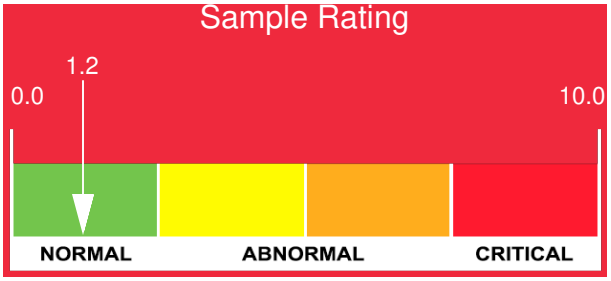
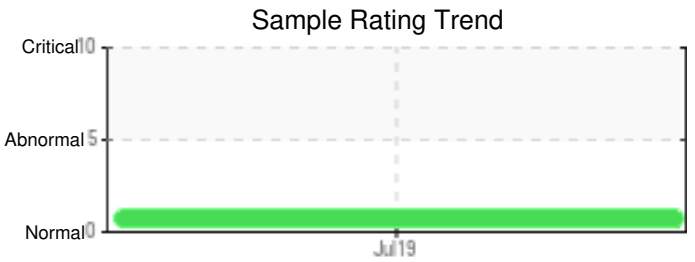




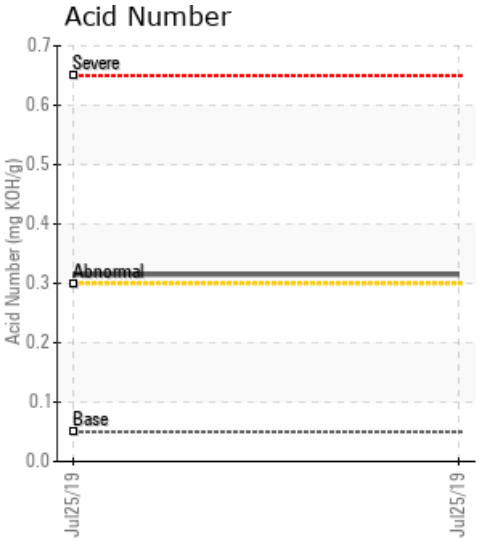
8971

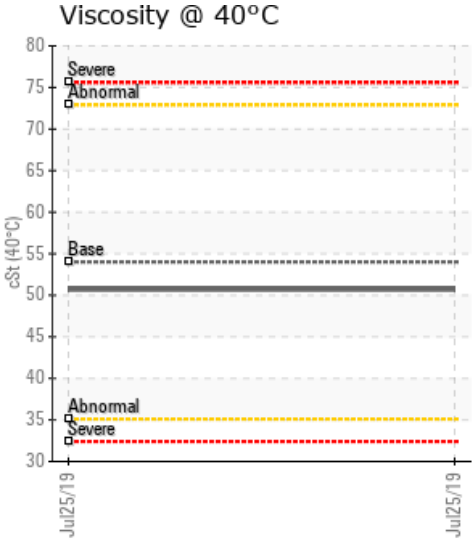
Customer: PTRHTF10219	System Information	Sample Information
Northland Constructors 502 Halvor Dr Duluth, MN 55803 USA Attn: Scott Seeley Tel: (218)830-1028 E-Mail: srseely1@email.com	System Volume: 180 gal Bulk Operating Temp: 340F / 171C Heating Source: Blanket: Fluid: SHELL HEAT TRANSFER OIL S2 X Make: HEATEC	Lab No: 02302590 Analyst: Neil Buchanan Sample Date: 07/25/19 Received Date: 08/14/19 Completed: 08/16/19

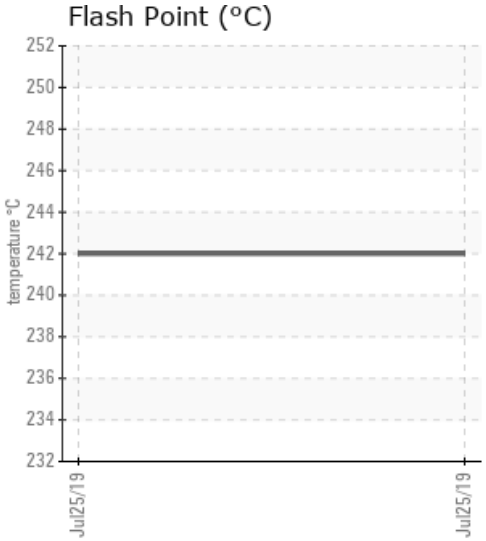
Recommendation: Acid number (AN) is moderately high and viscosity at 40C is increasing. Still fit for service but should continue to monitor.

