

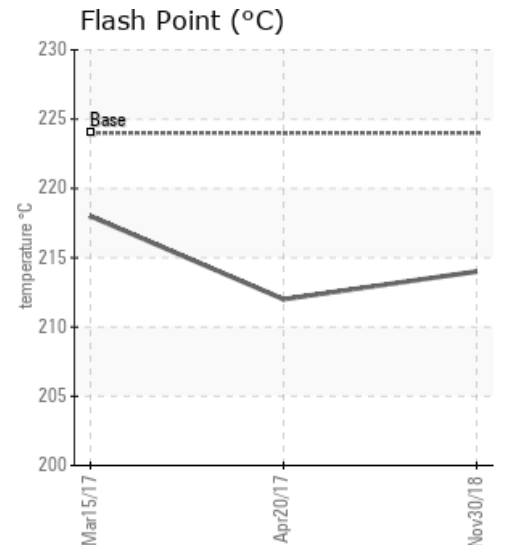
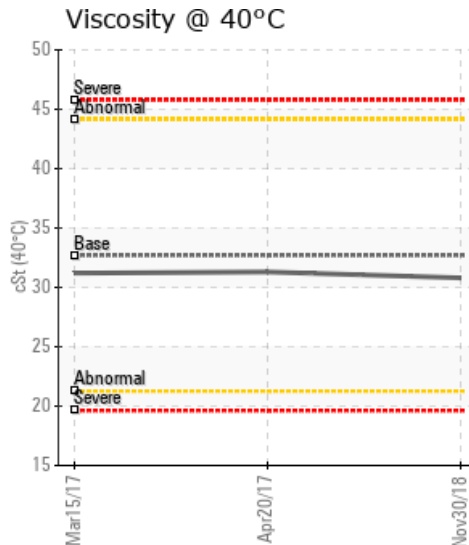
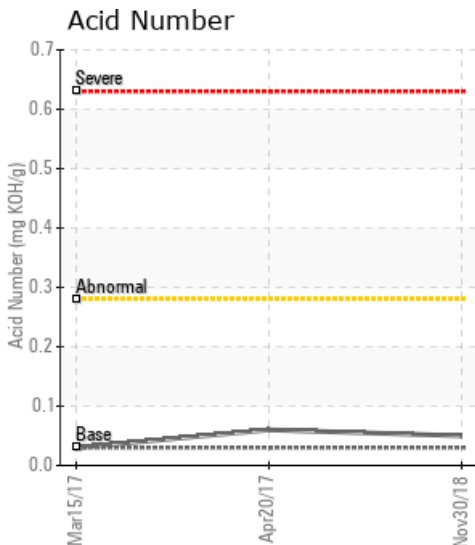
### TFS H/O SYSTEM #3

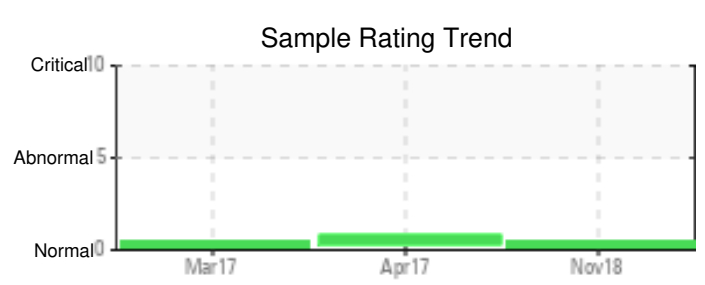
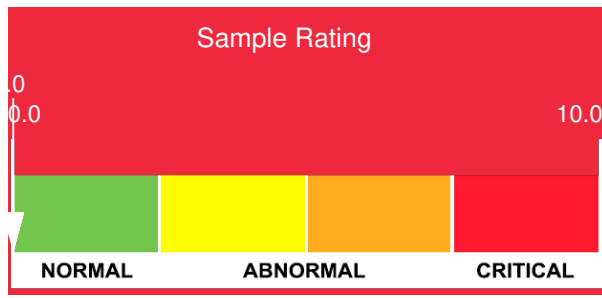
Customer: PTRHTF10176	System Information	Sample Information
CERTAINEED ROOFING 100 CERTAINEED DR JONESBURG, MO 63351 USA Attn: Jeff Montgomery Tel: (952)261-9532 E-Mail: jeffrey.d.montgomery@saint-gobain.com	System Volume: 5406 gal Bulk Operating Temp: 525F / 274C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: FSE	Lab No: 02258124 Analyst: Gaston Arseneault Sample Date: 11/30/18 Received Date: 12/18/18 Completed: 01/01/19

Recommendation: The oil condition is normal and within acceptable parameters. No actions needed at this time based on the results. Re-sample at next scheduled interval.

