



FORMULATED FOR RESULTS

ADVANCED GREASE LUBRICATION FOR THE
TOUGHEST INDUSTRIAL CONDITIONS



LUBRICANTS

A HOLLYFRONTIER BUSINESS

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A HOLLYFRONTIER BUSINESS

DOWNTIME IS NOT AN OPTION.

When it comes to running a profitable business, you can't afford unplanned downtime. Petro-Canada Lubricants' line of industrial greases lasts longer, resists water washout and delivers superior surface protection - to keep your equipment operating smoothly.

PRECISION™ GREASES

When equipment is mission critical, failure isn't an option. Trust our PRECISION greases, they last up to 3 times longer than other brands in laboratory testing and surpass industry specifications. They're your best choice for bearings, gears and centralized lubrication systems.



PEERLESS™ GREASES

If your machines operate at high temperatures or in wet conditions, you need our PEERLESS greases. They not only provide extended protection for multiple applications, they're designed to reduce your maintenance and operating costs.



VULTREX™ GREASES

Heavy loads are no match for our VULTREX greases. Offering extreme protection in the toughest mining conditions, they can handle heavy loads in open gear drives as well as bearings and exposed sliding surfaces.



“

We were looking for suppliers that would not only provide products for our operation, but also a team that would do the job, do it right, and provide good support and service along the way.

Tom Blake - Mine Maintenance Superintendent, Copper Mountain Mine

”

NOW THAT'S WHAT WE CALL RETURN ON INVESTMENT

When the world's top companies need reliability in the harshest conditions, they turn to us. That's because we understand the importance of getting equipment protection right.

We've been producing advanced lubricants for over 35 years. Today, we have over 350 different products to our name. Our line of premium greases consistently outperform our competitors and have potential to unlock operational efficiencies within your business.

Uncompromising performance, unparalleled support

From mining operations to steel mills, off-road to on-highway, our highly knowledgeable technical services team is here to support you with unrivalled expertise.

We'll actively provide you with on-site solutions that can extend uptime, reduce maintenance costs and get your equipment running at maximum efficiency.

Built from 99.9% pure base oils

Many greases in our product lines are created from the crystal-clear base oils produced from the **HT Purity Process** resulting in technically superior lubricants with longer-lasting protection. But our lubricants aren't just great for your equipment, they have the potential to increase your productivity and enhance your bottom line.



PRECISION SYNTHETIC

PROTECTION FROM -40°C (-40°F) TO 170°C (338°F)

Extreme temperatures threaten your reliability and productivity. PRECISION Synthetic greases perform even in extreme heat and cold, to protect bearings, gears and centralized lubrication systems everywhere from general purpose to heavy-duty applications.



LASTS UP TO **3 TIMES LONGER**

PRECISION Synthetic lasts up to 3 times longer than other brands. Its advanced formula delivers superior protection and performance in multiple applications.

PRECISION SYNTHETIC

	Test Method	Synthetic EP00	Synthetic	Synthetic Heavy 460	Synthetic Heavy 1500	Synthetic 220	Synthetic Moly	Synthetic EMB
NLGI Grade	D217	00	1	1.5	1.5	2	1	2
Colour	PCM 264	●	●	●	●	●	●	●
Timken OK Load, kg/lb	D2509	25/55	27/60	27/60	30/65	27/60	22/50	N/A
Four Ball Wear scar diam, mm	D2596	0.52	0.51	0.55	0.50	315	0.43	0.56
Water Washout % @ 79°C/174°F	D1264	27.8	8.0	8.5	4.8	7.2	9.8	N/A
Recommended Operating Temperature Range, °C °F	N/A	-40 to 170 -40 to 338	-40 to 170 -40 to 338	-30 to 170 -22 to 338	-20 to 170 -4 to 338	-35 to 170 -31 to 338	-40 to 170 -40 to 338	-40 to 170 -40 to 338



PRECISION greases have been specially formulated to help your equipment run faster, safer and longer, with protection from -40°C to 170°C (-40°F to 338°F).

Thanks to their high-water washout resistance, PRECISION greases stay in place, even in the most challenging conditions. This can reduce the need to re-grease, lower maintenance costs and even extend your equipment life.

Premium PRECISION greases, such as PRECISION Synthetic, PRECISION XL EP1 and PRECISION XL EP2 deliver exceptional protection over a wide range of conditions and applications. They stand up to the heavy loads and tough industrial conditions in paper machines, presses and mills. They're also suited for the demands of highway, off-road and farm vehicles, as well as the on and off-highway equipment used in construction, forestry and mining.



PRECISION Synthetic, PRECISION Synthetic 220, PRECISION XL EP2 and PRECISION XL EP1 all meet NLGI Automotive Service Classification GC-LB for wheel bearing and chassis lubrication.



PRECISION General Purpose EP2 meets the NLGI Automotive Service Classification LB for wheel bearing and chassis lubrication.

