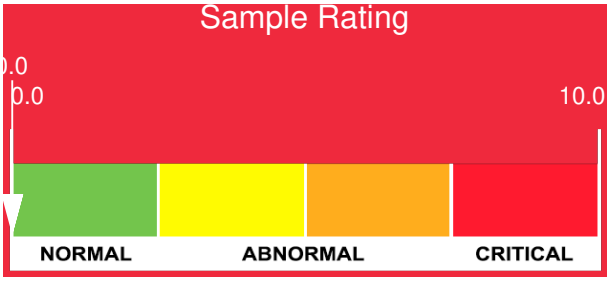
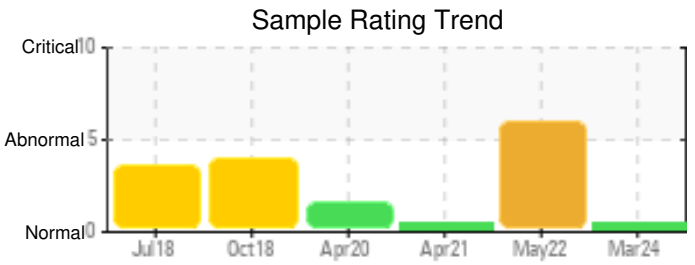




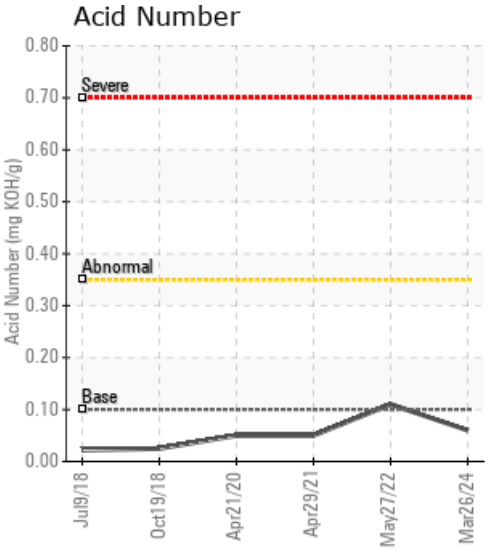
[LSD 5-27-79-17W6] Q-810 Process Heat Medium

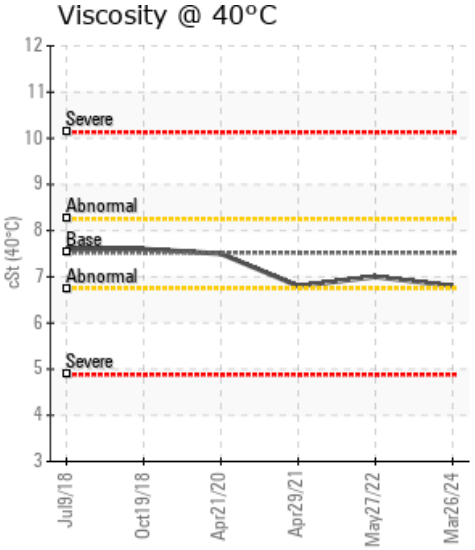
Customer: PTRHTF60074	System Information	Sample Information
Ovintiv 05-27-79-017-W6M 300 Hwy 2 #1 Dawson Creek, BC V1G 0A4 CA Attn: Payton Lee Tel: (250)826-7496 E-Mail: payton.lee@ovintiv.com	System Volume: 50000 ltr Bulk Operating Temp: 365F / 185C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO LT Make: PETROTECH	Lab No: 02626255 Analyst: Clinton Buhler Sample Date: 03/26/24 Received Date: 04/02/24 Completed: 04/10/24 Clinton Buhler Clinton.Buhler@HFSinclair.com

