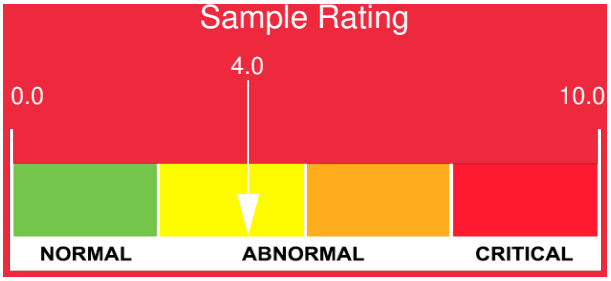
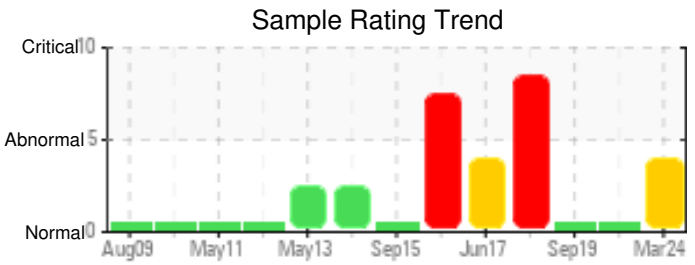




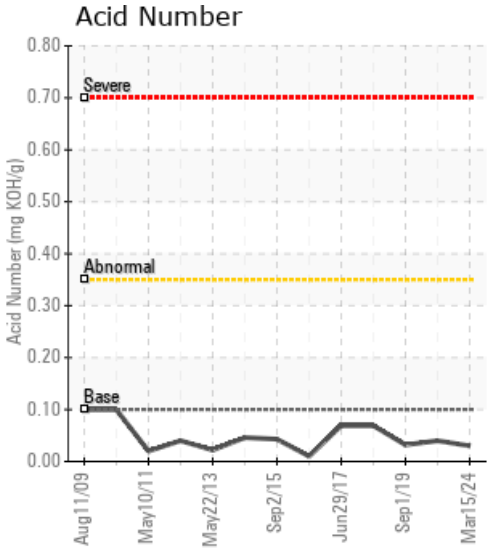
UNIT A

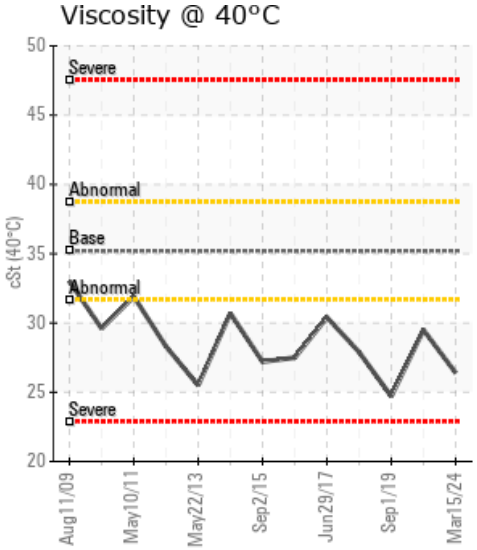
Customer: PTRHTF30035	System Information	Sample Information
VEOLIA WATER 9 LESLIE STREET TORONTO, ON M4M 3M9 CA Attn: MICHAEL VULJICIC Tel: (416)996-2340 E-Mail: michael.vujicic@veolia.COM	System Volume: 6000 ltr Bulk Operating Temp: 280F / 138C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make:	Lab No: 02623559 Analyst: Behshad Sabah Sample Date: 03/15/24 Received Date: 03/20/24 Completed: 03/25/24 Behshad Sabah behshad.sabah@HFSinclair.com

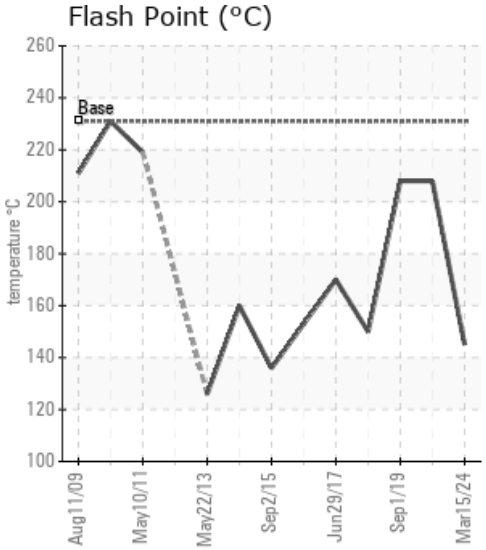
Recommendation: the test results show an abnormal spike on the sulfur ppm of the oil which can be a product contamination by added wrong oil. the wrong oil - may be gear oil- has been cracked and dropped the overall mix viscosity and a significant drop on the flash point. you cannot filter the wrong oil out, but you need to ' sweeten' the system. drain 10% to 20% of the volume and top up with fresh Claflo HTF before it gets too late. the wrong oil oxidation will increase the pentane insoluble percentage to the point that you need to drain, clean, and flush the system. at this moment no chemical corrosion is detected in the system. there is low risk of pinholes and leak.

