

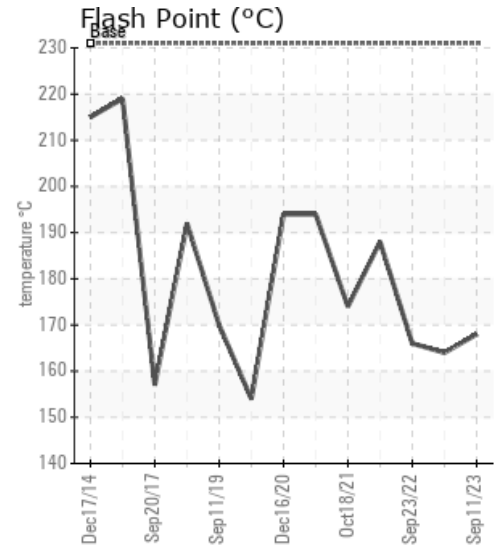
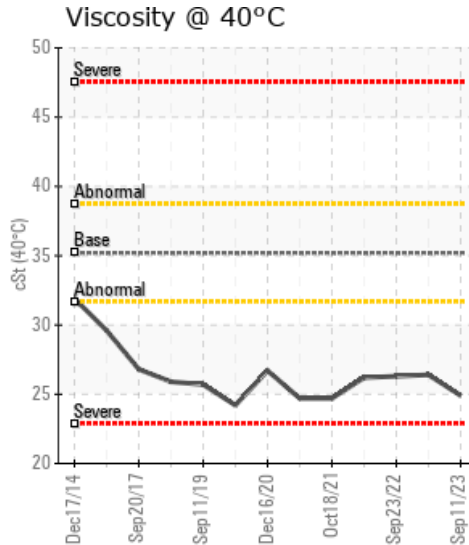
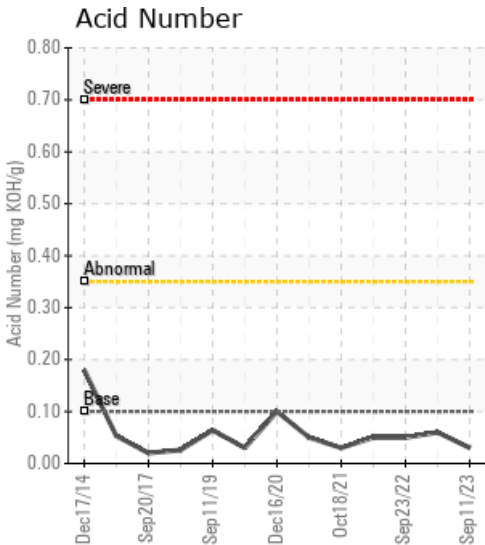
## HOT OIL

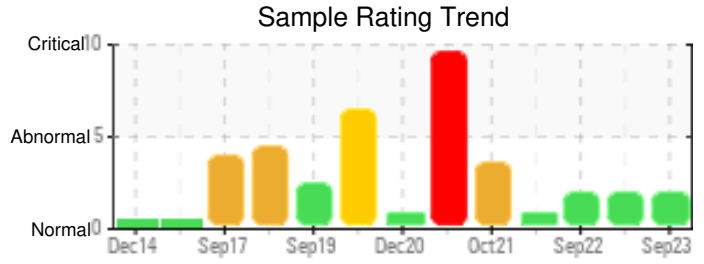
Customer: PTRHTF10002	System Information	Sample Information
<b>EVONIK</b> 3305 26th ST LOS ANGELES, CA US Attn: Prakash Mehta Tel: (818)709-0492 E-Mail: purelubricants@earthlink.net	System Volume: 1500 gal Bulk Operating Temp: 600F / 316C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make:	Lab No: 02584243 Analyst: Carlos Nazario Sample Date: 09/11/23 Received Date: 09/20/23 Completed: 09/27/23 Carlos Nazario Carlos.Nazario@hfsinclair.com

Recommendation: Kinematic viscosity and Flash point low; may indicate a thermal degradation of the heat transfer fluid. Check the gas blanket pressure, if it is high, try to vent the expansion tank till the pressure is to predetermined set. Sweet the system at 25% and resample in 3 month for follow up.

Comments: COC Flash Point is severely low. Visc @ 40°C is abnormally low.

