operate with the Americans. They're taking our oil at discounted prices and putting it through refineries in the Southern U.S. I don't blame them for that. We have to sell it there, because we can't get it onto the world market. All the money is bleeding out of this country and going there, and the Americans are producing more oil than ever, and they're selling it on the world market. They have selling it on the world market. They have the best of both worlds, and we have the worst. You can't blame them. They're just

doing what the market left them do." He said he is happy with the work the senators did on the file.

"I'm satisfied with the work my col-leagues an myself did. I'm glad that we insisted on doing the work in the sen-ate that wasn't done well enough in the Commons.

The that what to be were chough in the Commons. "We have a responsibility. If we see a bill that's so badly flawed it's going to damage the government in so many ways, economically, socially and every-thing else, then I think we have an ob-ligation to try to make it better. But the government doesn't have to accept it. We put a lot of time and effort into this, and I think we raised the profile of the bill with the Canadian public. We'll see if we raised it with the government. "But one of the things about Canada is we're a pretty resilient country. We have an election every four years, and we have a chance this October to do something about it."

about it."



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Want a unity crisis? Pass C-69 and C-48 into law

If C-69 is dry kindling to the flames of Western alienation, then C-48 is a carbon-taxed lighter fluid

Federal Natural Resources Minister Amarjeet Sohi has defended Bill C-69, the proposed replacement for Cana-da's environmental impact assessment process, by hailing the greater degree of regulatory certainty it would bring. His various approbations of the bill are directly contra-dicted by industry groups, regulatory lawyers and many Canadian Birst Nations. Canadian First Nations.

Canadian First Nations. They have cogently argued that the bill does nothing to fix the current uncertainty, creates new uncertainty in how to fulfill the assessment requirements and invites new litigation without precedent. And so Sohi's words of reassurance and a toonie might

get you a litre of regular unleaded gas in Vancouver, but Dangerously naive is the federal contention that addi-

tional legal requirements, new consultation obligations, discretionary decisions and the elimination of previous precedent will somehow speed up or bring clarity to the process

It seems to be the product of ivory tower drafters who have not faced down the kind of opposition-at-any-cost effort that halted Trans Mountain.

The bill does nothing to fix the current uncertainty, cre-ates new uncertainty ... and invites new litigation

There is a great economic risk to Canada's resource sec-tor if Prime Minister Justin Trudeau barrels ahead with this new mess. Sadly, one gets the sense that no matter how beset the feds are with well-considered challenges to C-69—the latest of which came so compellingly from new Alberta Premier Jason Kenney—they do not want to hear the ends of any of their critics' sentences.

More serious still is what Bill C-69 and yet another par-liamentary peach, Bill C-48, the B.C. tanker ban, will do to national unity if they become the law of the land. Today in Alberta and Saskatchewan, feelings of alien-

ation—and yes, separatism—are not only the purview of the usual demographic suspects. Intense dissatisfaction with the federation in these two

provinces is much broader and deeper than the usual 15-per-cent cohort of self-identifying alienated citizens at

13-per-cent conort of self-identifying anenated citizens at any given time. First it was the venerable Angus Reid telling us in Feb-ruary that over 50 per cent of both Albertans and Sas-katchewanians (yes, that's a word) strongly or somewhat

Ratchewanians (yes, that s a word) strongly or somewhat supported their respective province "joining a Western separatist movement." There too was the Environics poll of last month that pegged the number of those open-minded to indepen-dence (or as that survey's wording suggested, resigned to

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independence if things didn't change) was 53 per cent ... in Saskatchewan.

These numbers should shock. They are an order of magnitude stronger than they were at the time of the NEP when the first Trudeau caused earnest Western Canadians to think about going it alone. And if C-69 is dry kindling to the flames of Western

alienation, then C-48 is a carbon-taxed lighter fluid. C-48 seeks to stop the export of Western Canadian oil, notionally to protect the pristine West Coast from oil tank-ers, ironically while tankers from Alaska sail southward

past that coast to Washington and California. The East Coast and the St. Lawrence apparently rate no such protection.

country.

