

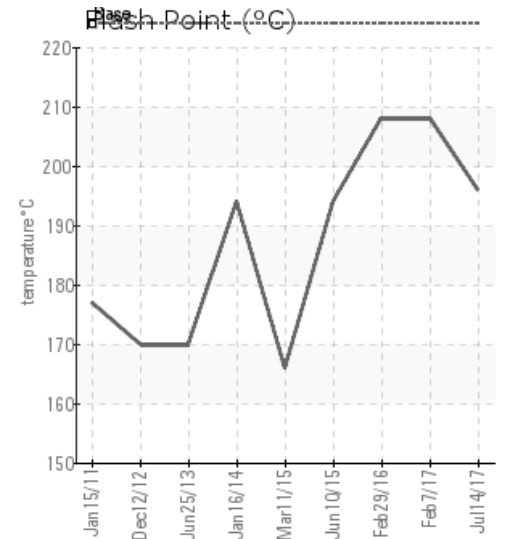
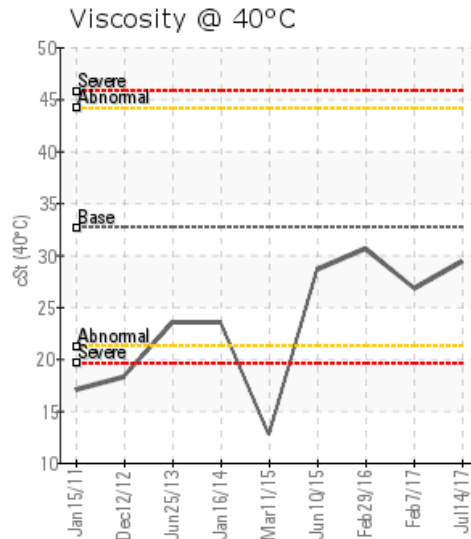
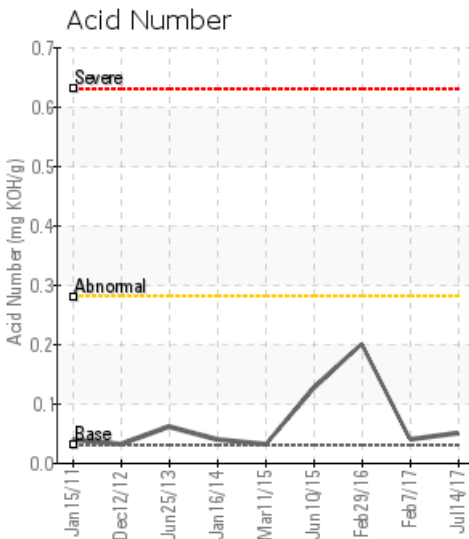
## ECLIPSE HEATER

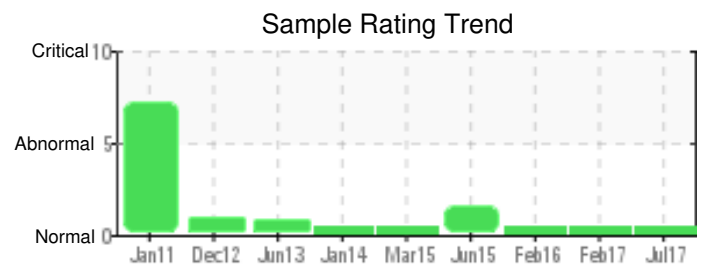
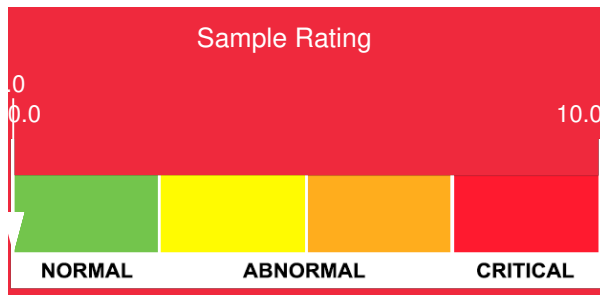
Customer: PTRHTF10059	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 11519 US RT 250 N MILAN, OH 44846 USA Attn: DAVE BLAKELY Tel: (419)541-0843 E-Mail: dave.l.blakely@saint-gobain.com	System Volume: 605 gal Bulk Operating Temp: 525F / 274C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: FIRST THERMO	Lab No: 02160209 Analyst: Yvette Trzcinski Sample Date: 07/14/17 Received Date: 07/28/17 Completed: 07/31/17 To discuss this report contact Yvette Trzcinski at (262)933-0718

Recommendation: The sample appears to be in good condition. Re sample at next scheduled interval

Comments:

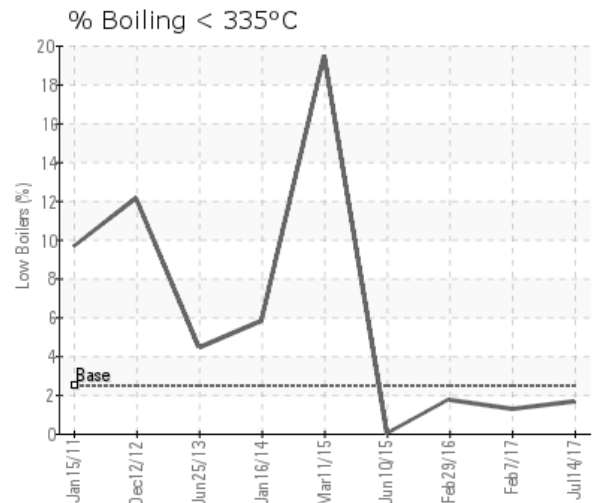
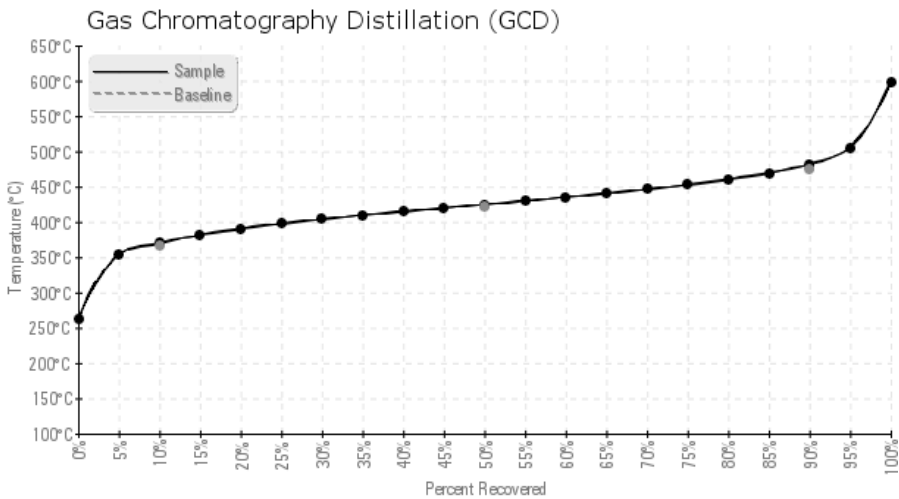
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/14/17	07/28/17	0m		385 / 196	33.2	29.4	0.051	0.027	698 / 370	796 / 425	900 / 482	1.67
02/07/17	02/15/17	12m	SIDE STREAM FLTR PRT	406 / 208	14.4	26.8	0.04	0.043	698 / 370	796 / 425	899 / 482	1.27
02/29/16	03/10/16	6m	RETURN LINE PUMP	406 / 208	9.7	30.6	0.20	0.162	695 / 369	799 / 426	903 / 484	1.77
06/10/15	07/21/15	4m	@ FILTER SAMPLE PORT	381 / 194	10.6	28.6	0.126	0.026	707 / 375	803 / 429	908 / 487	0.00
03/11/15	03/20/15	6m	DROP LEG BY PUMP	331 / 166	17.1	12.7	0.03	0.240	510 / 265	752 / 400	885 / 474	19.48
01/16/14	01/23/14	0m	DROP LEG BY PUMP	381 / 194	8.4	23.5	0.04	0.019	659 / 348	775 / 413	886 / 474	5.85
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
07/14/17	1	0	0	0	0	0	1	0	0	0	0	6	1	0	0	0	0	0	6	0	0	0	95	1
02/07/17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0
02/29/16	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	0
06/10/15	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	1	0	0	1	0	0	0	40	0
03/11/15	11	0	0	0	0	0	0	1	0	0	2	3	0	0	0	0	0	0	0	0	1	0	119	0
01/16/14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	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

02/07/17	The fluid appears to be in good condition with no apparent contamination or degradation. Re-sample at next scheduled interval.
02/29/16	Oil is in good condition, no issues at this time. Re-sample at next scheduled interval.
06/10/15	Sample appears to be in good condition, please re-sample at the next maintenance interval. (GCD) 90% Distillation Point is marginally high. COC Flash Point is marginally low.
03/11/15	This fluid is showing signs of advanced thermal degradation and thermal cracking. The severely high GCD percentage value less than 335°C, in conjunction with a severely low viscosity value @ 40°C and a flash point trending lower are all signs that this fluid has thermal cracking occurring. There doesn't appear to be a severe amount of oxidation and or sludging occurring in this system. Due to the severity of the thermal degradation in this fluid, I would recommend changing out the fluid. (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is severely low. Visc @ 40°C is severely low. COC Flash Point is abnormally low.
01/16/14	The fluid has not changed much since the last test in June 2013. It is still a mixture of Therminol 55 and Calflo AF. The flash point is now higher which is always good news. Everything looks normal. Re-sample as part of your PM in another 6 months or so. COC Flash Point is marginally low.