

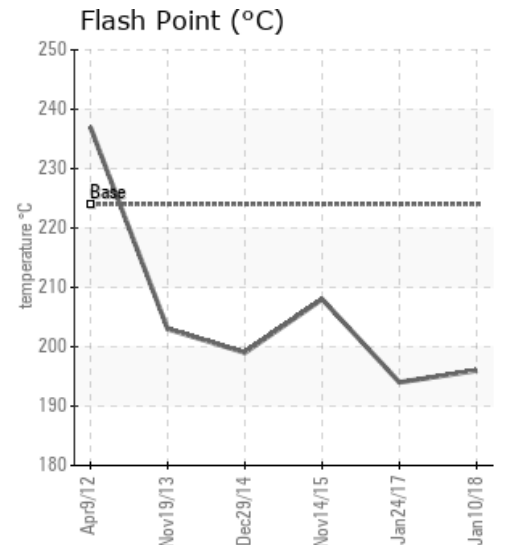
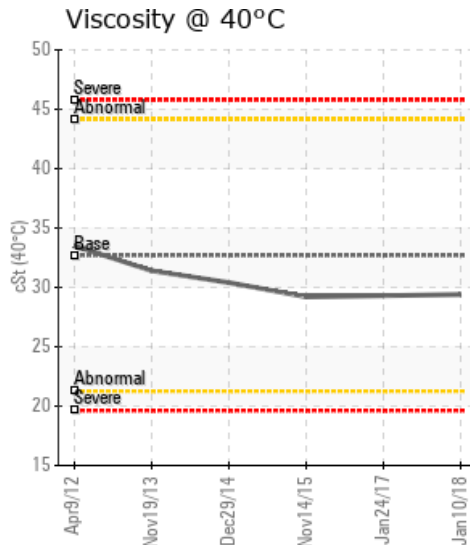
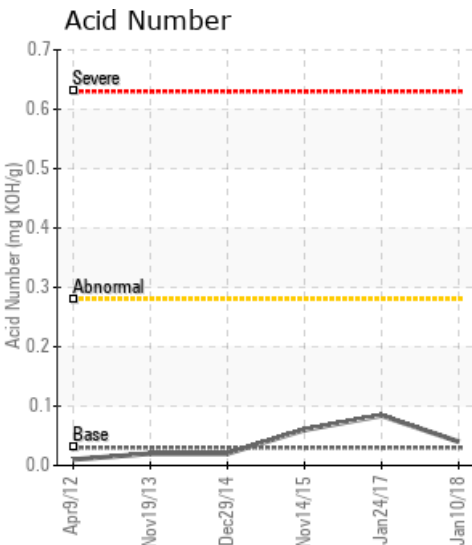
ENNIS HOT OIL SYSTEM

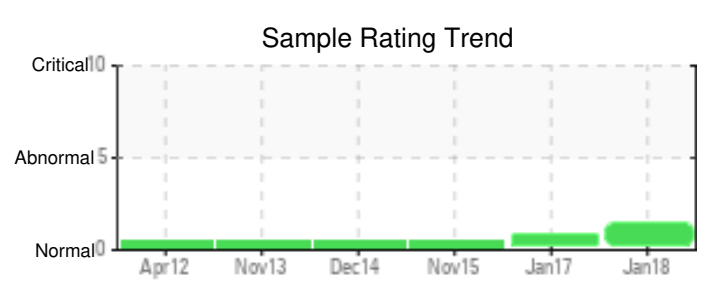
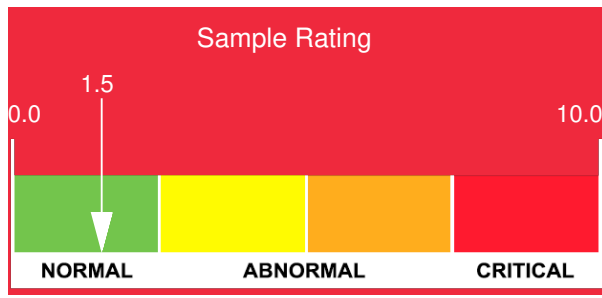
Customer: PTRHTF10112	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 2901 N KAUFMAN ST ENNIS, TX 75119 USA Attn: TUNJI CLIFF ADESANYA Tel: (812)875-4419 E-Mail: olatunji.c.adesanya@saint-gobain.com	System Volume: 2000 gal Bulk Operating Temp: 550F / 288C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02205771 Analyst: Gaston Arseneault Sample Date: 01/10/18 Received Date: 03/22/18 Completed: 04/24/18

Recommendation: The fluid condition appears normal at this time. No action needed other than re-sample at next scheduled interval.