PRECISION SYNTHETIC

When conditions are tough, PRECISION Synthetic protects your equipment and could ultimately save you money. PRECISION Synthetic EMB has been designed for electric motor bearings and other applications where an Extreme Pressure grease is not required.

PRECISION Synthetic Heavy 460 and PRECISION Synthetic Heavy 1500 are recommended for:

- Industrial machinery
- Pulp and paper mills
- Mineral processing plants
- Equipment subject to heavy loads, slow speeds and high temperatures

PRECISION

TRUSTED PROTECTION AND PERFORMANCE

Discover outstanding cold-weather performance without compromising high-temperature lubrication. The PRECISION range of lithium-based greases has been designed to meet the specific needs of your business.



PRECISION XL

Choose PRECISION XL when you need versatile premium performance greases that can withstand a wide range of operating conditions.

They are designed for passenger cars, vans, highway truck fleets and all off-highway vehicles. They are also recommended for all industrial machinery, as well as pulp and paper and steel mills.

PRECISION XL MOLY

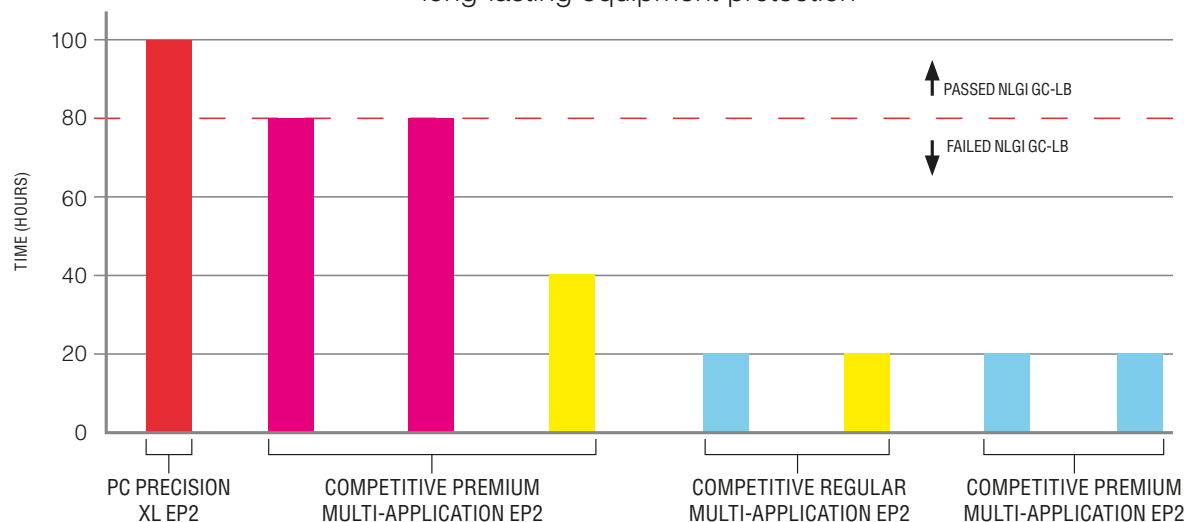
These lithium greases are best suited to tough, heavy-duty, shock loaded equipment in industrial and off-highway applications.

PRECISION XL 3 Moly and XL 5 Moly are compounded with 3% and 5% molybdenum disulphide (respectively) and are suitable for use in applications requiring these compounding levels by Caterpillar and other OEMs.

PRECISION GENERAL PURPOSE GREASES

If you're searching for a grease suitable for a wide range of general applications, this is the range for you. Our high-quality, cost-effective, lithium-based extreme pressure greases offer protection in a wide range of operating temperatures, water washout resistance.

PC PRECISION XL EP2's long life under high temperature provides long-lasting equipment protection



ASTM D3527 Bearing Life Performance Test at 160°C (320°F), 1,000 rpm speed and 111 N thrust load

PRECISION XL

	Test Method	XL EP2	XL EP1	XL EP00	XL EP000	XL EMB	XL Heavy Duty	XL Rail Curve Grease
NLGI Grade	D217	2	1	00	000	2	2	1
Colour	PCM 264							
Timken OK Load, kg/lb	D2509	27/60	27/60	18/40	18/40	N/A	27/60	18/40
Four Ball Wear scar diam, mm	D2596	0.50	0.49	0.46	0.48	0.53	0.52	0.54
Water Washout % @ 79°C/174°F	D1264	3.8	1.3	N/A	N/A	N/A	0.0	2.8
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-20 to 160 -4 to 320	-25 to 160 -13 to 320	-35 to 100 -31 to 212	-25 to 100 -13 to 212	-25 to 160 -13 to 320	-10 to 160 14 to 320	-50 to 120 -58 to 248

