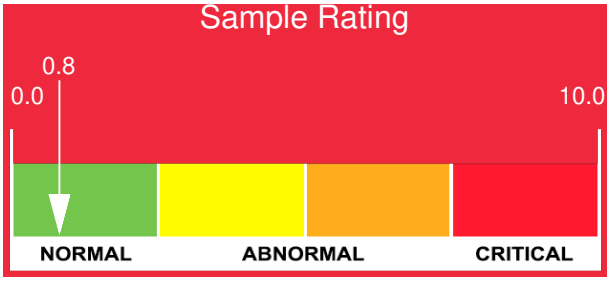
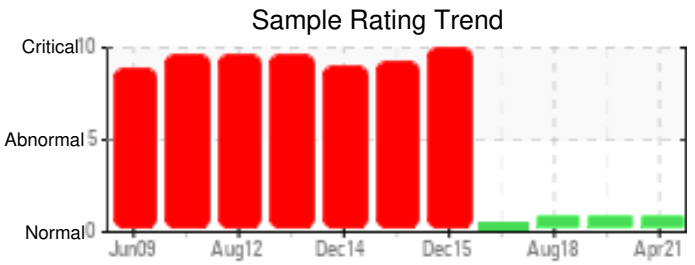




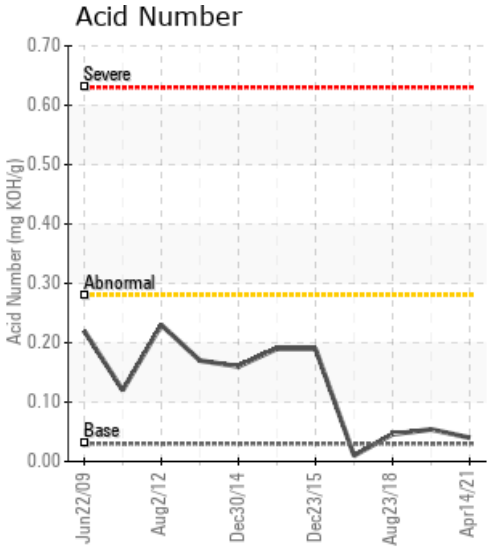
LAMINATE OIL HEATER

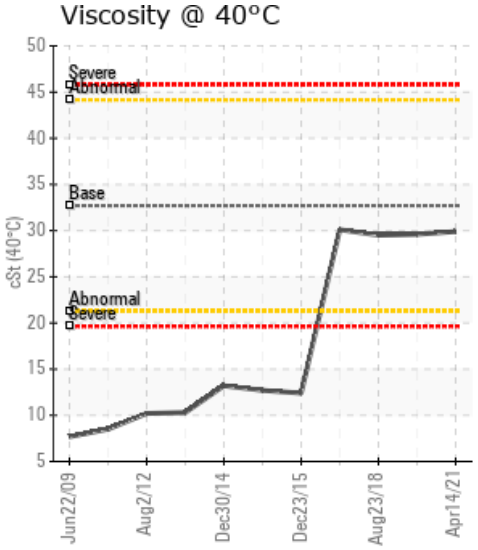
Customer: PTRHTF10067	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 620 AERO DRIVE SHREVEPORT, LA 71107 USA Attn: Chris Ledbetter Tel: E-Mail: chris.ledbetter@saint-gobain.com	System Volume: 1100 gal Bulk Operating Temp: 460F / 238C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: FIRST THERMAL HEATER	Lab No: 02416845 Analyst: Jake Finn Sample Date: 04/14/21 Received Date: 04/23/21 Completed: 05/03/21 Jake Finn jake.finn@hollyfrontier.com

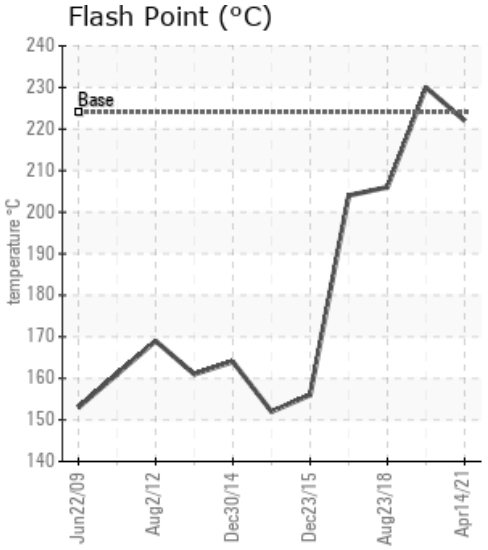
Recommendation: 90% distillation point (GCD) is abnormally high, but sample other wise indicates the fluid is suitable for continued use. Please sample and resubmit for testing in one year.

Comments: (GCD) 90% Distillation Point is abnormally high.