Comments: Acid Number (AN) is abnormally high.

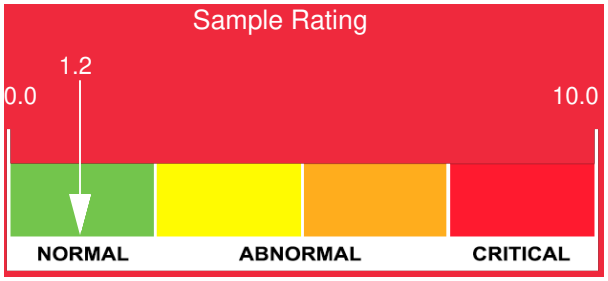
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/25/19	08/14/19	8y	CIRCULATING TANK	468 / 242	93.0	50.7	0.315	0.292	727 / 386	851 / 455	958 / 515	0.14
Baseline Data				500 / 260		54	0.05					

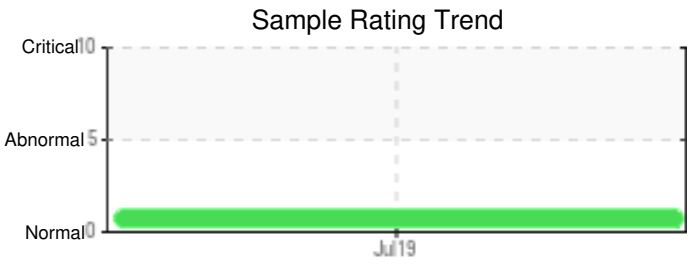






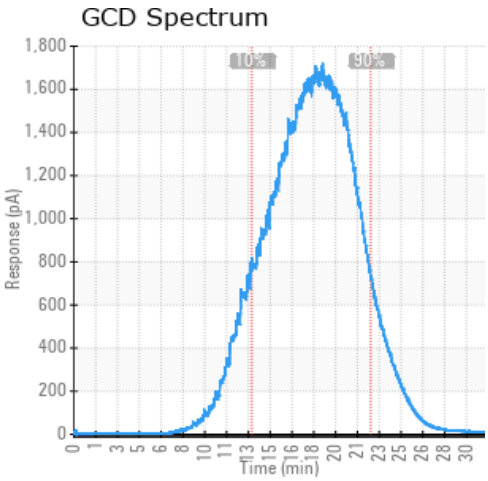
PETRO-CANADA LUBRICANTS

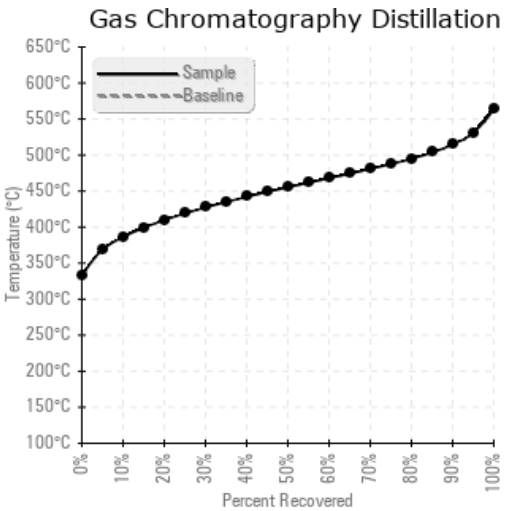


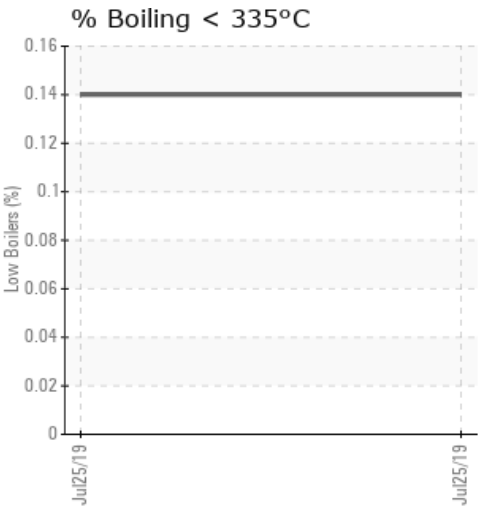


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
07/25/19	37	0	0	0	8	3	0	0	0	0	5	0	2	0	0	0	0	0	0	0	19	0	10	26
Baseline Data			0	0						0			0	0					0				0	

Elemental anaysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]







Historical Comments