PRECISION XL MOLY

	Test Method	XL 3 Moly EP1	XL 3 Moly EP2	XL 3 Moly Arctic	XL 5 Moly EP0	XL 5 Moly EP1	XL 5 Moly EP2
NLGI Grade	D217	1	2	1	0	1	2
Colour	PCM 264						
Timken OK Load, kg/lb	D2509	27/60	27/60	18/40	23/50	23/50	20/45
Four Ball Wear scar diam, mm	D2596	0.48	0.52	0.47	0.49	0.53	0.46
Water Washout % @ 79°C/174°F	D1264	5.0	1.0	10.3	13.5	3.3	3.5
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-25 to 135 -13 to 275	-15 to 135 5 to 275	-45 to 135 -49 to 275	-50 to 120 -58 to 248	-30 to 135 -22 to 275	-25 to 135 -13 to 275

PRECISION GENERAL PURPOSE

	Test Method	General Purpose EP1	General Purpose EP2	General Purpose Moly EP2
NLGI Grade	D217	1	2	2
Colour	PCM 264			
Timken OK Load, kg/lb	D2509	18/40	18/40	18/40
Four Ball Wear scar diam, mm	D2596	0.58	0.49	0.44
Water Washout % @ 79°C/174°F	D1264	6.04	2.8	5.0
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-30 to 135 -22 to 275	-25 to 135 -13 to 275	-25 to 135 -13 to 275



PEERLESS

DEMAND THE BEST



PEERLESS LLG, OG1, OG2 and OG2 Red all meet NLGI Automotive Service Classification GC-LB for wheel bearing and chassis lubrication.

If your machinery operates continuously at high temperatures, in wet conditions, under force, or even in very dusty or dry conditions, you need your lubricant to work just as hard. Our PEERLESS line of premium-performance, multi-application greases have been formulated to reduce operating costs and provide extended protection.

PEERLESS LLG

This premium grease provides excellent service life under high operating temperatures.

It's recommended for:

- Sealed-for-life bearings found on automotive and industrial equipment
- Other life pack applications:
 - Constant velocity joints
 - Bearings and slide-ways operating continuously at temperatures up to 200°C/392°F

PEERLESS OG

If you're operating in severe wet, dusty or arid conditions, PEERLESS OG protects. This multi-application, long-life grease is formulated for the lubrication of loaded bearings, universal joints and chassis, in industry, transport, marine and offshore applications.

PEERLESS XCG FLEX

The ideal choice for use in high-speed flexible couplings, where severe centrifugal forces are generated. PEERLESS XCG FLEX meets AGMA coupling grease specifications CG-1 and CG-2.

PEERLESS SVG 102

Work with natural gas? This lubricant has been specifically formulated for the internal parts of the valves employed in the production and distribution of sour gas in natural gas plants.

PEERLESS POLY EMB

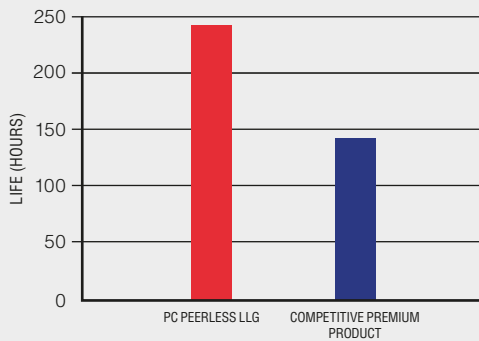
Premium performance, long life multi-application polyurea grease, formulated to reduce operating costs and provide long service protection over a wide range of operating temperatures.

PEERLESS

	Test Method	LLG	OG0	OG1	OG2	OG2 RED	OG PLUS	SVG 102	XCG FLEX	3 Moly 322	Poly EMB
NLGI Grade	D217	2	0	1	2	2	2.5	1	1	2	2
Colour	PCM 264										
Timken OK Load, kg/lb	D2509	27/60	23/50	27/60	27/60	27/60	27/60	27/60	30/65	27/60	TBC
Four Ball Wear scar diam, mm	D2596	0.45	0.42	0.38	0.52	0.42	0.39	0.51	0.41	0.43	0.43
Water Washout % @ 79°C/174°F	D1264	1.5	N/A	2.8	2.2	2.8	0.1	1.5	1.5	1.0	0.5
Recommended Operating Temperature Range, °C °F	N/A	-20 to 200 -4 to 392	-35 to 163 -31 to 325	-30 to 163 -22 to 325	-25 to 163 -13 to 325	-25 to 163 -13 to 325	-20 to 163 -4 to 325	-35 to 163 -31 to 325	-20 to 163 -4 to 325	-15 to 170 5 to 338	-30 to 163 -22 to 325.4

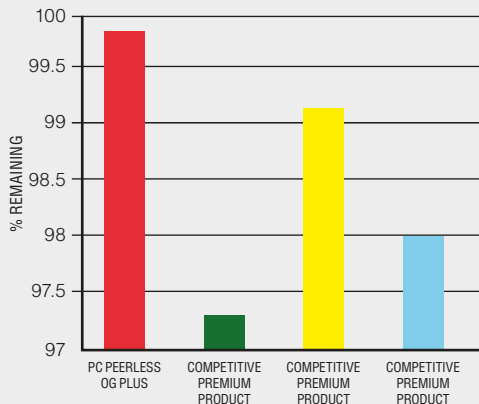
When bearings and slide-ways are operating continuously at temperatures of up to 200°C / 392°F, we recommend PEERLESS high-temperature protection.