Earlier this month there was a flicker of light on C-48, and from the Senate no less, when the transportation

committee voted the bill down. Let this be a portent of a similar ignominious fate for this ill-considered and dangerous legislation when it's called to a vote in the full Senate.

If it is not defeated, consider then what Westerners will feel

If further economic dislocation is caused because of If nurther economic dislocation is caused because of objectively unfair and harmful legislation from a distant and out-of-touch federal government, compounded by the continued intractability of a dysfunctional pipeline approval process and with Westerners still on the paying side of the equalization formula, the talk out West might turn in earnest away from trying to improve on the status quo to "and now for something completely different."

Brad Wall is a former premier of Saskatchewan. He currently erves as a member of the Advisory Council for the Canadian Global Affairs Institute.



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Yet we continue to im-pede on our own ability to get our energy products to market. Market access constraints, along with regula-tory and fiscal policy barri-

ers, are holding us back. Globally, one billion peo-ple do not have electricity ple do nót have electricity and three billion people use fuels like wood or biomass to cook, impacting their health, quality of life and environment. By 2040, the International Energy Agen-cy (IEA) projects there will be another 1.7 billion people in the world, mostly added to areas still pulling them-selves out of poverty. Along with this popula-tion growth, global energy demand is expected to in-

demand is expected to in-crease by 27 per cent. Oil and natural gas will remain the dominant sources of en-

ergy well into the future. Canada has an opportuni-ty to meet this demand with

ty to meet this demand with responsible energy pro-duced the Canadian way. Demand for natural gas is expected to increase 43 per cent in the next two decades, and by 2040, the IEA previous it will curptly IEA projects it will supply one-quarter of total energy consumed in the world.

Canada should capitalize on the coming growth for LNG, not only for our own benefit, but also for an important

fit, but also for an important global benefit. Canadian LNG can play a key role in reducing global GHG emissions by displac-ing coal-fired electricity generation in China, India, Southeast Asia, and parts of Southeast Asia, and parts of the Europe. Seventy per cent of China's emissions—which account for more than one-quarter of global emis-sions—are generated from coal-fired power produc-tion. tion.

Canada's contribution to Canada's contribution to reducing global GHGs must be recognized domestically and internationally and count toward our commit-ment under the Paris Agree-ment through offset credits. Article 6 of the Paris Agreement must be final-

Internationally Transfer-able Mitigation Outcomes (ITMOs), between partici-pating nations. This was debated extensively in De-cember 2018, but the United Nations Conference of the Parties only reached draft decisions.

The discussion will con-tinue at their next meeting later this year. The Cana-dian government needs to take a leadership role in fi-nalizing the negotiations on ITMOs, and look beyond our borders to take a global perspective on emissions re-



duction. Through global offset credits, Canada could still meet its commitments unmeet its commitments un-der the Paris Agreement, while growing our LNG in-dustry to meet global mar-ket demand. If Canada re-ceived 50 per cent credit on global offsets, five Canadian LNG facilities would meet or exceed our commitment under the Paris Agreement. It is time for Canada to unlock the potential of our

energy industry to achieve full domestic and global benefits. The world needs

benefits. The world needs more Canada. The path forward must include a clear government commitment to resource development, a competitive fiscal environment, and an officient resultator; uschem efficient regulatory system enabling new projects to be approved and constructed

in a timely manner. CAPP is calling for the government to withdraw Bill C-48, which proposes a bin C-40, which proposes a tanker moratorium on a sig-nificant portion of Canada's West Coast. It would block Canadian petroleum prod-ucts from traveling those waters and getting out to now machet

new markets. Ironically, Bill C-48 will only block the export of Ca-

nadian-produced petroleum products; it cannot stop foreign vessels from carrying the same products through the same waters.