Comments:

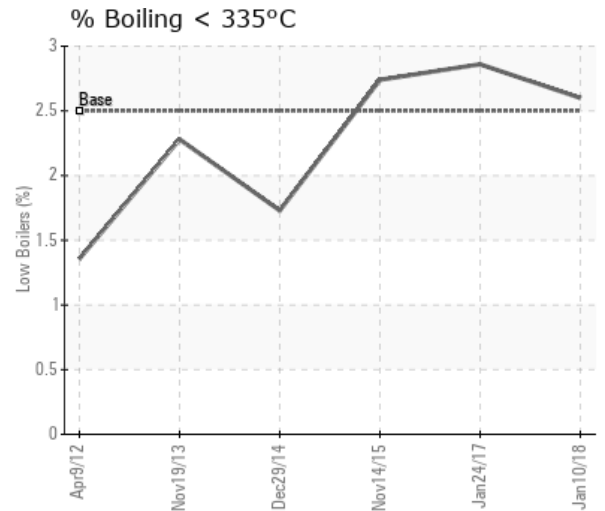
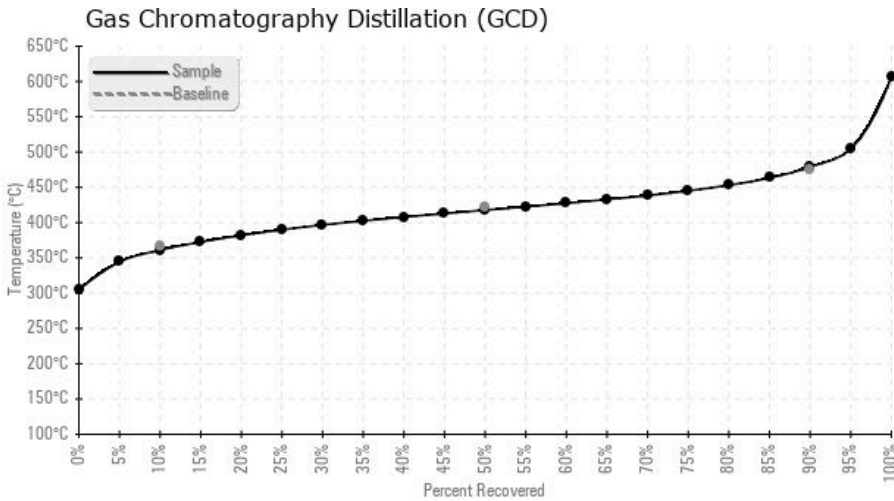
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/10/18	03/22/18	84m		385 / 196	2.8	29.4	0.04	0.093	682 / 361	784 / 418	894 / 479	2.60
01/24/17	02/13/17	66m	MAIN LOOP PUMP	381 / 194	17.8	29.3	0.084	0.085	689 / 365	796 / 424	899 / 482	2.86
11/14/15	11/30/15	55m	MAIN LOOP	406 / 208	30.9	29.2	0.06	0.256	690 / 365	795 / 424	894 / 479	2.74
12/29/14	01/09/15	44m	SAMPLE VALE OUT STRA	390 / 199	10.2	30.4	0.02	0.048	698 / 370	803 / 428	898 / 481	1.73
11/19/13	11/29/13	7m	SAMPLE VALVE	397 / 203	8.8	31.4	0.02	0.069	695 / 368	797 / 425	892 / 478	2.28
04/09/12	05/14/12	1m		459 / 237	37	33.5	0.01	0.024	706 / 375	802 / 428	902 / 483	1.357
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
01/10/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
01/24/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
11/14/15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
12/29/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
11/19/13	9	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	8	0
04/09/12	5	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	36	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	
01/24/17	The fluid is in good condition. viscosity remains normal, no apparent contamination, oxidation is minimal. We recommend to sample at the next scheduled internal.
11/14/15	Fluid is suitable for continued use.
12/29/14	No action needed at this time. Reduced viscosity, reduced flash point, and increased GCD curve are all results from addition of Calflo AF on top of Petro-Therm.
11/19/13	The flash point look slike it has dropped slightly but in fact, the previous lab had higher than expected flash point results so I would say it looks normal now. Every test shows a normal result. Only question is the fluid looks more like Petro-Therm than Calflo AF so we will reach out to you to confirm this. No action needed at this time.
04/09/12	Oil condition looks good, as expected after only 1 year. Re-sample around Dec 2012 to monitor its condition.

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