PC PEERLESS LLG's long life under high temperature provides long-lasting equipment protection



ASTM D3527 Bearing Life Performance Test at 160°C (320°F), 1,000rpm speed and 111 N thrust load

PC PEERLESS OG Plus high resistance to water washout requires less re-greasing



ASTM D1264 Determining the water washout at 79°C (174°F), 5.0mL/sec. water flow rate and 600 rpm bearing speed



VULTREX

NO COMPROMISE

You can't predict everything, but you can rely on our VULTREX line of greases. Designed for use on large, heavy-duty, open gear drives, as well as the bearings and exposed sliding surfaces typically found in open-pit mining operations using large mining shovels, excavators and draglines.

They provide excellent wear protection and meet or exceed major OEM requirements for open gear lubricants.



VULTREX OGL

	Test Method	OGL Synthetic All Season 680	OGL Synthetic 2200	OGL Heavy 6200
NLGI Grade	D217	0/00	0	0
Colour	PCM 264	●	●	●
Base Fluid Viscosity, cSt @ 40°C	D445	749	2223	6489
Four Ball Weld Point, kg	D2596	800 [†]	800	800
Four Ball Wear scar diam, mm	D2266	0.65 [†]	0.62	0.64
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-40 to 25 -40 to 77	-15 to 40 5 to 104	-5 to 60 23 to 140



VULTREX OGL

When you're operating heavy equipment, it's good to know you're covered. VULTREX OGL open gear lubricant greases are designed with a darkening agent that allows mining operators to more easily identify whether or not gears have adequate grease applied.

All VULTREX OGL greases meet P&H 464 and Caterpillar mining SD4713 (formerly Bucyrus International) lubricant specifications.

- Extends shovel component life
- This means less downtime for maintenance and costly repairs
- Field trials were performed on various P&H and Caterpillar (BI and Terex) mining shovels

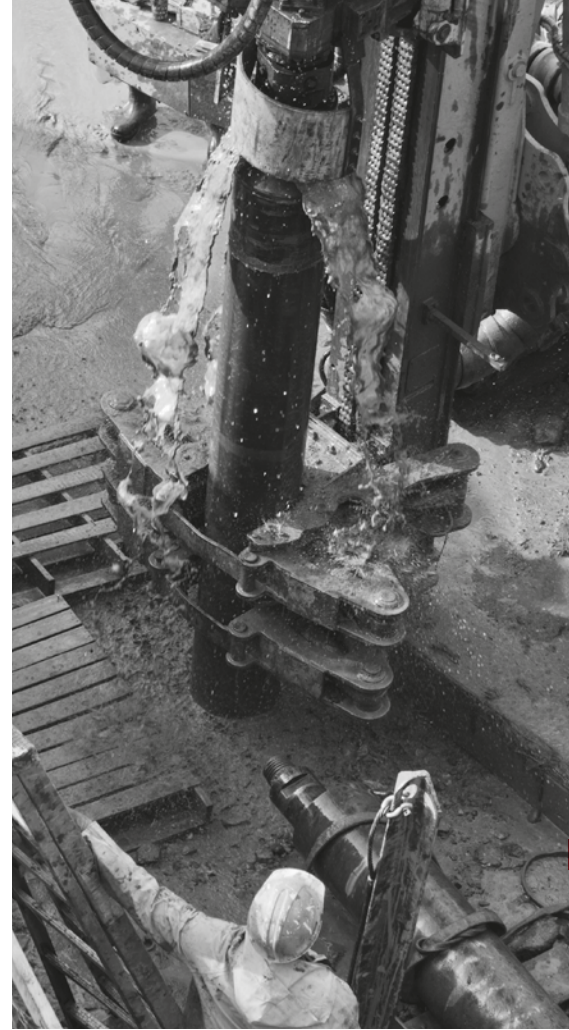


VULTREX MPG

EXCEPTIONAL PROTECTION IN EXTREME SURFACE MINING OPERATIONS

When conditions are volatile, you need a grease that can withstand extremes. VULTREX MPG greases are high-dropping-point, heavy-duty greases containing an aluminum complex thickener and a high viscosity base oil. They are designed to deliver outstanding service life and equipment protection over specific temperature ranges and environmental conditions.

Unlike many other greases, they possess the unique property of reverting to their original consistency after overheating and recooling. The adhesiveness of these greases assures that they will stay in place, even in the toughest mining, mill and specialty operations.