Bill C-48 also creates new barriers to Indigenous economic opportunity and self-determination. Groups such as the Eagle Spirit

Chiefs Council, the Indian Resource Council, and the National Coalition of Chiefs have all expressed concerns.

have all expressed concerns. The federal government's proposed Bill C-69—un-der Senate review—is also problematic. This overhaul of the regulatory approvals process will only make the system more complicated, unless cimifcant chances unless significant changes are made to Bill C-69.

are made to Bill C-69. New pipelines and the expansion of existing infra-structure are critical to the future of the industry. Mar-

ket access constraints must be resolved. We need seize opportu-nities to diversify Canada's oil and natural gas markets. The bottom line is, we need to be competitive on a glob-al scale to achieve the things we all value—responsibly produced resources that benefit Canada and the world.

Stacey Hatcher is vice-pres-ident, communications, Canadian Association of Petroleum Producers



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Plain and Valley



Work on Nutrien Rocanville's tailings management area got underway a few weeks ago, and will be ongoing for about a year.

Nutrien Rocanville Expansion of tailings management area underway

BY KARA KINNA

ву KARA KINNA A major project is underway at Nu-trien Rocanville, which is expanding its tailings management area, adding another 100 hectares of tailings manage-ment area to their already existing 330 hectares, providing another 11 years of tailings storage for the mine. "We refer to this as our Zone 13B project IV's an expansion of our current

project. It's an expansion of our current tailings management area," says Jalisa Miller, an environmental geoscientist

Miller, an environmental geoscientist with Nutrien. "We're constructing a series of dykes and ditches along the outside of the area, and the purpose is to contain salt and brine that is produced as byproduct of potash production. "Right now we have an existing area where we store our tailings and then a separate area for brine, so it's just an ex-tension of that area. "The total area that we are expand-ing is hundred hectares. Basically it will provide us another 11 years of tailing

storage. Right now our total tailings storage area is about 330 hectares.

"This is definitely a major project. We started the design phase early last year, and we spent the full year doing the de-tail design of the project, and then just kicked off construction within the last couple of weeks and there are around 35 pieces of heavy construction equipment on site in this area for it, so it's definitely

a major construction project." Miller says she expects the project to take about a year to complete. "We started a couple weeks ago and

We started a couple weeks ago and we're expecting it will take pretty much the full year. Probably in mid December we'll wrap up," she says. Miller says expanding the current tail-ings management area has always been in Nutrien's plans, but the added pot-sch preduction from Sciencer Cook bac

ash production from Scissors Creek has made the project even more of a priority.

"The purpose of the project itself is to make sure we that we have adequate brine and tailings storage. With the ex-

panded potash production rate, obvi-ously that means that we also have an expanded tailings deposition rate, so the area that we're currently using for deposition is filling up, and growing in this direction in the tailings expansion area was always part of our plan," she

"Even if we stayed at the current production rate, we would have eventually needed to move into a bigger tailings area, but the expanded potash produc-tion rate with Scissors Creek accelerated the need for it."

There are around 50 people dedicated work on the project. "Right now we have KPCL—Kelly Panteluk Construction Ltd.—out of Es-tevan. They're the main contractor for the earth works construction," she says. "They have about 45 people on eith and "They have about 45 people on site, and around 35 pieces of equipment. And then we also have SNC Lavalin that is doing the engineering management, and they have about three or four people on site.

She says the number of people on site

should remain fairly consistent through the duration of the project. KCPL has set up a camp for 45 people on the edge of town near the Rocanville Golf Course and Core Industrial build-

Golf Course and Core Industrial build-ing to house the workers for this project. She says it likely won't be long before Nutrien starts to plan for phase two of their tailings management area expan-sion, taking them beyond the 11 years being added by phase one. "This will be the biggest project right now in terms of the tailings manage-ment and areas outside of the mill that will have an actual impact," she says. "Otherwise, within the next few years, we'll probably start looking at the phase we'll probably start looking at the phase two TMA expansion area and start the we know this area is only going to last around 11 years. So eventually we're go-ing to have to move into a bigger area, and that will be the next major project."





