

# Switching to Synthetic Oil: A World of Difference

It's strange to think that pumping crude oil from the ground depends on the performance of that very same oil in its finished form. However, for many smaller crude oil reservoirs, the performance of the engines that run the pumps depends on proper maintenance and lubrication.

Trison Safetech Corp., a company based in Lloydminster, Alberta, specializes in maintaining approximately 300 well-pump engines for reservoir owners in Lloydminster and the surrounding area. The spark-ignition engines used are similar to passenger car engines, but modified with heavier duty industrial parts and fuelled by raw natural gas from the wells. Since natural gas has a higher octane than gasoline, the engines can run with higher compression ratios and higher power output.

Mike Nygren, of Trison Safetech Corp., is responsible for the proper maintenance and function of 30 of these engines for several different clients. They need to run non-stop in every operating condition, so it's a full-time job and then some to ensure they are always working in peak condition.

"These engines are running 24 hours a day, 365 days a year. They don't get a break," says Nygren. "There's considerable heat in the summer and considerable cold in winter. They just have to keep going. They've got to be tough."

Nygren says he was experiencing an ongoing frustration with the performance of the engines. He was spending considerable amounts of time on maintenance and too much money on engine oil and experiencing engine failures.

"We lost about three engines in three months," says Nygren. "That's about \$15,000 to rebuild the engines. Then there's your downtime and rental fees on replacement engines until you get yours back."

Nygren realized that he was losing engines because the engine oil was degrading.

"The oil we were using was causing a lot of extra work because we were having to change it every month," explains Nygren. "We also noticed oil consumption problems and were adding to the level almost everyday. Eventually, we were blowing motors because the oil was breaking down so fast."

Trison Safetech's customers hold them responsible for the proper function of their well pumps and Nygren couldn't afford to take chances with the engines. Nygren had read some technical information about Petro-Canada's DURON Synthetic 5W-40 heavy-duty engine oil and decided to try it in his engines. Since switching, he's noticed a considerable improvement in the performance of the lubricant and hasn't lost any engines.

"My customers drill the wells, buy all this equipment and leave it to us to take care of it," says Nygren. "They want answers when something breaks down. We've cut down on our service time because we're only doing oil changes every second month, not every month. We hardly ever have to add any oil. We've saved money on labour, time and the cost of lubricant since there's no top-ups and we're not losing engines. There is also less risk of failure from low oil level."

DURON Synthetic 5W-40 is a premium, all-season, full synthetic heavy-duty engine oil (HDEO), formulated to fight soot, extend oil drain intervals and perform in extreme temperatures. In a customer test, looking at the critical areas of viscosity retention and wear metal (iron and lead) minimization, DURON Synthetic either equalled or outperformed a leading competitor's more expensive full synthetic heavy duty oil. It's superior protection that delivers superior savings.

What sets Petro-Canada's DURON Synthetic apart from many of its competitors is that it starts with the patented HT purity process, which produces 99.9 per cent pure, crystal-clear synthetic base oils, the purest in the world. By removing the impurities that hinder competitive conventional



engine oil performance, DURON retains its "fresh oil" properties longer. Blended with advanced high-performance additives, DURON provides outstanding soot-dispersion capability and maintains its high oxidation stability at higher operating temperatures.

Nygren also says that the raw natural gas that fuels these

engines can be very hard on internal engine parts and engine oil because it can cause acidic corrosion and leave behind heavy varnish deposits inside the engine.

"Natural gas combustion will not only leave deposits, but it will actually break the oil down and eat away at things," explains Nygren. "It'll eat away at the aluminum and steel inside the engine. Since switching over to DURON Synthetic we've seen less wear and we can go for two months between oil changes."

Whether it's extended drain intervals, better wear protection, or improved oil consumption, the bottom line for Nygren is reliability and cost savings.

"With DURON Synthetic you know what you're getting," concludes Nygren.

"You know your engine will be running and if it's not, it's not the engine oil causing the problem. We have no future plans to switch engine oils. We've found our solution."

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## CASE STUDY

### Dual sensors provide plantwide gas detection at a cost savings



#### CHALLENGE

Protecting refineries, petrochemical plants and gas plants from the potential dangers of leaking hydrogen sulfide and combustible gases often requires installation of multiple fixed point gas detectors in the same area. Maintaining the safety of these plants requires that the gas monitors be placed within a few feet of each other,

which typically necessitates installation of two discrete detectors. Installation of fixed point gas detectors is complicated and costly; wiring must be encased in expensive conduit and the safety rules of the electrical code for hazardous locations must be maintained. When two detectors are installed, the implementation costs of the system are doubled.

#### SOLUTION

The new iTrans dual sensor fixed point gas monitor from Industrial Scientific provides a practical and cost effective solution to this problem. The iTrans accommodates two sensors, one for hydrogen sulfide and one for combustible gases (or many other combinations) with each transmitter head. The sensors can be installed directly on-board the transmitter or can be located remotely when the application requires the detectors to be several feet apart.

#### BENEFITS

The dual sensor iTrans in these applications reduces the number of transmitters and the costs of implementation by 50%. Flexibility of sensor combinations is beneficial for plantwide use of one gas detector model, regardless of the hazardous gas environment; standardization reduces training and operation costs. The iTrans Monitors utilize 4-20 mA transmission or Modbus RTU digital signal output to any control device or PLC, so existing systems can remain intact. To cut the costs of implementing your fixed gas detection system without compromising the safety of your plant, look to the iTrans Fixed Gas Monitor from Industrial Scientific.