VULTREX MPG



	Test Method	MPG Synthetic Arctic	MPG EP1	MPG EP2	G-123	G-124
NLGI Grade	D217	0	1	2	1	2
Colour	PCM 264	●	●	●	●	●
Base Fluid Viscosity, cSt @ 40°C	D445	151	473	493	220	220
Four Ball Wear scar diam, mm	D2266	0.60	0.47	0.53	0.50	0.46
Four Ball Weld point, kg	D2596	400	400	400	315	315
Water Washout % @ 79°C/174°F	D1264	11	10	2	11	2.5
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-40 to 120 -40 to 248	-25 to 160 -13 to 320	-20 to 160 -4 to 320	-25 to 160 -13 to 320	-20 to 160 -4 to 320

SPECIALTY GREASES

Open Gear Lubricants

- VULTREX Gear Shield® NC - Designed for maximum gear protection.

Specialty Drilling Greases

- VULTREX Rock Drill EP000 - Designed for “mist-free” lubrication of rock drills and in-line pneumatic systems.

- VULTREX Drill Rod Heavy - Barium grease for use on diamond drill rods, reducing friction and resisting wash off.

Specialty Compound

- API Modified Thread Compound - lubricates and seals threads for casing, tubing and line pipe in oil field applications.



VULTREX ROCK DRILL AND GEAR SHIELD

	Test Method	Rock Drill EP000	Gear Shield® NC
NLGI Grade	D217	000	Semi-fluid
Viscosity @40°C, cSt			4765
Colour	PCM 264	●	●
Four Ball Weld Point, kg	D2596	200	400
Four Ball Wear scar diam, mm	D2266	0.43	0.49
Recommended Operating Temperature Range, °C Temperature Range, °F	N/A	-20 to 100 -4 to 212	-5 to 93 23 to 199

VULTREX SPECIALTY GREASES

	Test Method	API Modified Thread Compound	Drill Rod Heavy
NLGI Grade	D217	1	3
Colour	PCM 264	●	●
Dropping Point, °C/°F	D2265	177/350	201/394
Worked Penetration @ 25°C	D217	328	234
Copper Corrosion, 24Hr, 100C	D4048	1a	1b
Four ball weld, kgf	D2596	500	315
Four ball load wear index, LWI	D2596	93	44

®Gear Shield is a registered trademark of Petron® Corporation.

DOES YOUR APPLICATION REQUIRE A GREASE FOR SHOCK LOADING?

YES

NO

NO

IS VERY HIGH BASE OIL VISCOSITY REQUIRED?

IS LOW-TEMPERATURE PERFORMANCE REQUIRED?

YES

IS HIGH BASE OIL VISCOSITY REQUIRED?

NO

YES

NO

YES

YES

Low Temperature
(-45°C/-49°F to 120°C/248°F)

Low Temperature
(-30°C/-22°F to 170°C/338°F)

Moderate Temperature
(-25°C/-13°F to 160°C/320°F)

Moderate Temperature
(-20°C/-4°F to 170°C/338°F)

High Temperature
(-20°C/-4°F to 200°C/392°F)

Widest Temperature
(-40°C/-40°F to 170°C/338°F)



VULTREX MPG SYNTHETIC ARCTIC

Recommended for centralized greasing systems on heavy-duty off-highway and mining equipment, operating in extreme low-temperature conditions

Delivers excellent EP and anti-wear properties



PRECISION SYNTHETIC HEAVY 460

An NLGI #1.5 grease

Designed for the lubrication of dryer felt-roll bearings in paper machines, where extended life at high temperatures is needed and frequent replenishment is not possible



VULTREX MPG (EP1 & EP2)

VULTREX MPG EP1 is designed for centralized greasing systems on heavy-duty gear and bearing applications

VULTREX MPG EP2 is recommended for heavy-duty gear and bearing applications operating at low speed and higher temperatures



PRECISION SYNTHETIC HEAVY 1500

An NLGI #1.5 grease

Designed for service in plain and rolling element bearings operating at low speeds, heavy loads and high temperatures; conditions in mining, construction and forestry applications



PEERLESS OG (0,1,2,2 RED, PLUS)

Multi-application, long-life grease

Lubricates loaded bearings, universal joints, and chassis in industry, transport, marine and offshore applications operating in very wet, dusty and/or dry conditions

NLGI GC-LB* (except OG 0 & OG PLUS)



PEERLESS LLG

NLGI #2 grease

NLGI GC-LB*

Provides extended service life at extreme temperatures

Recommended for long-life applications such as "sealed-for-life" bearings and slide-ways operating continuously at temperatures up to 200°C/392°F