Comments:

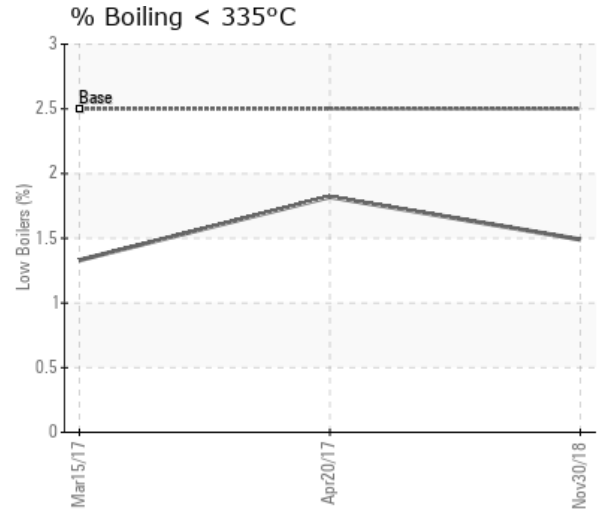
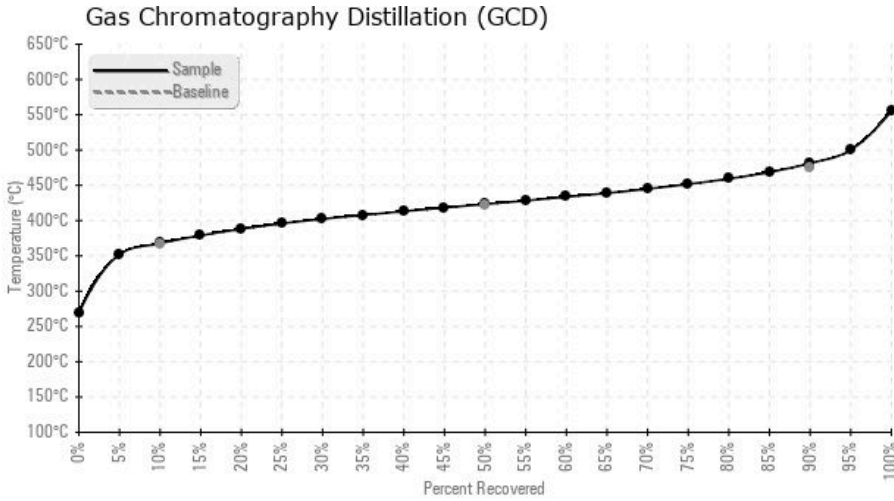
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/30/18	12/18/18	0m		417 / 214	16.8	30.8	0.05	0.055	694 / 368	794 / 423	898 / 481	1.49
04/20/17	05/01/17	17m	STRAINER MAIN PUMP	414 / 212	107.4	31.3	0.06	0.103	694 / 368	798 / 426	912 / 489	1.82
03/15/17	04/05/17	16m	STRAINER NR MAIN PMP	424 / 218	7.0	31.2	0.03	0.047	696 / 369	796 / 424	893 / 479	1.33
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	
11/30/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189	0	
04/20/17	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	187	0
03/15/17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	224	0
<b>Baseline Data</b>			0	0						0			0	0					0					270	

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



Historical Comments	
04/20/17	The fluid looks good in terms of the results. Viscosity is normal, flash point is strong, contamination is extremely low, no Vanadium (tracker of asphalt in the fluid). No action needed and we suggest to re-sample yearly. (GCD) 90% Distillation Point is marginally high.
03/15/17	The fluid looks good in terms of the results. Viscosity is normal, flash point is strong, contamination is extremely low, no Vanadium (tracker of asphalt in the fluid). No action needed and we suggest to re-sample yearly.

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