

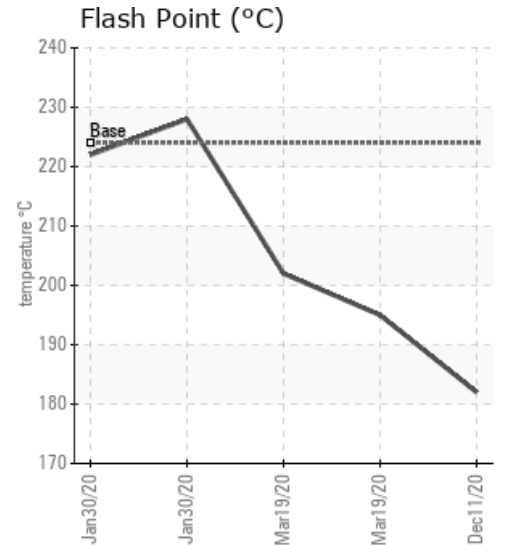
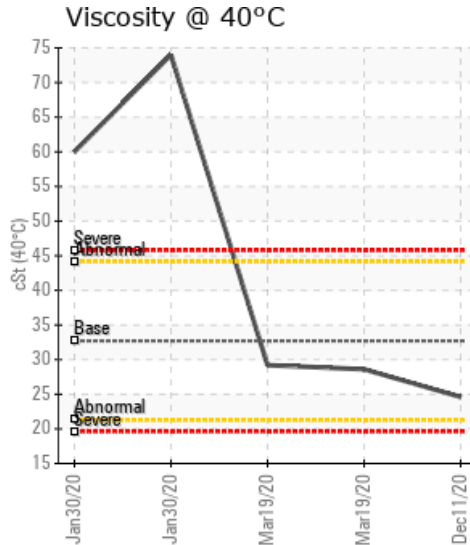
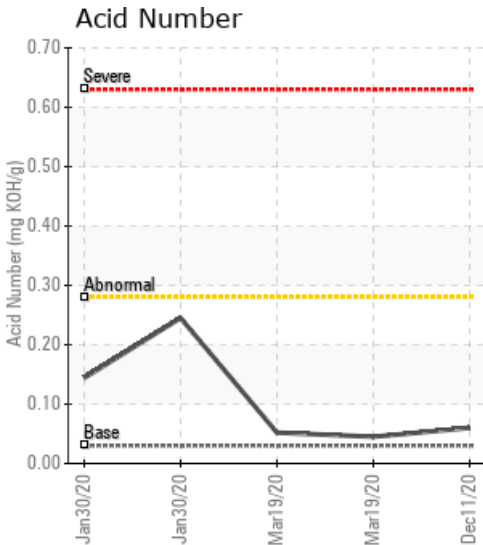
[2020 BLENDS] 2020 BLENDS - MAIN HOT OIL SYSTEM

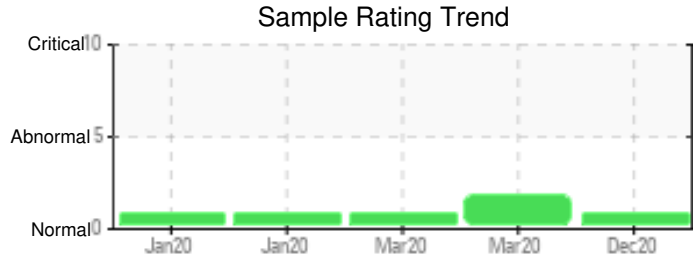
Customer: PTRHTF10068	System Information	Sample Information
Certainteed - Saint Gobain 1077 PLEASANT ST NORWOOD, MA 02062 USA Attn: David Fletcher Tel: (781)551-0656 E-Mail: david.r.fletcher@saint-gobain.com	System Volume: 5000 gal Bulk Operating Temp: 560F / 293C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: A.M.KINNEY	Lab No: 02398832 Analyst: Doug Vrooman Sample Date: 12/11/20 Received Date: 01/20/21 Completed: 01/27/21 Doug Vrooman douglas.vrooman@petrocanadalsp.com

Recommendation: We are noticing that the viscosity has dropped to 24.6 cSt @ 40C as well as COC Flash point which has dropped to 182. We recommend Venting (boil-off). We would also recommend venting more frequently and adding fresh (make-up) fluid more frequently to assist with fluid condition. Resample at routine intervals.