PRECISION SYNTHETIC

NLGI #1 grease

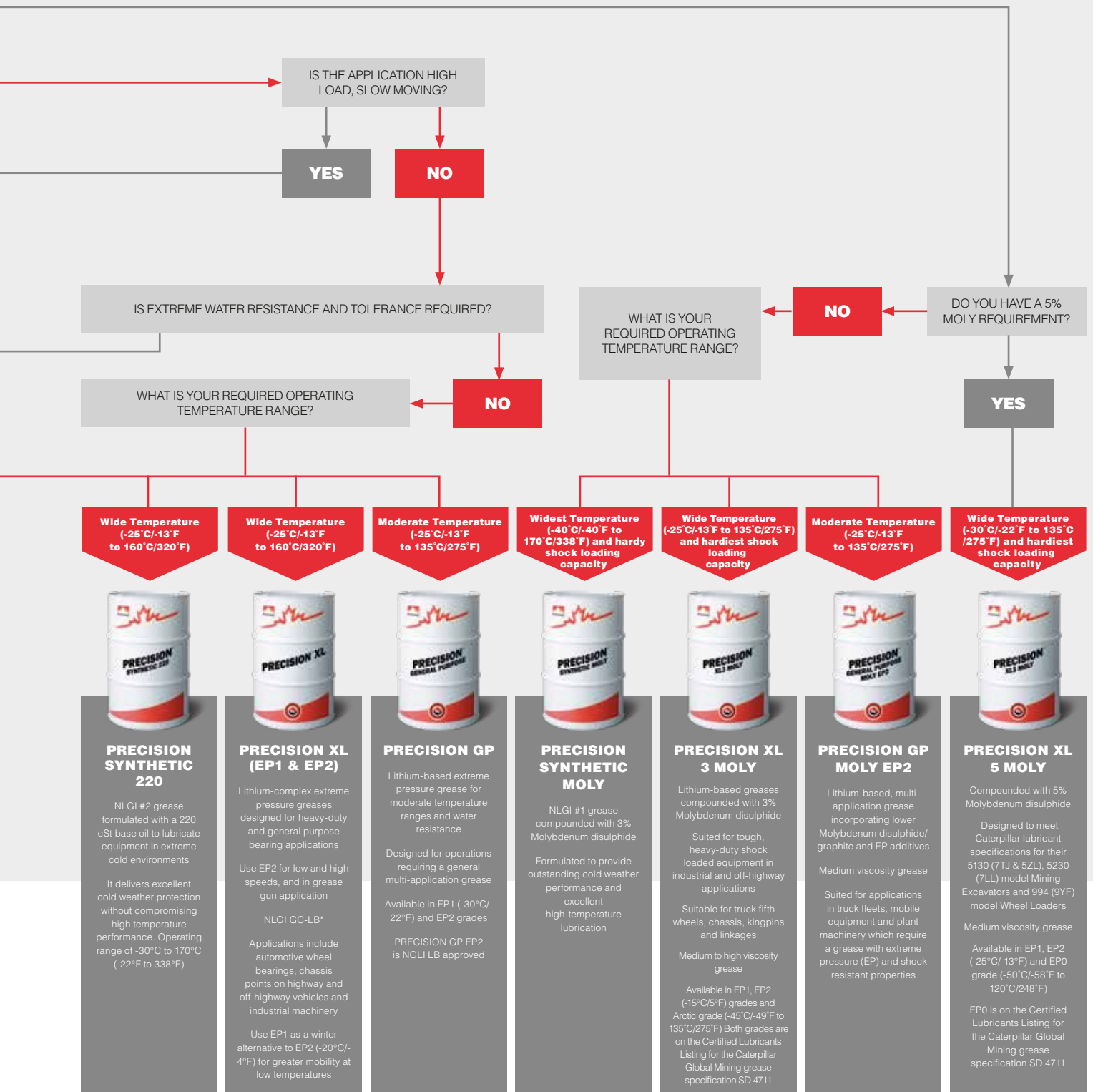
NLGI GC-LB* Long-life, premium performance, extreme pressure lithium, complex grease containing synthetic base oil

Provides protection over a wide range of operating temperatures, for all season protection

*These greases meet the NLGI Automotive Service Classification GC-LB for wheel bearing and chassis lubrication.