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

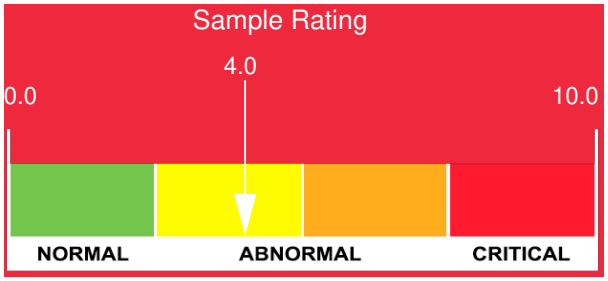
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/15/24	03/20/24	0.0y		293 / 145	29	26.4	0.03	0.305	664 / 351	806 / 430	920 / 493	7.84
02/25/21	03/08/21	2.0y		406 / 208	13.1	29.5	0.04	0.071	704 / 374	811 / 433	913 / 489	4.22
09/01/19	11/06/19	0.0y		406 / 208	14.6	24.7	0.032	0.138	683 / 362	795 / 424	899 / 482	5.10
11/19/18	11/20/18	0.0y		302 / 150	31.8	27.9	0.069	0.008	618 / 326	736 / 391	833 / 445	12.59
06/29/17	07/12/17	0.0y		338 / 170	33.3	30.4	0.069	0.042	685 / 363	799 / 426	895 / 479	4.94
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75

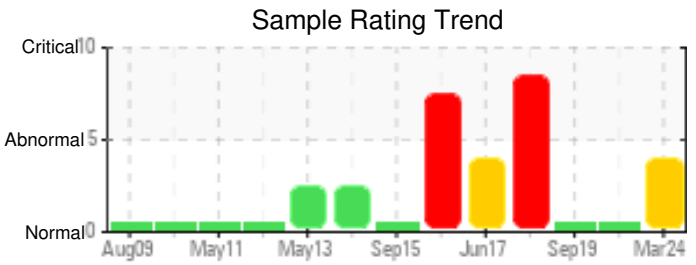






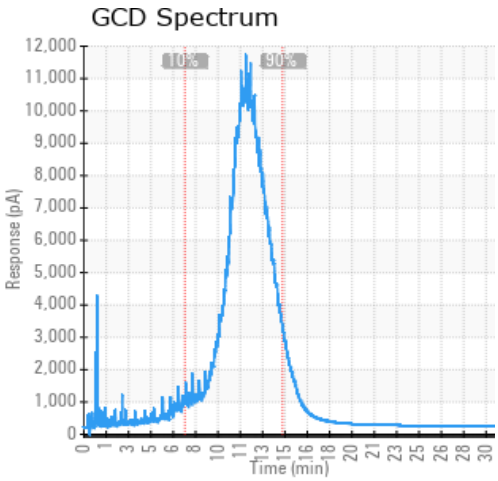
PETRO-CANADA LUBRICANTS

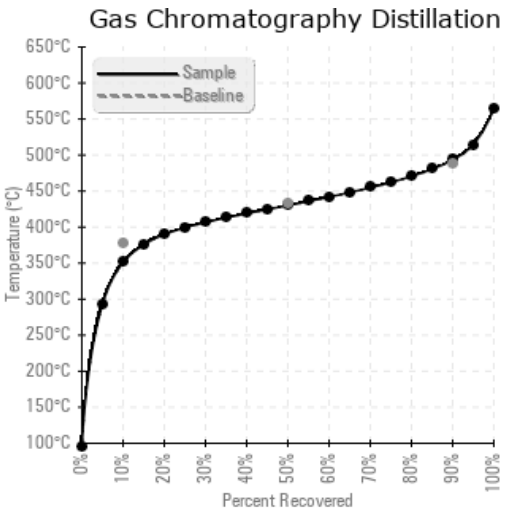


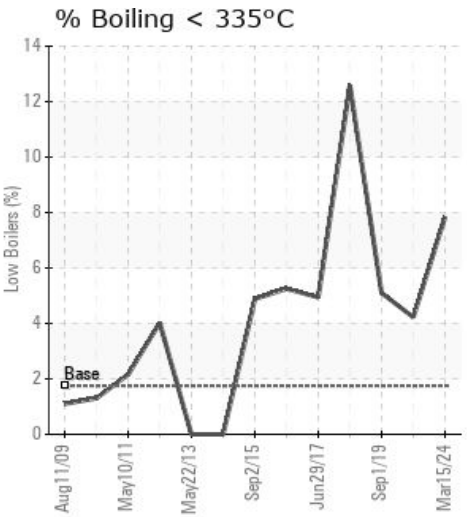


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/15/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
02/25/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0
09/01/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0
11/19/18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	0
06/29/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0
Baseline Data			0	0						0			0	0				0	0				280	

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







Historical Comments

02/25/21	the oil looks healthy with no signs of issues.
09/01/19	the oil looks ok but the reduction in viscosity might be a result of product contamination. have you added any products to this system? TAN, flash point and GCD are in correct condition.
11/19/18	The oil is about 10 years old based on 2017 report. The low flash point indicates the degradation of the fluid and braking down the hydrocarbon chains to smaller ones. Your operating temperature is 280 F or 138 C. the open cup flash point is 150 C. These numbers getting very close. It will be a fire hazard if there is a leak into the open air. Acid number is very low which indicates there is not corrosion happening in the system. Have you added fresh oil to the system during 2018? It seems that you did add some oil in Q2 2017 but nothing during the 2018. (GCD) 10% Distillation Point is severely low. (GCD) 90% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is abnormally high. (GCD) 50% Distillation Point is abnormally low.
06/29/17	Sample as provided indicates that the fluid is not oxidized and the viscosity is within a normal range, however is slightly lower than original Calflo HTF (35.2 cSt). The reduction in viscosity may be due to the presence of low boiling components as indicated by a reduced flash point of 170°C (typical flash point is 231°C) and a higher percentage of material detected by GCD <335°C @ 4.94%. Remainder of the distillation profile is consistent with Calflo HTF.Recommended course of action is to vent the expansion tank to release and remove the low boilers helping to increase the flash point, reduce the <335°C materials and help increase the viscosity. Venting of the expansion tank should only be carried out using the proper established procedures for your system design. Sample should be collected after venting of the expansion tank, and sent in for analysis to determine the effectiveness. COC Flash Point is severely low.