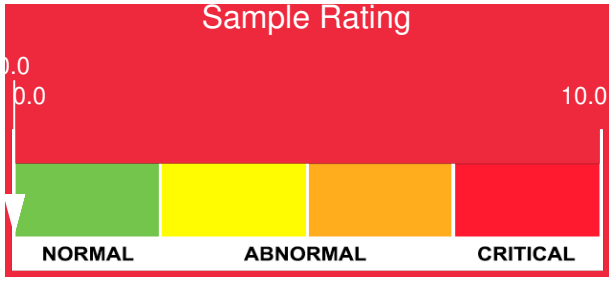
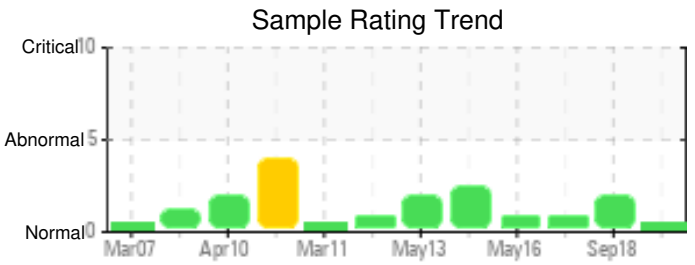




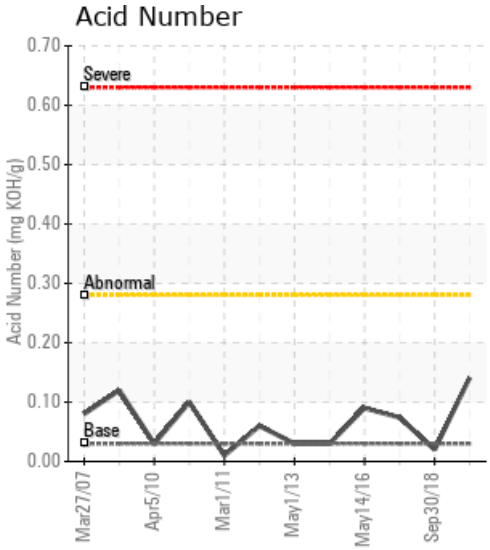
LINE 1 FILLER HEATER SYSTEM

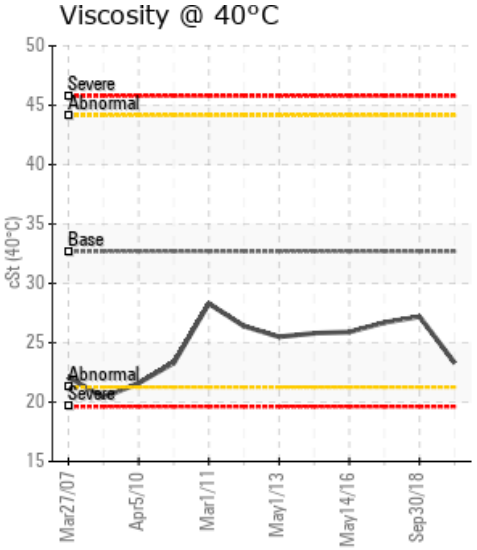
Customer: PTRHTF10069	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 3303 EAST 4TH AVENUE SHAKOPEE, MN 55379 USA Attn: Patrick Wallace Tel: E-Mail: patrick.wallace@saint-gobain.com	System Volume: 5670 gal Bulk Operating Temp: 428F / 220C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02315479 Analyst: Gaston Arseneault Sample Date: 09/24/19 Received Date: 10/21/19 Completed: 11/12/19 Gaston Arseneault gaston.arseneault@hollyfrontier.com

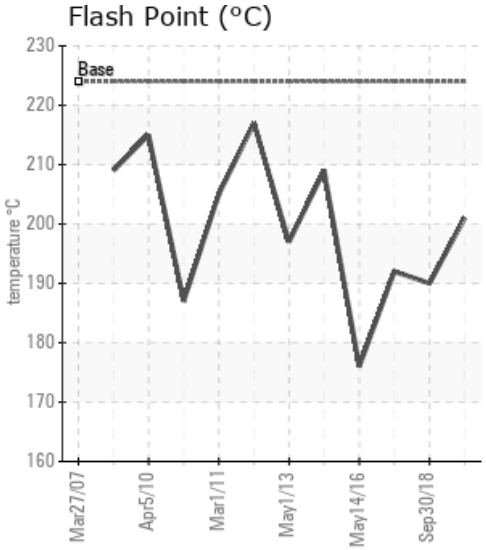
Recommendation: The oil is holding steady with the properties remaining normal. Although we are seeing a drop in viscosity, the flash point increased. let's just keep an eye on it until the next sample. Contamination by asphalt, water or other elements is insignificant or non-detectable. No actions needed at this time. Re-sample at next scheduled interval

Comments:

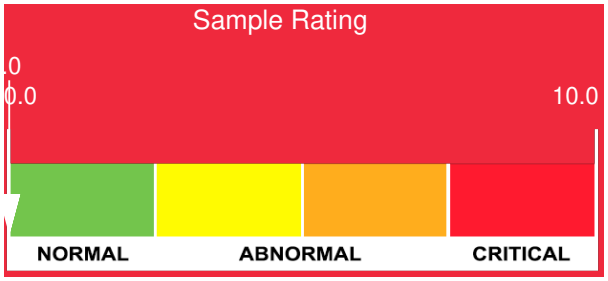
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/24/19	10/21/19	0.0y	MAIN SYSTEM FLOW	394 / 201	9.0	23.3	0.141	0.074	699 / 371	798 / 426	898 / 481	1.86
09/30/18	10/10/18	0.0y		374 / 190	8.4	27.2	0.02	0.034	691 / 366	782 / 417	877 / 469	0.95
09/02/17	09/12/17	4.0y	MAIN SYSTEM FLOW	378 / 192	9.6	26.7	0.074	0.035	685 / 363	788 / 420	889 / 476	3.31
05/14/16	05/24/16	0.0y	MAIN SYSTEM FLOW	349 / 176	1.8	25.9	0.090	0.046	682 / 361	787 / 419	880 / 471	3.93
06/06/14	06/17/14	0.0y	MAIN FLOW NEAR PUMP	408 / 209	74.8	25.8	0.03	0.054	662 / 350	761 / 405	861 / 460	5.50
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

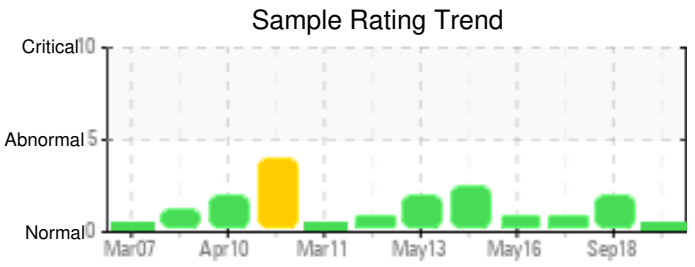






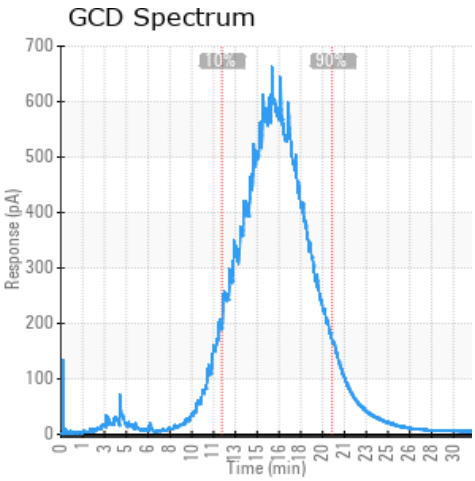
PETRO-CANADA LUBRICANTS

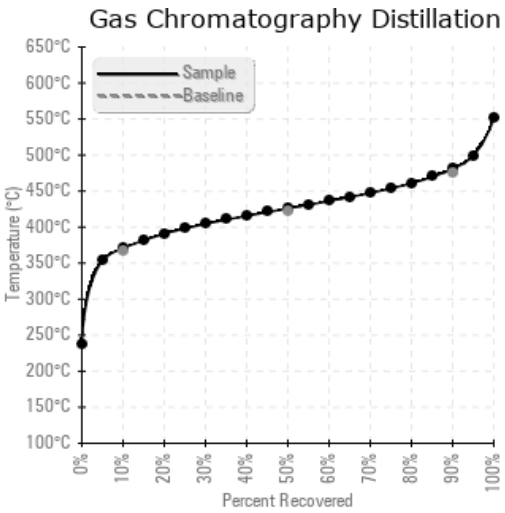


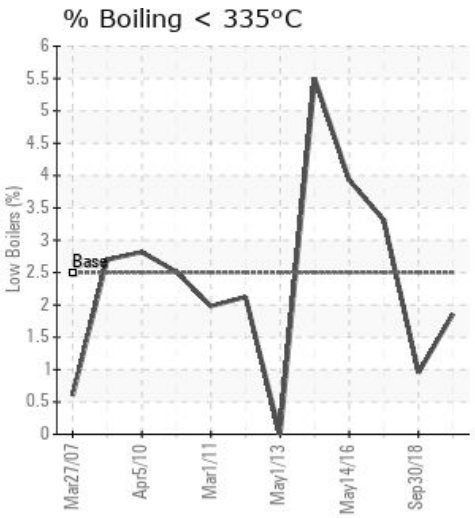


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
09/24/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0
09/30/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0
09/02/17	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0
05/14/16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0
06/06/14	33	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0	60	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

09/30/18	The flash point is a bit low because of the reduced viscosity but it remains stable from year to year. Re-sample at next scheduled interval. No trace of contamination by asphalt or the elements or fluid degradation. COC Flash Point is marginally low.
09/02/17	The oil condition is consistent with previous samples. The viscosity remains a little bit low. No immediate action is required at this time but you can vent the low boilers out and replace the lost volume with fresh oil as preventative measure. Re-sample at next normal interval. COC Flash Point is marginally low.
05/14/16	COC Flash Point is abnormally low. Some low boiler formation is evident in the GCD. Other properties look good. Resample next interval to monitor. COC Flash Point is abnormally low.
06/06/14	Results appear normal sine the last sample and we do not see any concerning trend. Re-sample same time next year. (GCD) 90% Distillation Point is marginally low.