

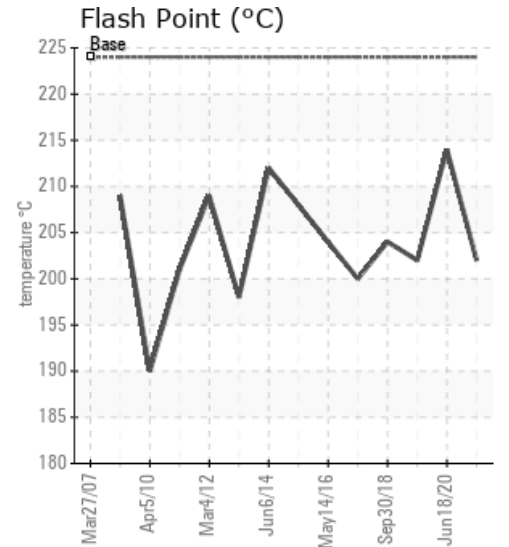
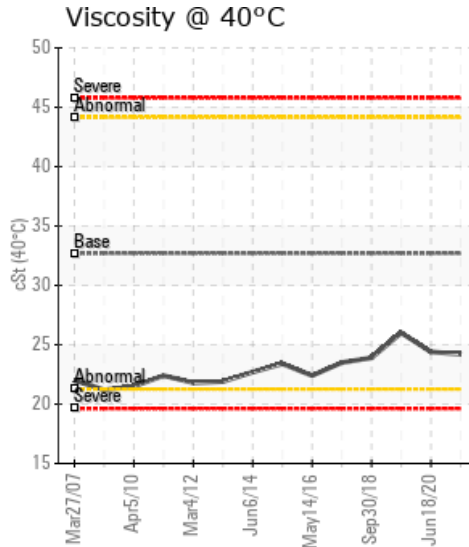
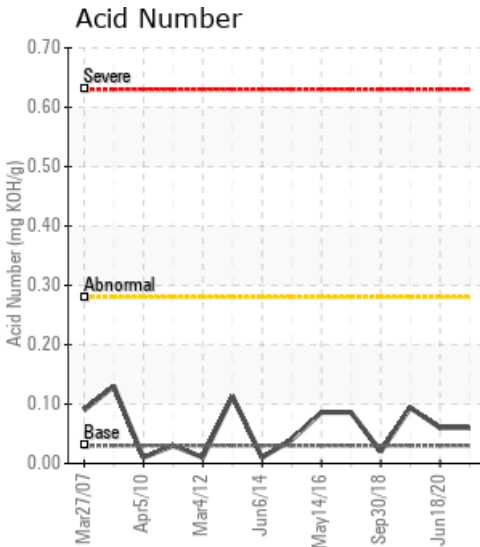
MODIFIED ROOM HOT OIL SYSTEM

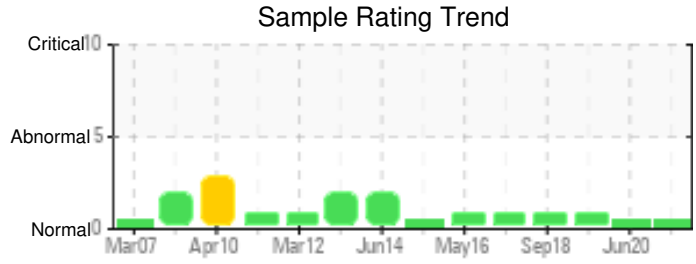
Customer: PTRHTF10069	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 3303 EAST 4TH AVENUE SHAKOPEE, MN 55379 USA Attn: Patrick Wallace Tel: E-Mail: patrick.wallace@saint-gobain.com	System Volume: 4158 gal Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02420346 Analyst: Neil Buchanan Sample Date: 04/29/21 Received Date: 05/11/21 Completed: 05/13/21 Neil Buchanan neil.buchanan@hollyfrontier.com

Recommendation: Sample results look good. Resample next interval to monitor.

