

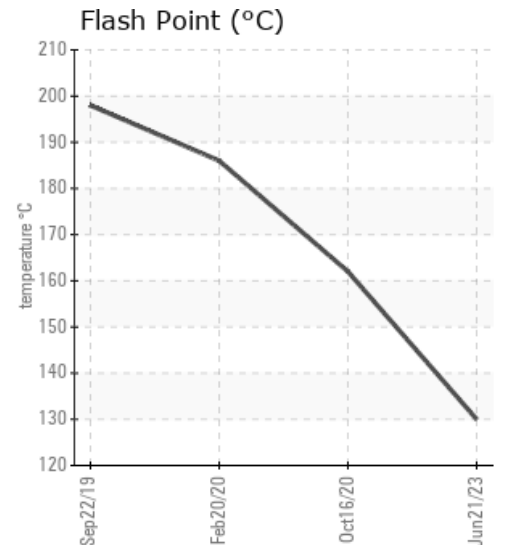
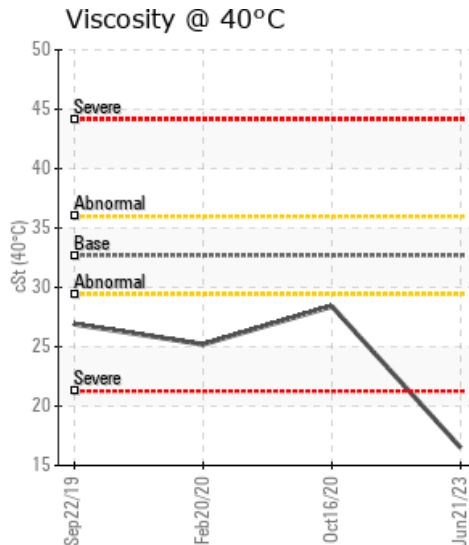
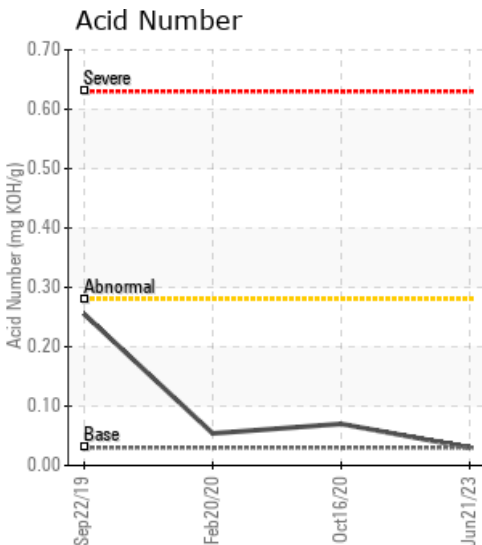
## H052

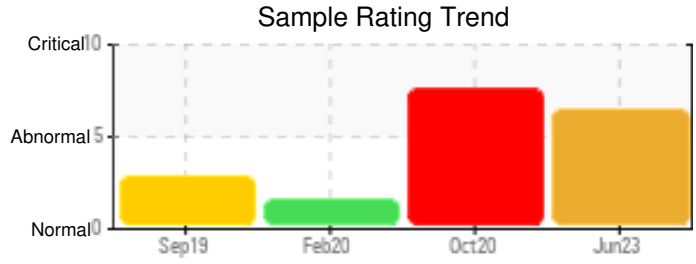
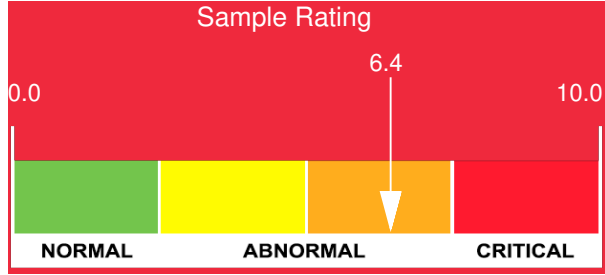
Customer: PTRHTF30146	System Information	Sample Information
<b>GREENMANTRA TECHNOLOGIES</b> 81 ELGIN STREET BRANTFORD, ON N3S 5A1 CA Attn: Amit Parekh Tel: (226)934-4142 E-Mail: amit.parekh@greenmantra.com	System Volume: 685 gal Bulk Operating Temp: 572F / 300C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: FULTON	Lab No: 02567129 Analyst: Behshad Sabah Sample Date: 06/21/23 Received Date: 06/28/23 Completed: 08/18/23 Behshad Sabah behshad.sabah@HFSinclair.com

Recommendation: The June sample shows very low KV and Flash point values. As per the customer, the 600 Gallons system was refreshed with two Drums of Calflo AF after the sample was taken (Plant Shutdown). The recommendation is to take another oil sample to reassess the situation before the next plant shutdown. The new test kit would be under code HTFFL - (no GCD required).

Comments: (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. Visc @ 40°C is severely low. (GCD) % < 335°C is abnormally high.

