

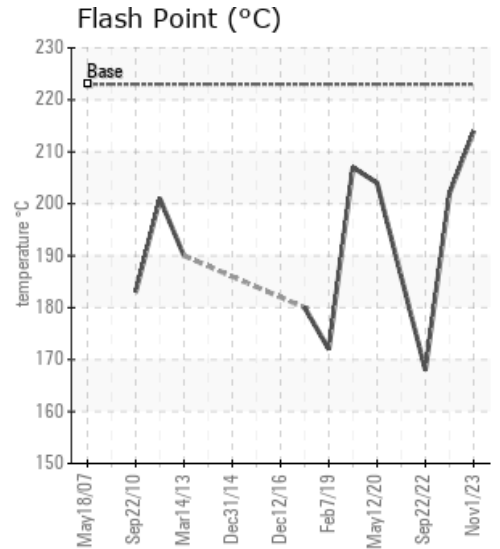
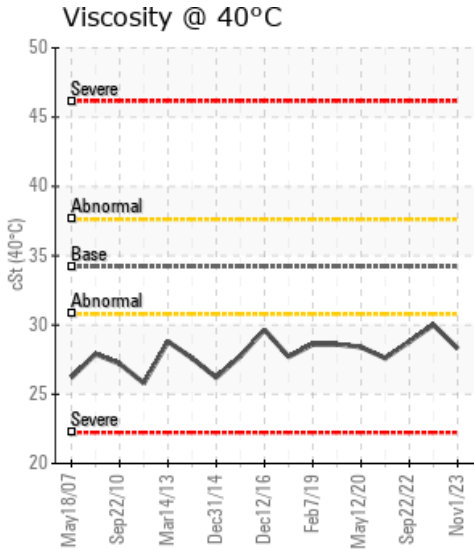
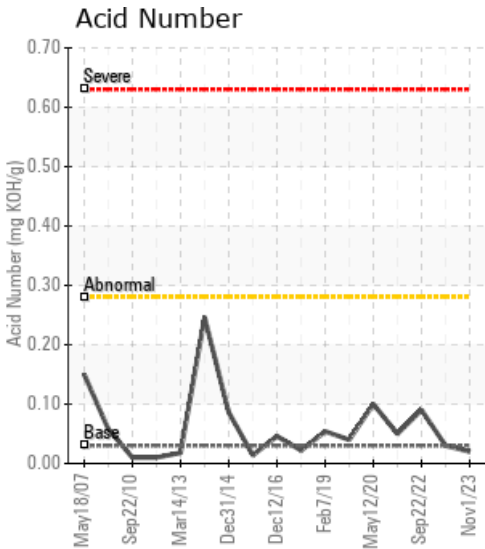
LINE 7 HOT OIL SYSTEM

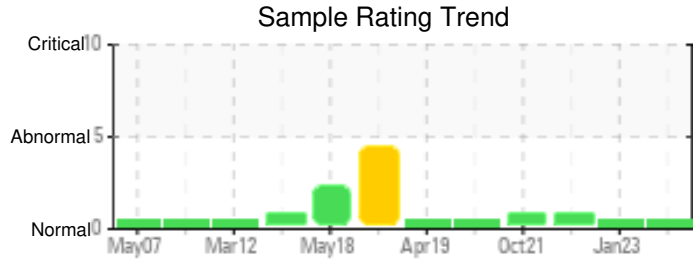
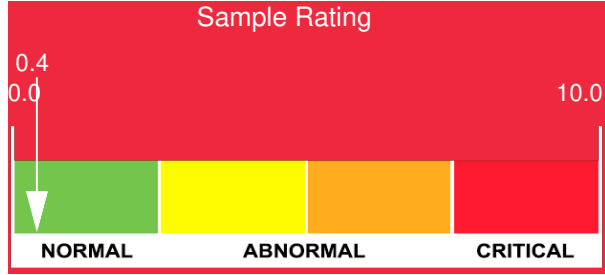
Customer: PTRHTF10094	System Information	Sample Information
CERTAINEED CORPORATION - OXFORD 200 CERTAINEED RD OXFORD, NC 27565 US Attn: Seth Newton Tel: (919)693-1141 E-Mail: Seth.newton@saint-gobain.com	System Volume: 375 gal Bulk Operating Temp: 519F / 271C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02616806 Analyst: Manny Garcia Sample Date: 11/01/23 Received Date: 02/20/24 Completed: 03/05/24 Manny Garcia manuel.garcia@HFSinclair.com

Recommendation: Fluid is suitable for continued use, please re-submit sample in Fall, 2024.

Comments: Viscosity of this fluid in on the low side of an ISO 32, but nothing alarming for this fluid in this system. Wear metals/contamination are nil. Water ppm is very acceptable at 19. Acid number has dropped to a .02 which is satisfactory. COC Flash point has increased from 202 to 214oC which is a solid range to be in. Pentane insolubles are at levels of .042 which is satisfactory. Appearance of the fluid sample is also satisfactory.