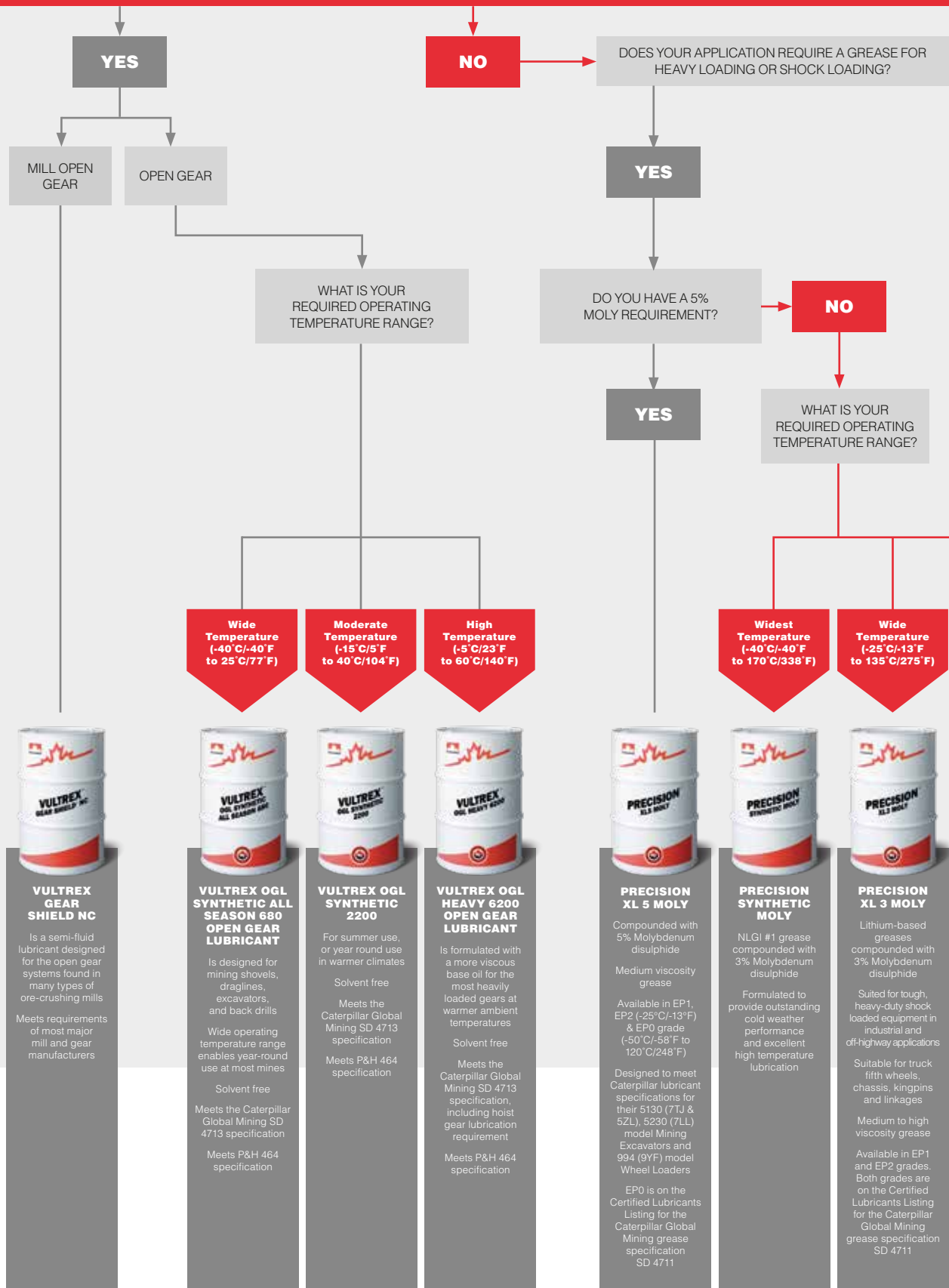
MULTI-APPLICATION INDUSTRIAL GREASES

HARD-WORKING GREASES FOR YOUR INDUSTRY



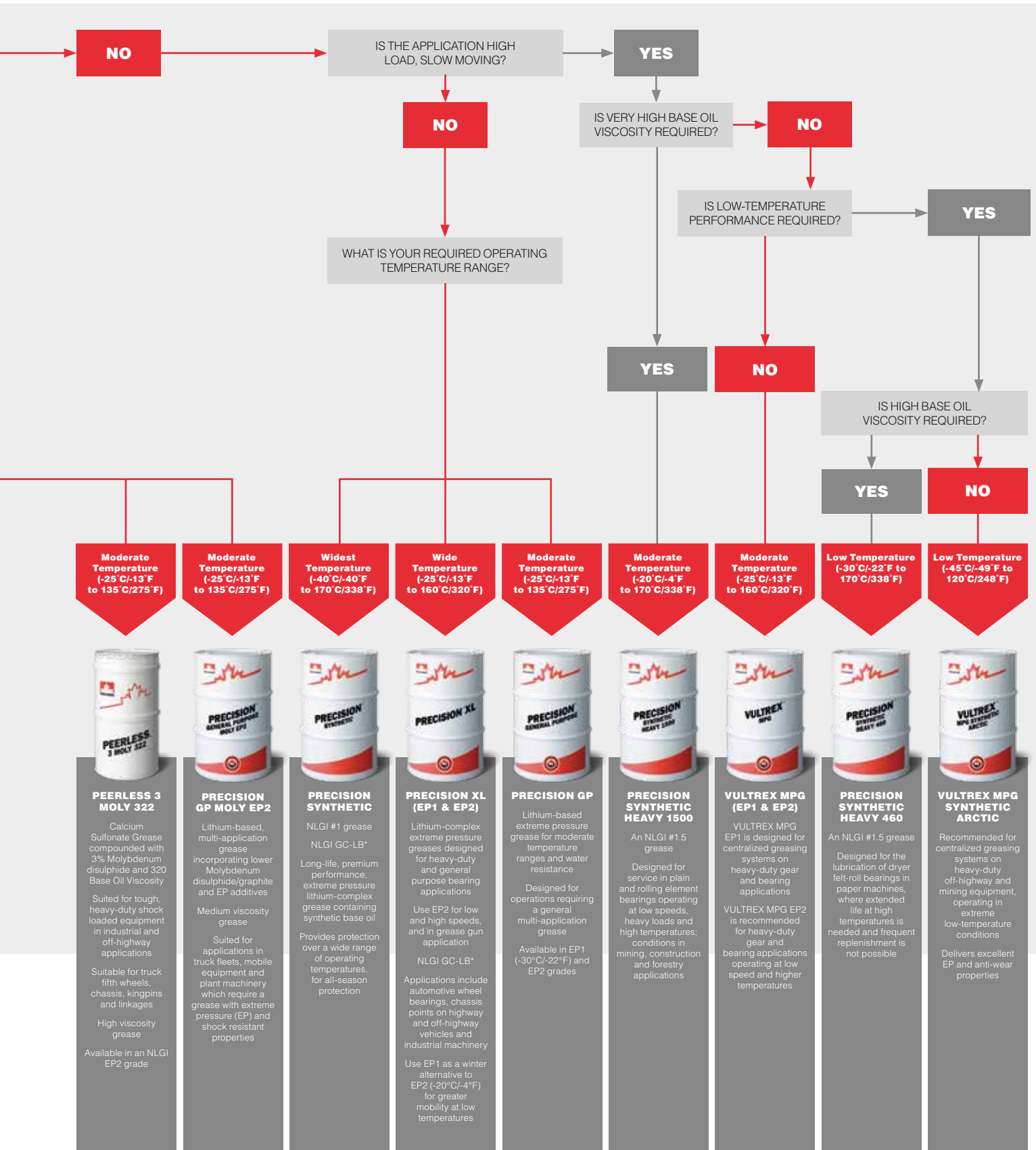
NOTE: IF YOU REQUIRE A FOOD GRADE GREASE, PLEASE REFER TO THE PURITY FG BROCHURE (LUB3372)