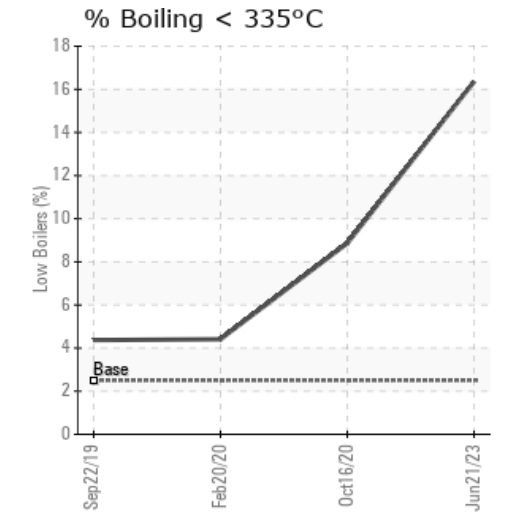
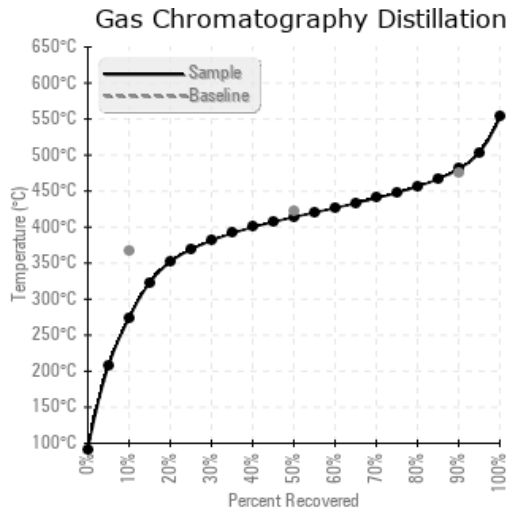
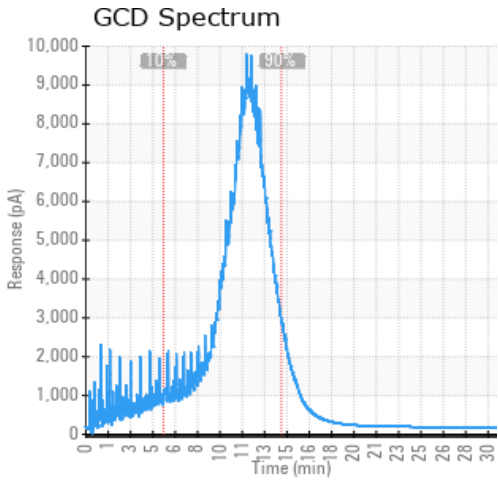
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/21/23	06/28/23	45.0m	sample port	266 / 130	28.2	16.5	0.03	0.058	524 / 273	777 / 414	897 / 481	16.36
10/16/20	10/23/20	12.0m	Sample port	324 / 162	4357.2	28.4	0.07	0.117	645 / 341	791 / 422	906 / 486	8.86
02/20/20	02/24/20	5.0m	SHAIVER	367 / 186	42.5	25.2	0.054	0.081	684 / 362	810 / 432	922 / 494	4.41
09/22/19	09/30/19	48.0m	END OF LINE	388 / 198	0.00	26.9	0.255	0.123	703 / 373	832 / 445	953 / 512	4.37
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	
06/21/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	1	
10/16/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
02/20/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	0
09/22/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	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	
10/16/20	Water contamination is severe at 4357 ppm or 0.435%. Please review sampling procedure to ensure sample was not contaminated. Previous sample had only 42 ppm water, which is typical. Flash point has decreased from previous sample, and level of light boilers, %<335°C has increased to 8.86%, along with a decrease in the initial boiling point. Venting the light boilers from the expansion tank should be undertaken if the %<335°C exceeds 10%. Resample after 3 months. Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally high.
02/20/20	Please check to see if the Calflo AF system has another heat transfer fluid added to it or if the reduction in fluid viscosity was from previous existing fluid in the system.. Viscosity at 40°C is below the normal range of an ISO 32 grade oil which Calflo AF is. Calflo AF typical viscosity is 32.3 cSt @ 40. An ISO 32 is +/- 10% = 29.2 to 35.5 cSt @ 40°C. Results indicate the viscosity of the fluid is 25.2 cSt @40°C. All other parameters except for the 90% boiling point and flash point, which is reduced, are typical. Verify there is no other fluid being added. Sample again in 6 months. (GCD) 90% Distillation Point is abnormally high. COC Flash Point is marginally low.
09/22/19	Evidence of previous Therminol 55 left in system (which is 19 cSt @ 40°C), viscosity of sample was measured at 26.9 cSt which is lower than typical Calflo AF of 32.3. Evidence of some light ends present in system with 4.37% less than 335°C, along with the Flash Point being lower at 198°C from a typical of 224°C. 90% Distillation point is above typical of 475°C, measured at 511°C, which could be due to the previous Therminol 55 in the system.Recommend another sample be taken in 3 months. Fluid is suitable for continued use. (GCD) 90% Distillation Point is severely high. (GCD) 50% Distillation Point is marginally high.

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