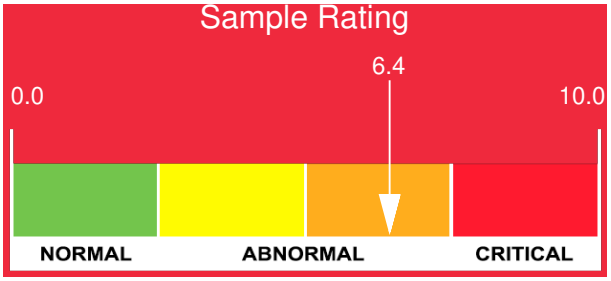
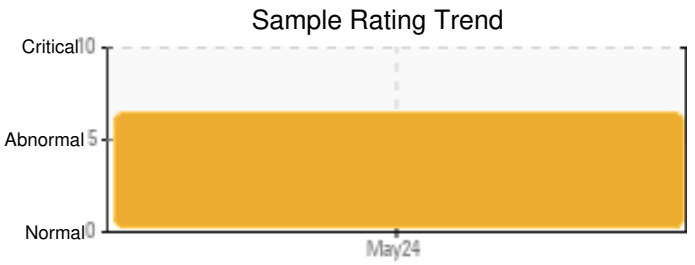




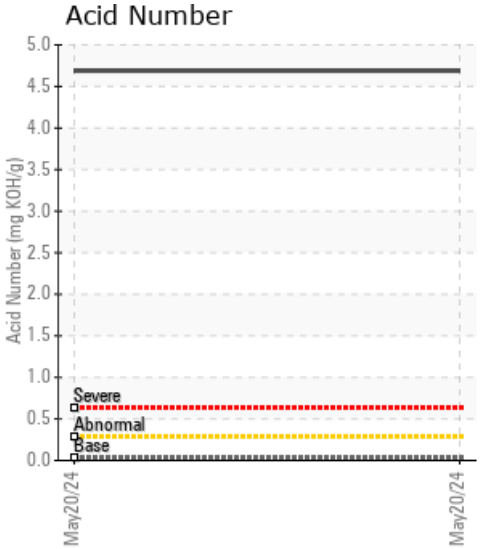
[CONSTRUCTORA HERRERA SA] CONSTRUCTORA HERRERA

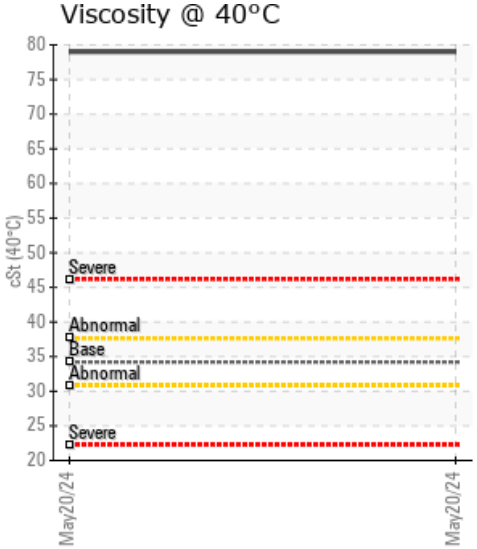
Customer: PTRHTF60023	System Information	Sample Information
INDUSTRIAS del PETROLEO CANAD. SA Contiguo FANAL frente a la Autopista Bernardo Soto Grecia, A CR Attn: María Fernanda Matamoros Rodríguez	System Volume: 1230 ltr Bulk Operating Temp: 464F / 240C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: ARAUTERM	Lab No: 02638721 Analyst: Peter Harteveld Sample Date: 05/20/24 Received Date: 05/29/24 Completed: 06/07/24 Peter Harteveld peter.harteveld@HFSinclair.com

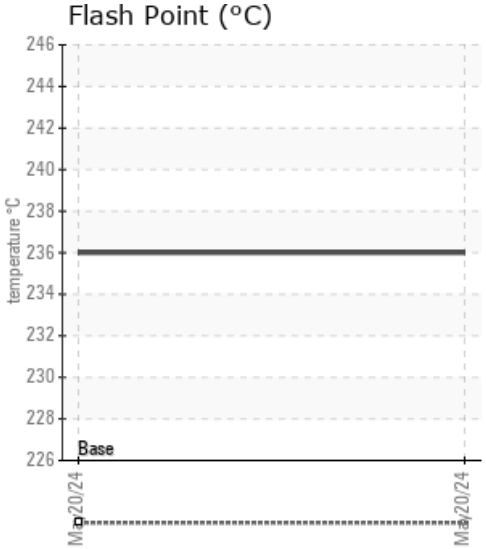
Recommendation: The fluid is not suitable for use and has to be replaced after cleaning of the system. High AN, viscosity, Pentane Insoluble (solids) content and 90% GCD temperature all indicate the fluid experiences a high rate of oxidation considering the fluid has only been in service for 8 months. The one parameter which doesn't correlate with AN specifically is Fe content. With AN at 4.69 the oil is acidic and corrosive. This should have resulted in a much higher Fe number and raises the question where the sample has been taken from. Never take samples from drain lines, filter housing or from the expansion tank. Best sample point is discharge side of the heat medium pump with the pump running. Please check proper operation of blanket gas system.