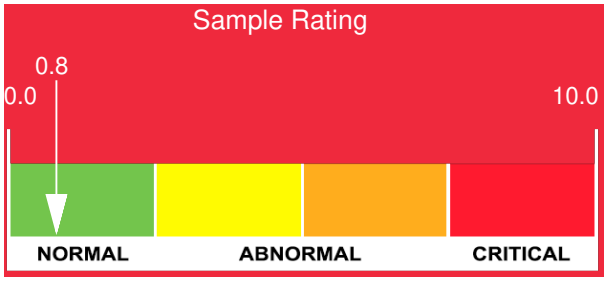
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/14/21	04/23/21	0.0m		432 / 222	16.3	29.9	0.04	0.039	690 / 366	793 / 423	922 / 494	3.29
01/29/20	02/05/20	0.0m	SOUTH MAIN HOT PUMP	446 / 230	8.8	29.6	0.054	0.045	669 / 354	768 / 409	865 / 463	3.58
08/23/18	08/31/18	36.0m	INLINE FILTER	403 / 206	11.5	29.5	0.046	0.015	697 / 369	798 / 426	902 / 483	1.59
06/21/17	07/18/17	18.0m	DRAIN LINE	399 / 204	21.5	30.1	0.01	0.038	694 / 368	799 / 426	900 / 482	2.73
12/23/15	01/04/16	0.0m	FILTER SCREEN DRAIN	313 / 156	42.3	12.4	0.19	0.105	507 / 264	748 / 398	841 / 449	29.70
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

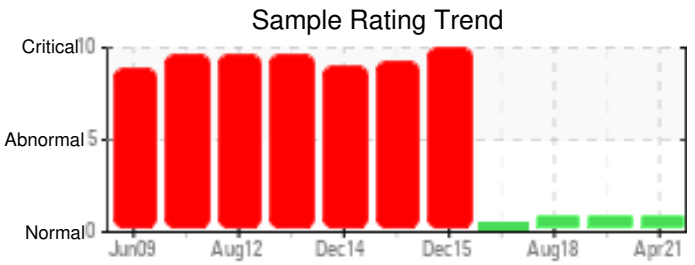






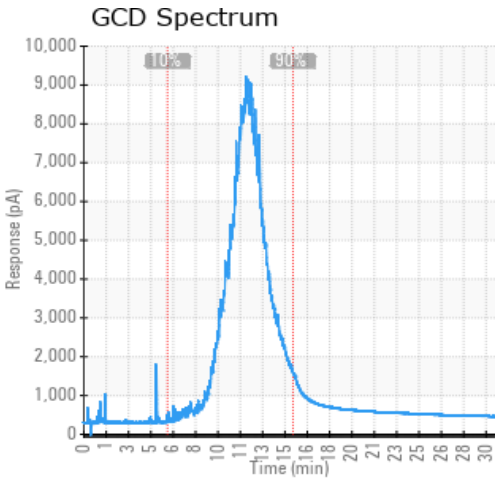
PETRO-CANADA LUBRICANTS

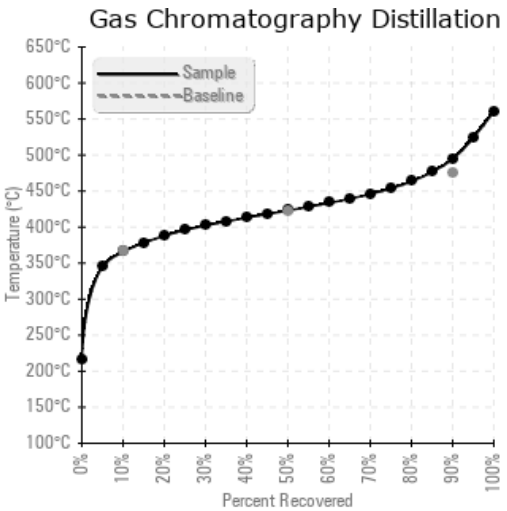


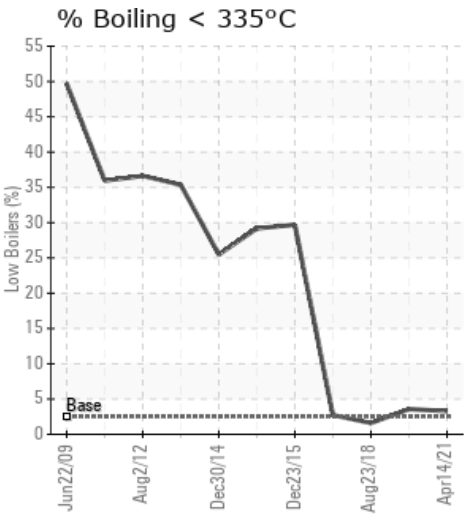


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
04/14/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0
01/29/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0
08/23/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0
06/21/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0
12/23/15	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	1
Baseline Data			0	0						0			0	0					0				270	

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







Historical Comments

01/29/20	The oil condition is acceptable and warrants no action at this time. Re-sample at next scheduled interval. (GCD) 90% Distillation Point is marginally low.
08/23/18	The oil condition is looking good and please resample every year at least.
06/21/17	The oil appears to be in excellent condition. Based on the results there are no signs of degradation or contamination by asphalt, water or other foreign elements. Viscosity, flash point and other properties look normal. Re-sample yearly
12/23/15	This system primarily contains Therminol 55 that is in the state of thermal degradation. The viscosity and COC Flash Point are well below that expected for Therminol 55, and the lower temperature boilers (GCD vapors) are significantly higher than expected for Therminol 55. In order to avoid the continuous maintenance costs of partial drain and refills, that may not show benefit, it is advisable to totally drain, flush, and refill with Petro-Therm. Once running on Petro-Therm, Calflo AF can be used as a top up fluid. The use of Petro-Therm as an initial fill fluid is consistent with Saint-Gobain policy. I am not sure if there is a volume threshold for when the use of Petro-therm as an initial fill fluid is mandatory. (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is severely low. (GCD) 90% Distillation Point is severely low. COC Flash Point is severely low. Visc @ 40°C is severely low.