Mosaic K1 wins at provincial Mine Rescue Competition

Surface Winner - Nutrien Patience Lake Runner Up – Orano McClean Lake

Firefighting Underground Winner – Nutrien Lanigan Runner Up – Mosaic Colonsav

Surface Winner - Westmoreland Poplar River Runner Up – Nutrien Patience Lake

Proficiency

Underground Winner - Nutrien Cory Runner Up – Mosaic Esterhazy K1

Surface Winner - K+S Potash Bethune Runner Up – Westmoreland Poplar River

Practical skills Underground Winner - Nutrien Vanscov

Runner Up – Nutrien Cory Surface Winner - Nutrien Patience Lake

Runner Up – Westmoreland Estevan

Surface Field Problem Surface Winner - Mosaic Belle Plaine Runner Up – Westmoreland Poplar River

Underground Mine Prob-

lem Underground Winner – Mo-saic Esterhazy K1 Runner Up – Nutrien Vanscoy

At the awards ceremony, two member companies of the Saskatchewan Mining Association received the Ca-Association received the Ca-nadian Institute of Mining, Metallurgy and Petroleum's prestigious John T. Ryan Na-tional Safety Trophy. For the second year in a row, Mosaic Esterhazy K1 received the National Award

for Select Mines with a rate of 'zero'-meaning they had no lost time injuries, or mod-ified work injuries at their operations in 2018 repre-senting over 1,131,000 hours worked.

Mine rescue

important component Matt Johnson, Assistant General Manager at Mosaic Esterhazy, said mine rescue is an important part of the

mine's operation. "We have about 50-70 members that train at our site to be mine rescue per-sonnel and there is an ob-ligation to have so many available at any given time should an event occur," he explained.

"They go through training with one full day a month in training and then work in building their skills to be available in case of an emergency. "We also have the capa-

bility and the need at times to call on other mines for support should we have an event, so we usually

deal with the closest mine. In that case we would call upon Rocanville if we had an emergency and they'd show up ready to assist us in an emergency and viceversa-we've gone down to Rocanville and supported

them during events." Mine rescue teams put in additional training leading up to competitions. "One full day a month is

typical and then leading into our competition they will do a little bit more intensive training. "We have an in house

competition where we'll take those 50 people, break them up into teams and then they'll do a competition similar to what is done at the provincial level with each other.

"That gives them good exposure because it's a competitive environment but it also gives them some good real world situational exposure.

Experience

makes a difference

Johnson said he believes the Esterhazy miners' experience made a difference in

rience made a difference in the competition. "We've got some real strong experience there," he said. "We have guys that have been involved in real mine operations and have mine emergencies and have

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had to respond to those situ-ations in real life, and also some guys that have been working on mine rescue for years, so real strong experience.

"Their performance in the mine problem is ultimately what won them the overall award. The mine problem in mine rescue is a two-part problem and it is basically two simulated 40-minute emergencies in mock mines set up at Prairieland Park. It kind of looks like a maze from the outside .

rrom the outside . "They're given real-world situational examples then have to go through all the steps to deliver. "Our guys did phenom-enally at that—they crushed the competition." Johnson said the minor ex-

Johnson said the mine res-cue teams are an important part of the safety program at the mine, and safety is a pri-ority for Mosaic.

"Overall safety is extremely important to us. Our mission is zero injuries. We don't believe anything we do is worth getting hurt for. "Safety is our number one consideration at everything we do. We know things can happen and have happened. "Having the strong team, the people with strong skills, with the ability to respond in

the right way is hugely important to us.