Comments:

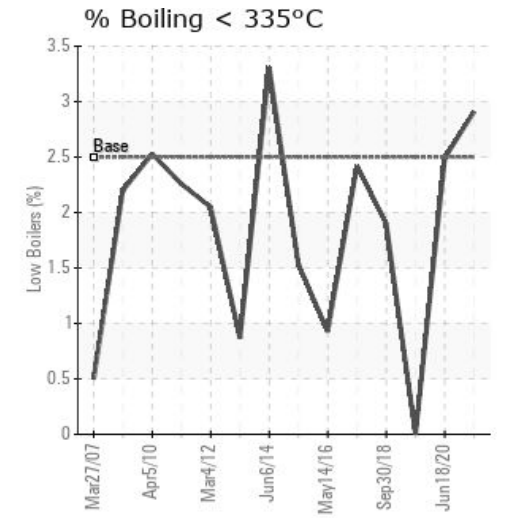
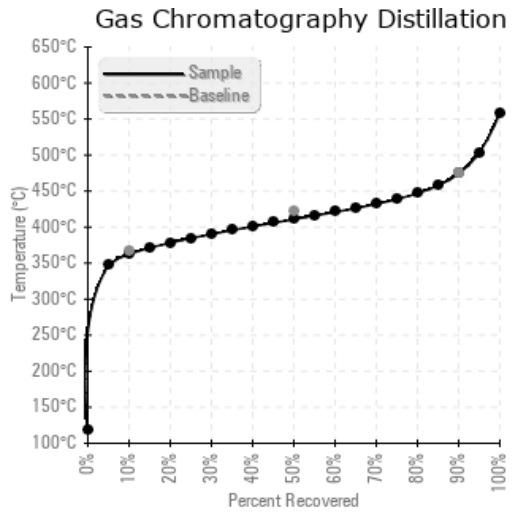
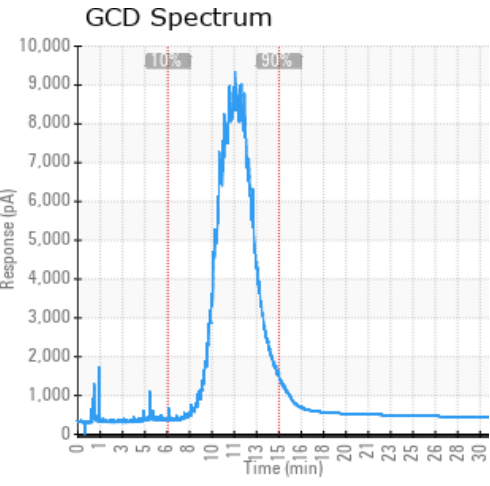
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/29/21	05/11/21	15.0y		396 / 202	12.5	24.2	0.06	0.038	684 / 362	771 / 411	885 / 474	2.91
06/18/20	06/29/20	0.0y	main system	417 / 214	14.5	24.4	0.06	0.103	689 / 365	781 / 416	881 / 471	2.49
09/24/19	10/21/19	0.0y	MAIN SYSTEM FLOW	396 / 202	19.1	26.0	0.094	0.093	695 / 368	778 / 415	868 / 464	0.00
09/30/18	10/10/18	0.0y		399 / 204	17.0	23.9	0.02	0.028	674 / 357	754 / 401	859 / 459	1.90
09/02/17	09/12/17	4.0y	MAIN SYSTEM FLOW	392 / 200	10.1	23.5	0.086	0.037	683 / 362	772 / 411	867 / 464	2.42
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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
04/29/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0
06/18/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0
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	34	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	33	0
09/02/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0
Baseline Data			0	0						0			0	0					0				270	

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



Historical Comments

06/18/20	Sample properties look good and it is free of contamination. Resample next interval to monitor.
09/24/19	The oil is holding steady with the properties remaining normal from sample to 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 (GCD) 90% Distillation Point is marginally low.
09/30/18	The results are consistent with previous history. Resample at next scheduled interval. (GCD) 90% Distillation Point is abnormally low.
09/02/17	The oil condition is consistent with previous samples. The viscosity remains low but the flash point is staying strong. 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. (GCD) 90% Distillation Point is marginally low.

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