DO YOU REQUIRE A GREASE FOR AN OPEN GEAR APPLICATION?



*These greases meet the NLGI Automotive Service Classification GC-LB for wheel bearing and chassis lubrication.

MINING GREASES





READY TO ENHANCE YOUR OPERATIONAL EFFICIENCY

We're not your average lubricant specialist. Our highly experienced Technical Services Representatives and Research and Development team have an outstanding reputation for helping customers increase productivity. Our timely, on-site solutions could extend your equipment uptime and cut your operating costs.

Whether face-to-face or over the phone, we're ready to collaborate with you to produce cost-savings models, lube surveys and unbiased used oil analysis.

We can even help you to consolidate your lubrication product inventory. And, because we have a world-class distribution network, you can always count on having the lubricants you need, when you need them.

Protecting more than equipment

Now, more than ever, integrity is the foundation on which success is built. For this reason, we know how important it is for you to choose a supplier you can rely on.

For more than 35 years, we've abided by a strict code of conduct and built a reputation as a responsible and ethical corporate citizen. We understand that operating a business means doing more than simply meeting legal and regulatory requirements. We must balance economic growth with environmental stewardship and local community support.



"In our area of the rainforest, we deal with wide temperature ranges and a lot of rain – about 18 feet each year... Because of these weather conditions, we have to be especially meticulous about the protection of the tram's bearings. Rain can destroy bearings that aren't protected with the proper grease, and if a bearing breaks it has to be replaced, which is quite expensive. With PEERLESS OG2, we save money because of less maintenance time and labour required. We're very happy with the results we experience with Petro-Canada Lubricants' PEERLESS OG2."

Daniel Torres | Operations Manager
Rain Forest Aerial Tram Atlantic

"Usually, after a few months, the equipment was just not running its best, but since switching to PRECISION XL EP2, the equipment is running really smoothly all the time. The machine parts are not as slack as they used to be and they're not wearing down as often. My maintenance costs have gone down by about 20% because of the switch to PRECISION XL EP2."

Steve Racco | General Manager
Racco Iron and Metals

"What really sets Petro-Canada Lubricants apart is their experience in the mining industry, their understanding of our equipment and their local support to help us while we got started, and ongoing. If we had to use different original lubricants that OEMs demand, it would have been a constant headache. All we had to do was give the Petro-Canada Lubricants support team our list of needs and wants, and they took care of getting all of the equipment approvals we needed."

Tom Blake | Mine Maintenance
Superintendent | Copper Mountain



OUR NO-NONSENSE LUBRICANTS WARRANTY

“Petro-Canada Lubricants will repair damaged equipment, or replace damaged equipment parts resulting from a failure due to defects of the Petro-Canada Lubricants product, as long as the lubricant is used in accordance with your equipment manufacturer’s and our recommendations.”

IT’S MORE THAN JUST A WARRANTY. IT’S A COMMITMENT.

To learn more about how Petro-Canada Lubricants can help your business visit: **lubricants.petro-canada.com** or contact us at **lubecsr@petrocanadalsp.com**

Committed to the disciplined operation of our business.