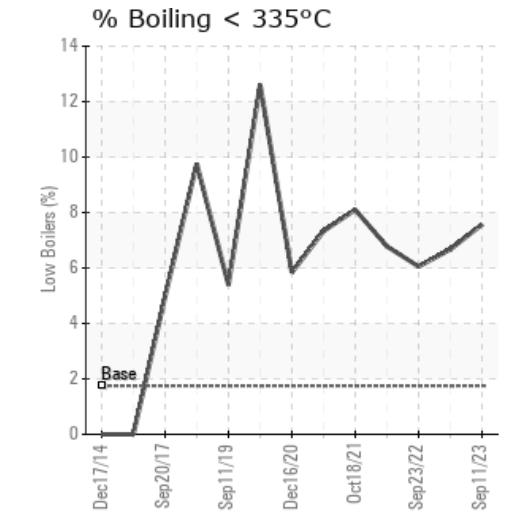
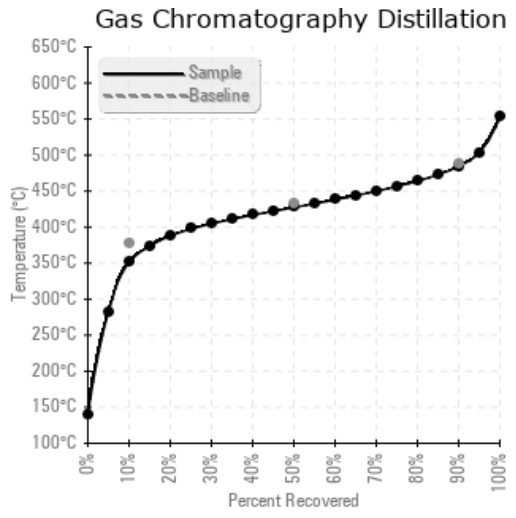
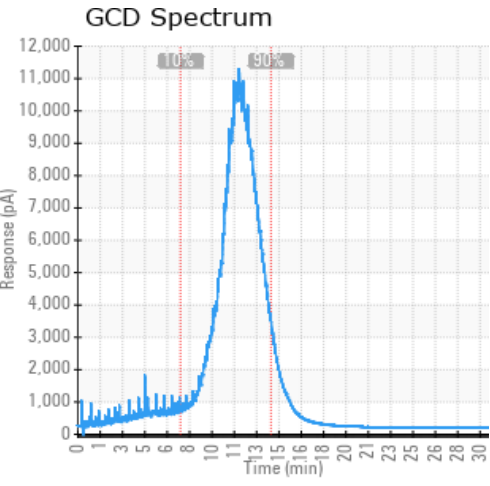
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/11/23	09/20/23	0.0y		334 / 168	17.8	24.9	0.03	0.054	665 / 351	801 / 427	904 / 484	7.57
02/06/23	02/23/23	1.0y	bottom coil	327 / 164	2.7	26.4	0.06	0.040	675 / 357	804 / 429	907 / 486	6.67
09/23/22	10/11/22	1.0y		331 / 166	13.3	26.3	0.05	0.318	683 / 362	804 / 429	906 / 486	6.05
02/03/22	02/03/22	0.0y		370 / 188	102.0	26.2	0.05	0.060	674 / 357	804 / 429	908 / 487	6.78
10/18/21	10/28/21	0.0y		345 / 174	16.5	24.7	0.03	0.163	658 / 348	800 / 427	909 / 487	8.10
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75





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
09/11/23	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	1
02/06/23	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0
09/23/22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0
02/03/22	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0
10/18/21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
<b>Baseline Data</b>			0	0						0			0	0				0	0				280	

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



Historical Comments	
02/06/23	COC Flash Point is severely low. Visc @ 40°C is abnormally low.
09/23/22	The Flash Point is very low and the viscosity is low. It indicates lighter fractions being boiled off. I would suggest a resample and make sure plenty of oil is purged out before taking sample. COC Flash Point is severely low. Visc @ 40°C is abnormally low.
02/03/22	Sample appears normal except for COC Flash Point is marginally low. Add a small amount of new oil to raise flash point. COC Flash Point is marginally low.
10/18/21	The oil typicals have returned to somewhat normal compared to the previous sample. Pentane insolubles indicate some contamination. Water content dropped significantly. Adding a small amount of new oil could improve the typicals significantly. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.

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