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"We've had events. Back in 2006 there was a fire here underground which really defines the site in a lot of ways. That was a long event and a scary one and ultimately no one was seri-ously hurt there, but a lot of the guys that are on the mine rescue teams were involved

in that. "We're starting to see some of the work force being green and not having expe-rienced that, but I've seen the guys that are involved that really go back to the im-portance of making sure that their coworkers, their brothers and sisters, go home safe everyday. It's huge for us." Johnson said he is proud

of the mine rescue team, and is also proud of the award won by K1 for its safety record

"We are very focused on our regular day-to-day safe-ty. K1 has done a phenom-enal job over the last few years and it has been ranked as one of the safest mines in Canada for two years running with the John T. Ryan Award.

"Something that is unique about our approach to this is when you're asked for stats

for the John T. Ryan they are focused on employees only. We've said we're not focused on employees only, we're focused on contractors as well. "We have decided to in-

clude contractors' stats in our report which nobody else is doing. Some are starting to do it but we're leading the way. We're saying we're going to maintain a high standard here. A person working with us is a person working with us, and still even with the contractors stats in, K1 has proved phe-nomenally successful. "One of the things that

mine rescue brings to us and makes us a stronger community is a lot of these guys that fire fighting in the commu-nity. The training they get at the mine benefits the community."



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Reclaiming the Enbridge pipeline right-of-way Crews will be working on right-of-way this summer

What happens after Enbridge's Line 3 replacement pipeline is in the ground? With construction of the Line 3 replace-ment pipeline essentially complete in Can-cide the process of columeting returning

ada, the process of reclamation-returning

ada, the process of reclamation—returning the land to its former use and productive capability—began in mid-June in south-eastern Saskatchewan and Manitoba. Banister Pipelines is overseeing the work on behalf of Enbridge over ap-proximately 280 kilometres from Regina, through the Mossomin area, to Cromer. A crew of approximately 180 is now working its way southeast from Regina. From east of Cromer to the Manitoba-U.S. border, SA Energy is managing the work with a crew of about 220 workers, one beginning near the Souris River, the other north of Morden. Weather permitting, the expectation is this work will be completed by the fall.

"Our promise is to restore the pipeline right-of-way to as good or better condi-tion than it was before construction, and to minimize the long-term impact to the land along our pipelines," says Allen Sawatzky, Manager of Construction for the Line 3 project. "Before construction takes place, we obtain regulatory approval and the en-vironmental permits which prescribe spe-cific reclamation measures and techniques proven to be successful in past projects."

Most reclamation occurs within the first year following construction. However, it can take longer, depending on weather and other environmental conditions. The first phase involves a more visible pres-ence of workers. As the work winds down, crew sizes diminish as well.

crew sizes diminish as well. A critical component of right-of-way reclamation involves working with land-owners, from the outset of a project, to reach agreement on property-specific items that will be addressed during and after construction. "This could include things like repairing

fences, driveways or landscaping, seeding hay land and native prairie areas, longterm erosion control measures in environmentally sensitive areas, and special care to be taken when working around live-stock," Sawatzky explains.

During excavation for the Line 3 replace-ment pipeline, topsoil was separated from the subsoil to ensure the land remains productive for agricultural purposes after construction. The land is re-contoured to maintain drainage patterns, hay land and

This photo and the photo below left show some of Enbridge's recla-mation efforts in the local area.

native prairie areas are reseeded, cultivated land is prepared for planting, and wet-lands and watercourses are stabilized and revegetated to prevent erosion and ensure habitat is restored for the many plants and wildlife along the line.

"Although most temporary workspaces will be allowed to grow back, we will generally maintain an approximately 12-me-tre-wide permanent right-of-way free of structures, trees and shrubs so that the pipeline is visible during aerial inspec-tions and accessible in the case of an emer-

gency," Sawatzky adds. To prepare the right-of-way for final rec-lamation, crews have been out and about in all of the 2018 construction areas making sure everything is okay during spring

"We've got a full complement of staff sature out there doing general maintenance," Sawatzky says. "Topping up gravel here and there, some erosion control, sign maintenance, gate repairs, hydroseed-ing—things like that," he says. "We're talking with landowners and staying on top of it"

One such request came from a land-owner in the Maryfield area whose tractor

was stuck on the right-of-way. "We got the tractor off, cleaned it up, put some mats down, and got it across," Sawatzky says. "And he's happy because we were able to do it the next morning.