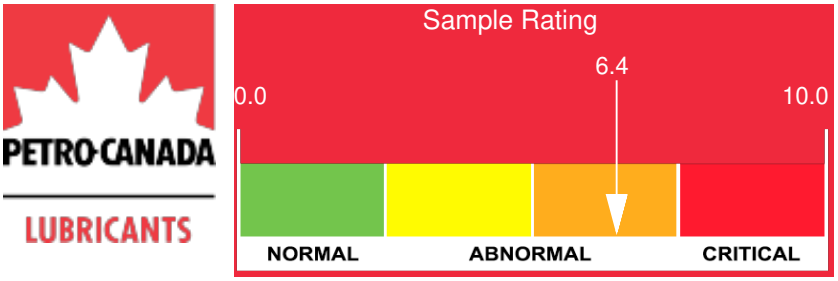
Comments: Pentane Insolubles levels are severely high. Acid Number (AN) is severely high. Visc @ 40°C is severely high. (GCD) 90% Distillation Point is marginally high.

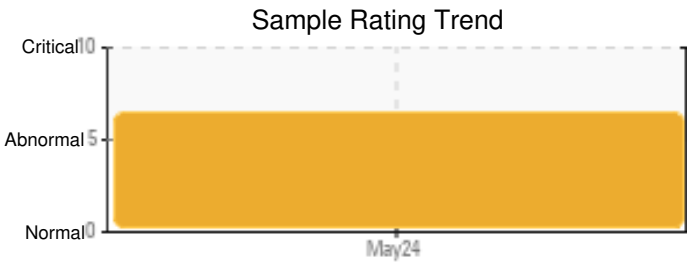
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/20/24	05/29/24	8.0m	MAIN DRAIN VALVE	457 / 236	301	79.0	4.69	11.9	727 / 386	818 / 437	925 / 496	2.43
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





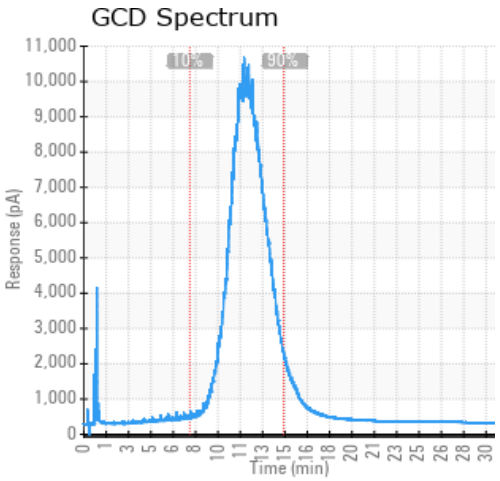


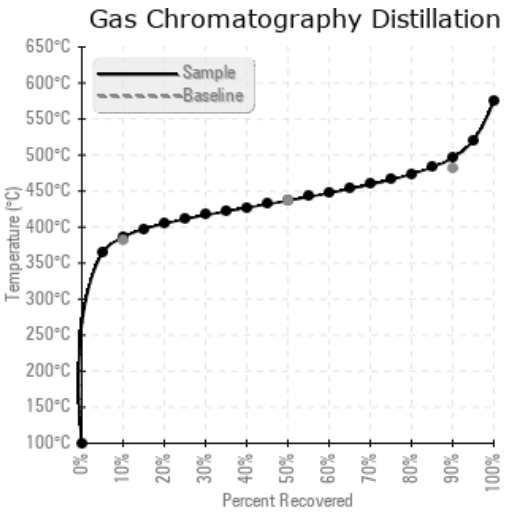


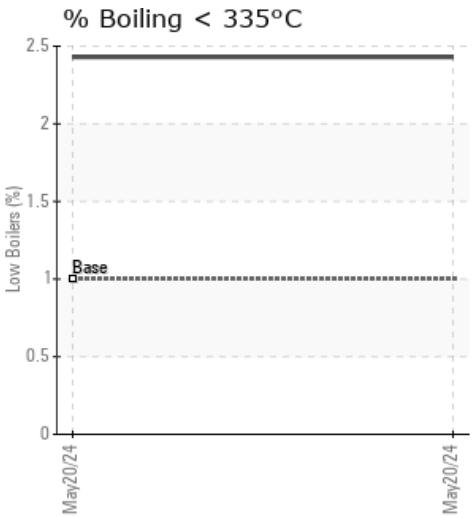


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
05/20/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Baseline Data			0	0						0			0	0					0				0	

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







Historical Comments