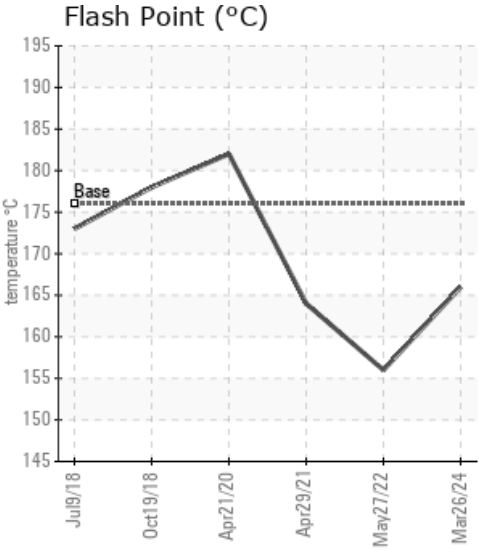
Recommendation: Sample results indicate that the fluid is in suitable condition for continued service.Please re-sample in 12 months.

Comments:

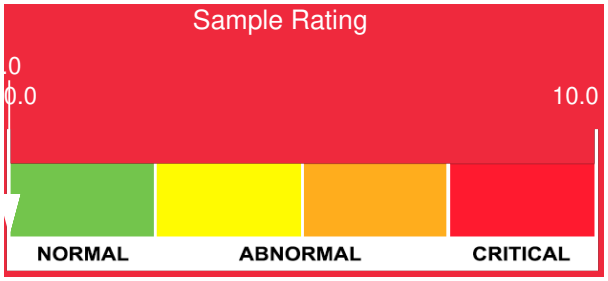
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/26/24	04/02/24	72.0m		331 / 166	10	6.8	0.06	0.031	605 / 318	635 / 335	731 / 388	49.09
05/27/22	06/06/22	0.0m		313 / 156	21.7	7	0.11	0.126	575 / 302	608 / 320	694 / 368	64.57
04/29/21	05/03/21	36.0m		327 / 164	18.2	6.8	0.05	0.036	604 / 318	635 / 335	729 / 387	49.88
04/21/20	06/01/20	22.0m	TOP OF FILTER	360 / 182	4.8	7.5	0.05	0.041	608 / 320	636 / 336	715 / 380	47.30
10/19/18	10/29/18	4.0m		352 / 178	58.7	7.6	0.025	0.042	604 / 318	634 / 334	725 / 385	51.45
Baseline Data				349 / 176		7.52	0.1		604 / 318	640 / 338	734 / 390	47.0