The reclamation process

Enbridge takes numerous measures to minimize the long-term impact along their pipeline rights-of-way. Here are the steps involved:

 After pipe installation but prior to topsoil replacement, environmental crews respond to subsidence and/or drainage is-sues that create access problems for farmers or landowners, public safety issues, or to prevent environmental issues such as erosion.

 Reclamation begins by removing construction debris, access ramps, and re-contouring the right of way to its original profile;

Once the subsoil on the right of way is re-contoured, the entire right of way is de-compacted where heavy equipment has been working to prepare the right of way for the replacement of stored topsoil;
Next, crews pull the stored topsoil piles back over the right of way and dis-tribute it wanty over the area in which it

tribute it evenly over the area in which it came from, preparing the areas for seed-

ing and revegetation; • Finally, native prairie and hay lands areas are seeded, cultivated lands are straw crimped to prepare for the planting of the next crop, and pasture land fences are repaired.



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Oil and gas public offering for June raises \$6 million

The latest public offering of Crown petroleum and natwill gas rights held Tuesday, June 4, generated more than \$6 million in revenue for the province of Saskatchewan, bringing the current fiscal year's total to approximately \$8 million, following two of six scheduled offerings.

There were 31 leases acquired in the June offering, to-talling 3,887.329 hectares. The highest dollars per hectare offering was \$10,111.95 per hectare for a 32.203-hectare

parcel, acquired by Synergy Land Services Ltd. This parcel is located east of Lampman, in southeast Saskatchewan and has potential for oil in the Midale Beds and Frobisher Beds of the Madison Group.

The average price per hectare for the June offering was

\$1,654 per hectare, the highest per hectare for an offering since August 2014. "In the competition for oil and gas investment dol-

In the competition for oil and gas investment dol-lars, Saskatchewan development rights continue to il-lustrate there are solid opportunities in this province," Energy and Resources Minister Bronwyn Eyre said. "In an industry that places a high value on long-term, cost-effective investments, we are demonstrating that pursu-ing oil and gas development in Saskatchewan is good for business when supported by sound incentives and clear policies." Six leases posted north of St. Walkars in the the

Six leases posted north of St. Walburg in the Lloydminster area were acquired for a total of \$2,881,280.38. These

parcels are prospective for heavy oil in the Mannville Group and were acquired by Millennium Land (111) Ltd., Millennium Land (333) Ltd., Millennium Land (555) Ltd., BASM Land & Resources Ltd., Rockwell Resources Inc. and Prairie Land & Investment Services Ltd.

Two leases in the Kindersley area consisting of 648.026 hectares were acquired for \$1,418,165.85 and are prospec-tive for oil in the Mannville Group. Millemium Land (555) Ltd. acquired one lease for \$1,086,327.18 and Mil-lemium Land (111) Ltd. was the successful bidder for the other lease at \$331,838.67

The scheduled date for the next public offering will be August 13, 2019.



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Moosomin Energy Tour

The Saskatchewan Chamber of Commerce organized a Moosomin Energy Tour recently.

The tour stopped at the TransCanada compressor station, the Uack Technologies assembly plant, the Red Lily Wind Farm, and the Northland Power Spy Hill generating station.

The tour also heard from local Energy East advocate Sinc Harrison over their lunch break about Moosomin's efforts to revive the Energy East Pipeline.

Above is the tour at the TransCanada compressor station. At right is the tour at the IJack assembly plant. Below is the tour at the Red Lily Wind Farm.



Kim Poole photos



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