

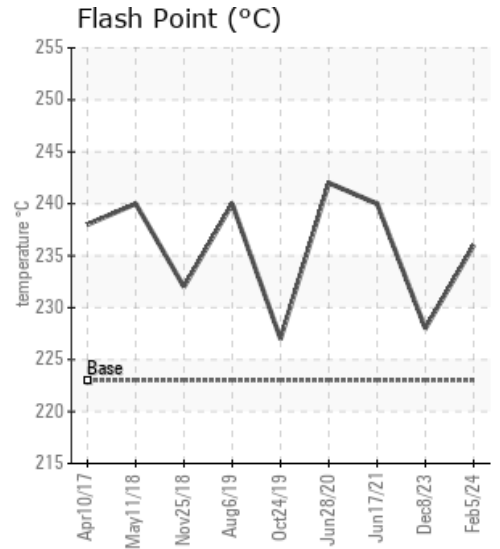
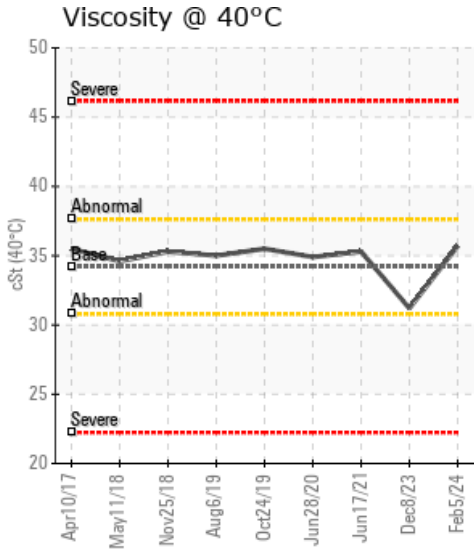
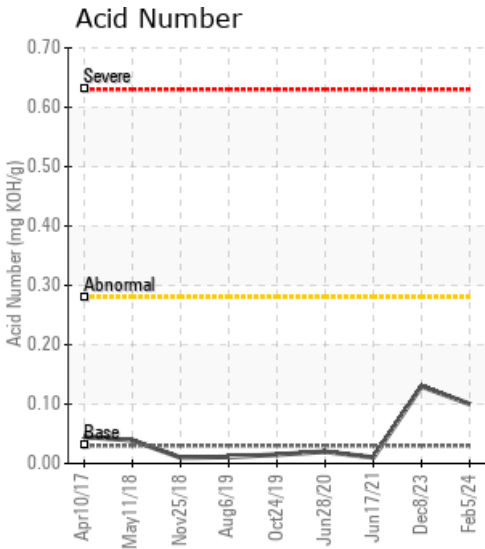
[Orlen Upstream Canada / 16-7-63-5w6] 5510/5610 HEAT MEDIUM

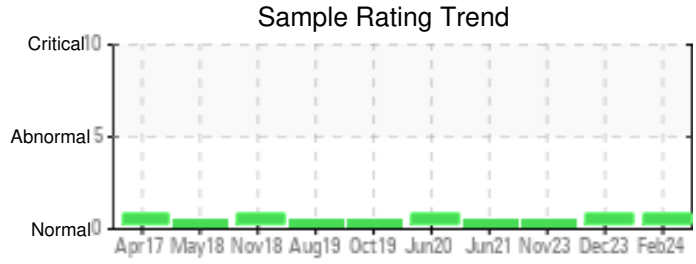
Customer: PTRHTF20262	System Information	Sample Information
Orlen upstream Canada Ltd. 850 2 St. SW Calgary, AB T2P 0R8 CA Attn: Colin Pashley Tel: E-Mail: Colin.Pashley@orlenupstream.ca	System Volume: 10000 ltr Bulk Operating Temp: 374F / 190C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: RUSHTON	Lab No: 02616106 Analyst: Clinton Buhler Sample Date: 02/05/24 Received Date: 02/15/24 Completed: 02/27/24 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:

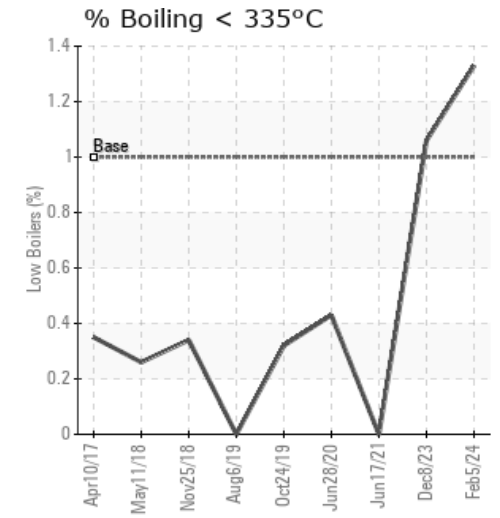
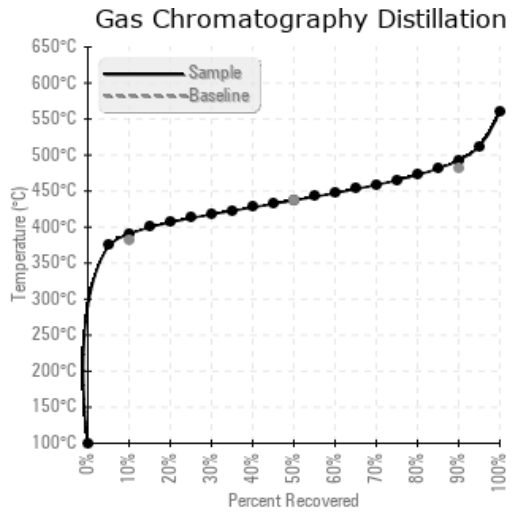
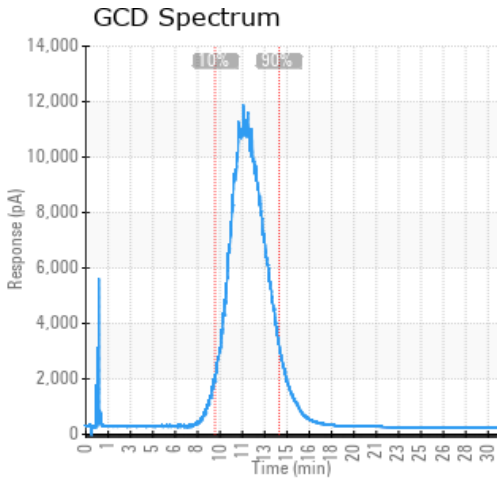
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/05/24	02/15/24	0.0m	off the pump	457 / 236	7	35.7	0.10	0.043	734 / 390	819 / 437	919 / 493	1.33
12/08/23	12/22/23	0.0m		442 / 228	13	31.2	0.13	0.053	732 / 389	818 / 437	920 / 493	1.06
11/10/23	12/01/23	0.0m										
06/17/21	06/28/21	48.0m		464 / 240	3.6	35.3	0.01	0.144	729 / 387	803 / 428	924 / 496	0.00
06/28/20	07/13/20	24.0m		468 / 242	36.0	34.9	0.02	0.042	739 / 393	821 / 438	921 / 494	0.43
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	
02/05/24	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12/08/23	7	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/10/23																									
06/17/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/28/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	
12/08/23	Sample results indicate that the fluid is in suitable condition for continued service. Please re-sample in 12 months.
11/10/23	*** sample was 100% water in the metal can. No thermal fluid ***Please re-sample immediately but ensure that the sample is taken from a representative point; pump discharge is ideal. Please thoroughly purge out sample point until hot heating fluid is coming out before taking the sample. Investigate the source of water contamination. Water contamination levels are severe.
06/17/21	Sample results indicate that the fluid is in suitable condition for continued service. Please re-sample in 12 months. (GCD) 90% Distillation Point is marginally high.
06/28/20	The fluid is in a good condition and suitable for further use. 10% and 90% GCD temperatures are slightly high. This is no concern at this time. Please re-sample in 12 months. (GCD) 90% Distillation Point is marginally high.

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