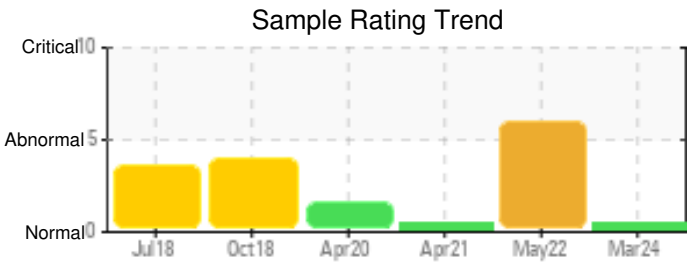






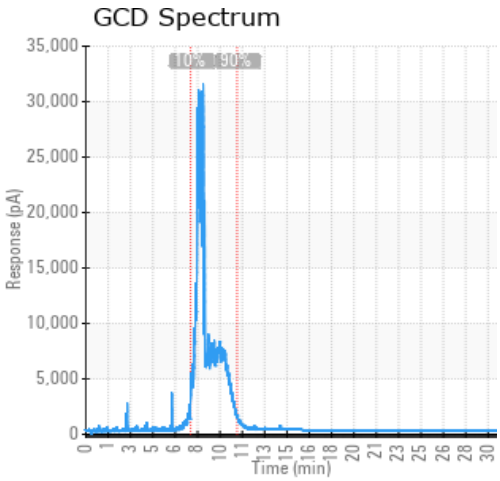
PETRO-CANADA LUBRICANTS

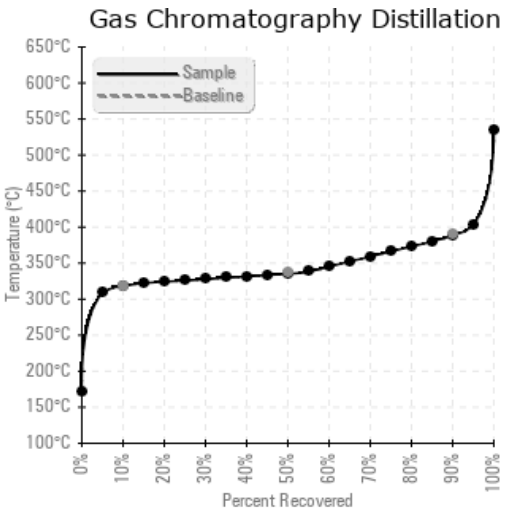


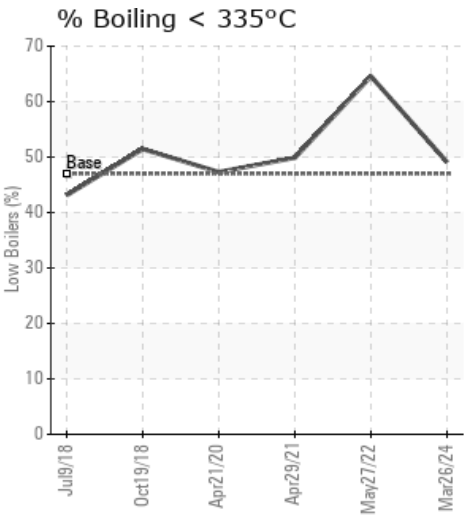


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/26/24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0
05/27/22	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	26	0
04/29/21	15	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	154	0
04/21/20	17	0	0	0	0	0	0	0	0	0	10	0	2	0	0	0	1	0	0	0	0	0	249	0
10/19/18	14	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	1	0	0	0	1	0	247	0
Baseline Data			0	0						0			0	0				0	0				270	

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







Historical Comments

05/27/22	Sample results indicate that the fluid is in suitable condition for continued service. Low boiling vapor content has increased to 64.57% from 49.88%; note also the reduced 10% and 90% distillation point and flash point. This may be associated with the ~220 kpa blanket gas pressure. Regular venting of the expansion tank should be performed to reduce low boiling vapors to help restore these properties. Please note that Petro-Canada Lubricants R&D have updated the operating parameters for Calflo LT: Auto-ignition temperature 235°C, Max bulk fluid temperature 225°C and Max skin film temperature 230°C. Please ensure the system operates below these parameters. Please re-sample in 12 months (GCD) % < 335°C is severely high. (GCD) 90% Distillation Point is severely low.
04/29/21	Sample results indicate that the fluid is in suitable condition for continued service. Slightly reduced fluid viscosity, flash point and slightly increased low boiling vapor content of 49.88% are likely associated to the blanket gas pressure setting of ~220 kpa. Venting the expansion of tank of these low boiling vapors would be beneficial in bringing these parameters back inline but this likely would need to occur during a system outage so that the blanket gas could be turned off during venting. Overall the fluid is in strong condition.Please re-sample in 12 months
04/21/20	Sample results indicate that the heat transfer fluid is in excellent condition and suitable for continued service. (GCD) 90% Distillation Point is marginally low but this is not a concern as all other parameters indicate a very healthy fluid. Please re-sample in 12 months.
10/19/18	Sample results indicate that there are excess low boiling vapors as evidenced by the increased percentage boil-off (51.45% vs 43.11% last sample). All other parameters show that the heat transfer fluid is suitable for continued service. Recommendation is to thoroughly vent off low boiling vapors from expansion tank. During venting, blanket gas needs to be turned off to allow vapors to escape. If blanket gas is required for pump suction head, further investigation into venting is needed.From the fluid`s perspective, 2-3 psi blanket gas pressure is ideal, but pump suction head requirements may dictate otherwise. re-sample in 6 months after thorough venting regime. (GCD) % < 335°C is severely high.