Comments: COC Flash Point is marginally low.

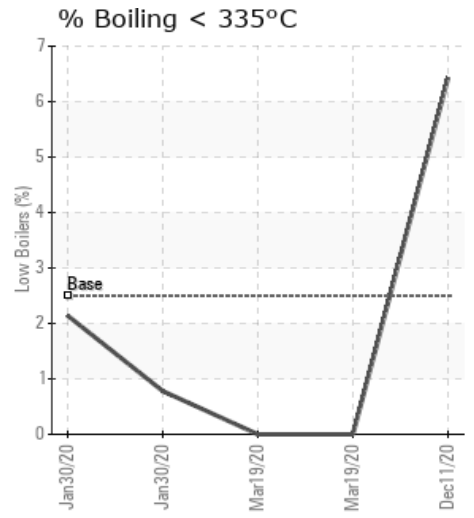
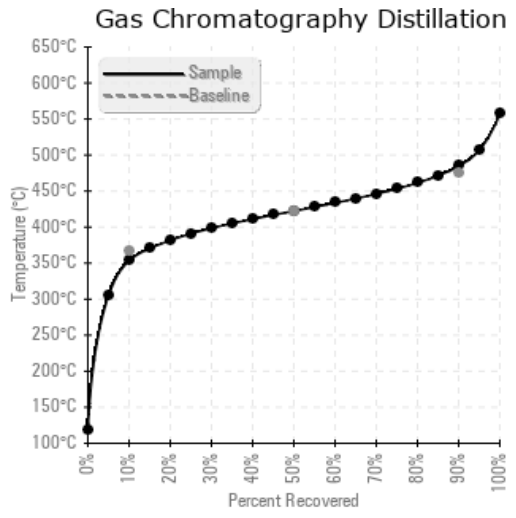
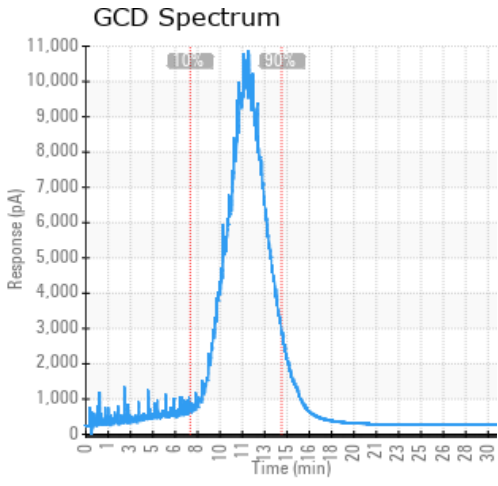
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/11/20	01/20/21	7y	HEAT EXCHANGER	360 / 182	21.2	24.6	0.06	0.140	669 / 354	792 / 422	904 / 485	6.43
03/19/20	03/24/20	7y	UIP HEATER	383 / 195	10.0	28.6	0.045	0.089	715 / 379	803 / 428	907 / 486	0.00
03/19/20	03/24/20	7y	UIP HEATER	396 / 202	4.1	29.2	0.052	0.083	717 / 380	803 / 429	907 / 486	0.00
01/30/20	02/11/20	6y	DUPLEX FILTERS	442 / 228	18.6	74.0	0.245	0.106	696 / 369	792 / 422	896 / 480	0.78
01/30/20	02/11/20	17y	DUPLEX FILTERS	432 / 222	22.2	60.0	0.144	0.050	690 / 365	791 / 422	899 / 482	2.14
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
12/11/20	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0
03/19/20	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	120	0
03/19/20	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	145	0
01/30/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0
01/30/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	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

03/19/20	This blend is 60% current oil + 40% fresh Calflo AF. The flash point improved from 307F to 383F and the low boilers also went down judging by the GCD 10% boiling temperature increasing from 692F to 714F. (GCD) 90% Distillation Point is marginally high.
03/19/20	This blend is 50% current oil + 50% fresh Calflo AF. The flash point improved from 307F to 396F (the 40% Calflo AF addition raised the flash point to 383F). The low boilers also went down judging by the GCD 10% boiling temperature increasing from 692F to 716F (the 40% addition raised the GCD 10% to 714F). (GCD) 90% Distillation Point is marginally high.
01/30/20	Visc @ 40°C is severely high.
01/30/20	discard this sample, correct blend samples coming Visc @ 40°C is severely high.

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