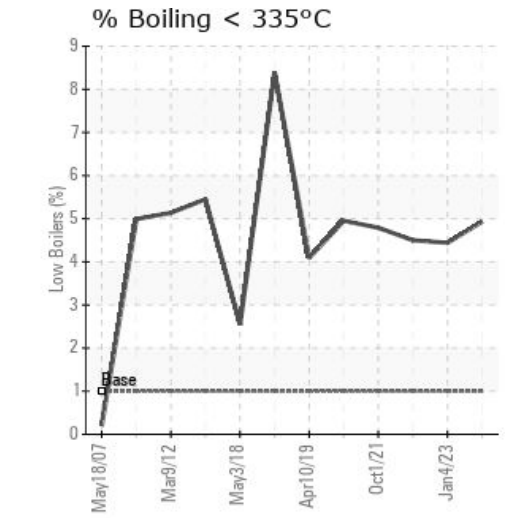
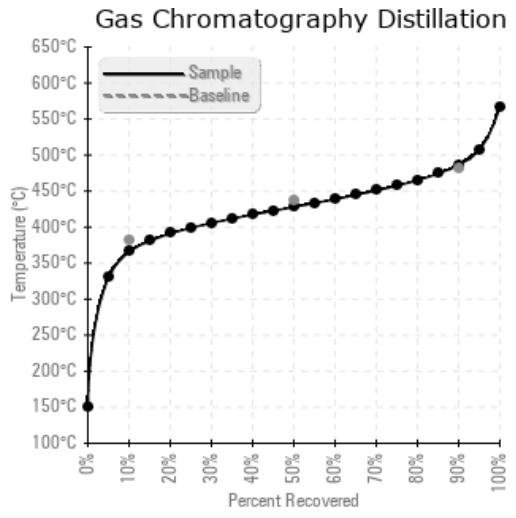
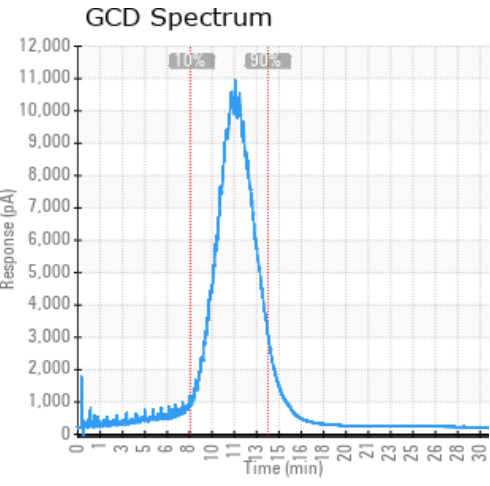
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/01/23	02/20/24	12.0m		417 / 214	19	28.3	0.02	0.042	690 / 366	802 / 428	907 / 486	4.93
01/04/23	01/13/23	0.0m		396 / 202	0.00	30.0	0.03	0.027	697 / 370	806 / 430	908 / 487	4.44
09/22/22	10/12/22	12.0m	AFTER HEATER	334 / 168	5.9	28.8	0.09	0.104	693 / 367	802 / 428	904 / 485	4.50
10/01/21	10/18/21	0.0m	by supply pump	367 / 186	23.1	27.6	0.05	0.033	689 / 365	799 / 426	902 / 483	4.79
05/12/20	07/06/20	5.0m		399 / 204	11.6	28.4	0.10	0.159	688 / 365	799 / 426	902 / 483	4.95
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
11/01/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01/04/23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09/22/22	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/01/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/12/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0				0				0		

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



Historical Comments	
01/04/23	This Fluid system is in 'satisfactory' condition & the next annual sample should be taken and submitted by January 4th, 2024. The COC Flash Point was marginally low on the last sample taken on 9/22/22 & recommendations were made to mitigate this issue by 'venting' the system. Whatever maintenance practices were completed in the 4th quarter 2022, worked well as the COC Flash Point improved to 202oC and is 'satisfactory'. The other fluid parameters are in satisfactory conditions also.
09/22/22	Recommendation to 'vent' this system to mitigate the low COC flash point value and re-submit sample to verify increase in value. This fluid has a lower than expected COC Flash Point for a 12-month old fluid. We recommend 'venting' the system to correct this 168oC flash point in order to improve it to the 200oC or better range. All of the other parameters are in above satisfactory limits.
10/01/21	Oil is suitable for continued use. Recommend next sample be submitted in October 2022. COC Flash point is down 18oC to 186 oC & should be monitored closely.
05/12/20	Virtually no change to the fluid in the last year. Viscosity is stable, flash point remains strong, no asphalt or moisture contamination. No action required based on these results.

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