

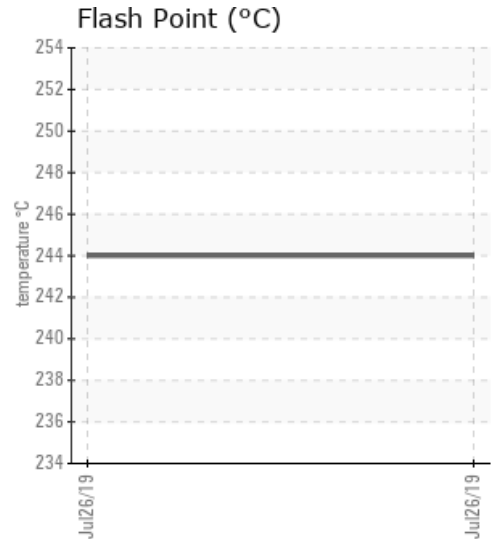
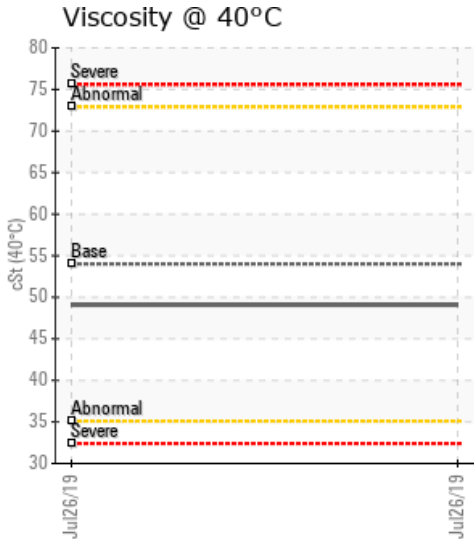
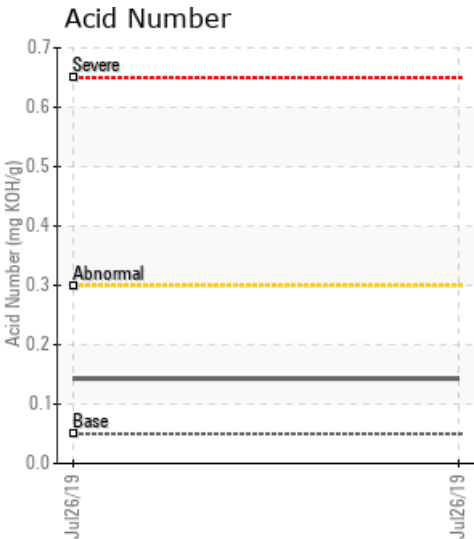
**8970**

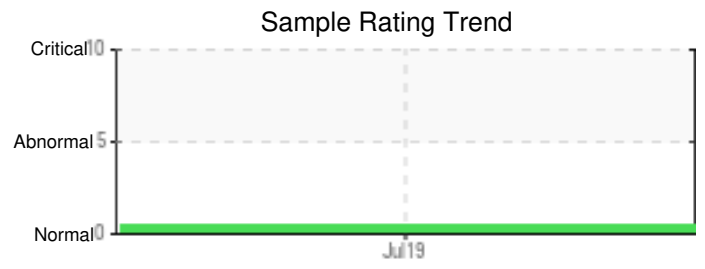
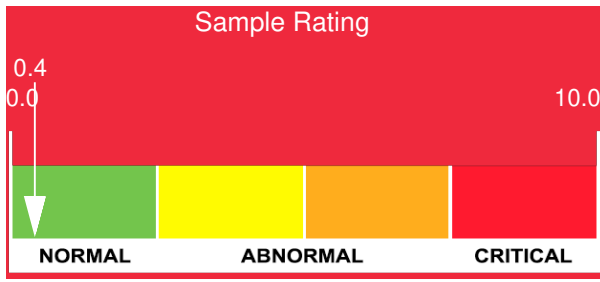
Customer: PTRHTF10219	System Information	Sample Information
Northland Constructors 502 Halvor Dr Duluth, MN 55803 USA Attn: Scott Seeley Tel: (218)830-1028 E-Mail: srseely1@email.com	System Volume: 300 gal Bulk Operating Temp: 345F / 174C Heating Source: Blanket: Fluid: SHELL HEAT TRANSFER OIL S2 X Make: HEATEC	Lab No: 02302589 Analyst: Neil Buchanan Sample Date: 07/26/19 Received Date: 08/14/19 Completed: 08/16/19

Recommendation: Iron and calcium levels moderately high. Sample looks good for further use.

Comments: Calcium ppm levels are notably high.

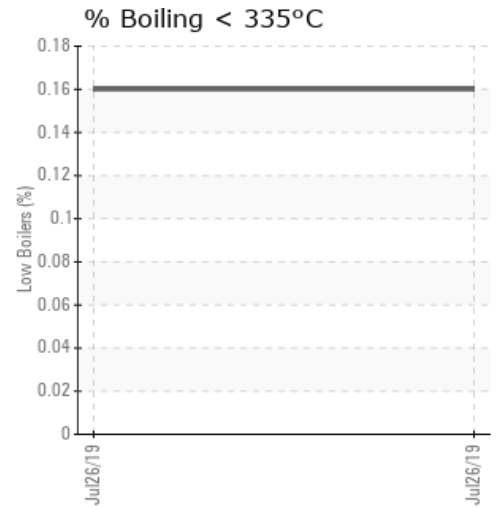
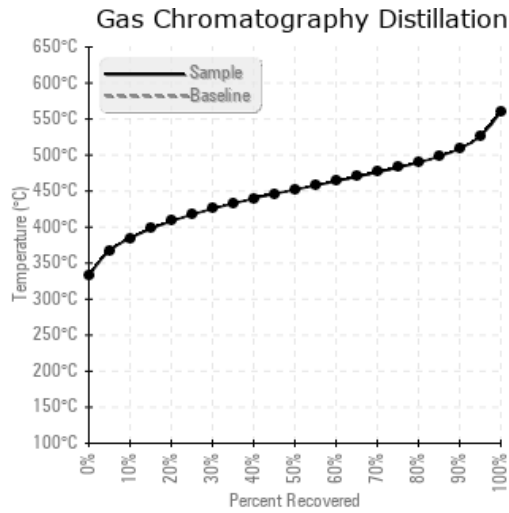
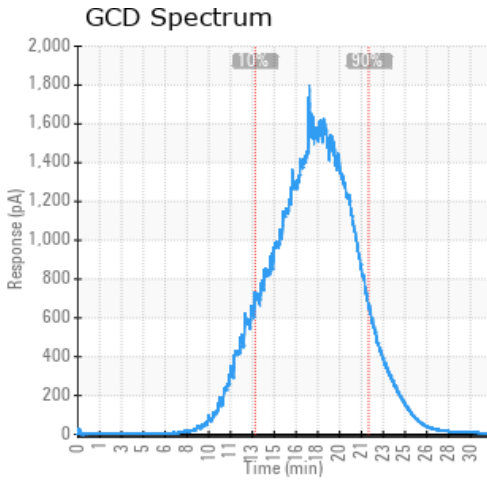
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/26/19	08/14/19	18y	EXPANSION TANK	471 / 244	100.0	49.1	0.143	0.098	724 / 384	846 / 452	948 / 509	0.16
Baseline Data				500 / 260		54	0.05					





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
07/26/19	61	0	0	0	2	0	0	0	0	0	3	0	2	0	0	0	0	0	1	1	32	0	16	15
Baseline Data			0	0						0			0	0					0				0	

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



### Historical Comments


Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.