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Phone: 1-800-338-3287



[www.multiquip.com](http://www.multiquip.com)



**MVC-64 plate compactor**

The MVC-64 Series generates 2,275 pounds (1,032 kilograms) of impact force with 5,600 vibrations per minute. These vibratory plate compactors travel up to 82 feet (25 meters) per minute and can compact areas as large as 5,658 square feet (526 square meters) per hour. The models are fitted with plates measuring 34.6 x 13.8 x 34.9 inches (879 x 350 x 886 millimeters). Weighing 165 pounds (75 kg.) with a water tank and 143 pounds (65 kg.) without, the MVC-64 Series can easily be operated by one person. Each unit features a convenient front-mounted and accessible vibrator assembly as well as a sealed belt cover to keep dirt and rocks out of the belt and engine area.

Phone: (310) 537-3700  
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**FCI GF03 flowmeter**

With a sensing element combining thermal mass flow and gas composition sensors, FCI's GF03 Flowmeter delivers a superior, lowest total-cost solution to flow measurement in flaring and other variable, mixed gas composition systems for petrochemical applications. The GF03 Flowmeter achieves the accuracy, range and resolution required to meet stringent air pollution regulations at total installed costs of up to 50 percent less than alternative technologies. It is designed for flare systems requiring regulatory emissions monitoring and reporting, continuous and event flow volume measurement, process leak detection/isolation and reduction, tributary and vent gas monitoring, loss control, material balancing and pilot/purge gas monitoring.

Phone: 416-499-4421  
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[www.flowstar.ca](http://www.flowstar.ca)



**Advancing gas flow measurement**

Yes, now there is a solution!! Flowstar Technologies' new Div 1, Class 1, DCR 900 technology excels in applications where there is no reliable gas flow measurement solution currently available such as plunger lift, coal bed methane, fuel gas metering, and flare gas applications.

The features that really set the DCR 900 above and beyond are a turndown ratio of up to 40:1, no requirement for external power, and the use of a flash card for data retrieval.

Phone: 780-485-6667  
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**M40 multi-gas monitor**

Industrial Scientific Corporation introduces the M40, a versatile multi-gas detector capable of measuring carbon monoxide, hydrogen sulfide, oxygen and combustible gases for a wide variety of confined space and personal monitoring applications. The M40 is a reliable, low-cost alternative for simultaneous monitoring and display of any configuration of one to four gases. Its rugged composite case is immune to radio frequency and electromagnetic interference, and houses four discrete sensors, a large LCD display, and rechargeable lithium-ion battery for up to 18 hours of continuous runtime. When gas concentrations exceed preset limits, the M40 monitor alerts the user with the bright visual and 90-dB alarms, and activates the internal vibrating alarm for high-noise

Phone: (412) 490-1879  
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**VIBRONET Signal Master**

Pre-mounted in a robust switching cabinet, the system is designed for quick and easy commissioning, while being easily expandable. The user can access the Signal Master Plug and Go Online Conditioning Monitoring System by Pruftechnik as easily as a homepage on the internet. All the functions for in-depth diagnosis are provided via an integrated web server so that, apart from a standard browser with Java plug-in, no special PC software is needed. System installation, maintenance and measurements are performed online via the internet/ethernet or internet-worldwide at local rates. For special monitoring tasks, measurement functions can be added and individually tailored.

Phone: (604) 736-7301  
Info@hyatt-ind.com

[www.inuktun.com](http://www.inuktun.com)



**VLR-300 long-range inspection system**

The VersaTrax VLR-300 long-range inspection system is remotely operated to a distance of up to 6000ft. This system was designed to operate in 12 inch minimum pipe sizes, via a lightweight, low-friction tether cable. Four of Inuktun's MiniTrac crawler units provide a steerable platform and the ability to maneuver through awkward bends. High quality video is provided by the on-board Spectrum 100 pan, tilt, zoom primary camera and two FirefEYE cameras, monitoring the vehicle and tether during inspection operations. On dry land or 100ft underwater, this VersaTrax VLR-300 long-range inspection system can literally go where no man has gone before.

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**Exclusive Pluggable Connector**

Expanding its line of industrial "multipole" connectors, Wieland Electric has developed the revos MOT pluggable connector for environments where typical metal hoods and housings would corrode. The high-density connector provides a reliable connection rated at IP65 (NEMA type 4). The hood and housing is constructed of lightweight, corrosion and UV resistant polyamide and is rated for operation in environments ranging in temperature from - 40°C to + 80°C.

The revos MOT connector consists of 6 basic components, including hood, housing, female insert, female crimp contacts, male insert and male crimp contacts.

Phone: (905) 829-8414  
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**New specialized, stand-alone gas sensors**

The new CEA 420 Series are remote gas monitoring transmitters that use unique, patented sensors which are highly specific, fast responding, poison resistant, and are unaffected by moisture or temperature changes. These stand-alone sensors are available for Ammonia, Hydrocarbons, Freons, Ethylene Oxide, Hydrogen, Combustibles, Sulfur Dioxide, Hydrogen Sulfide, Carbon Monoxide, and numerous other gases. The CEA 420 Series are compact, durable, explosion proof, and easy to maintain and operate. These units can be used with most power requirements to produce a continuous 4-20mA signal proportional to the gas concentration. The signal can then be sent to any device capable of interpreting a 4-20mA output.

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