

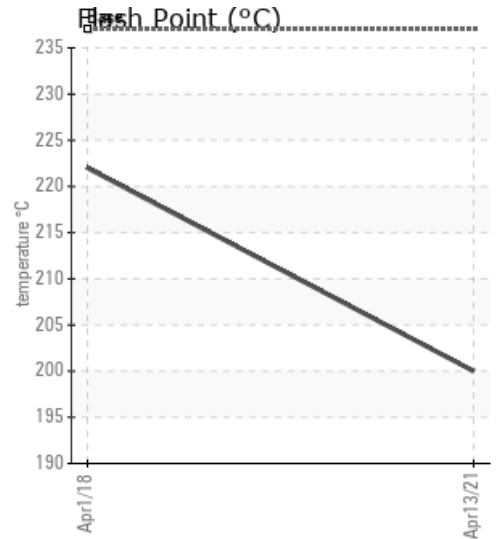
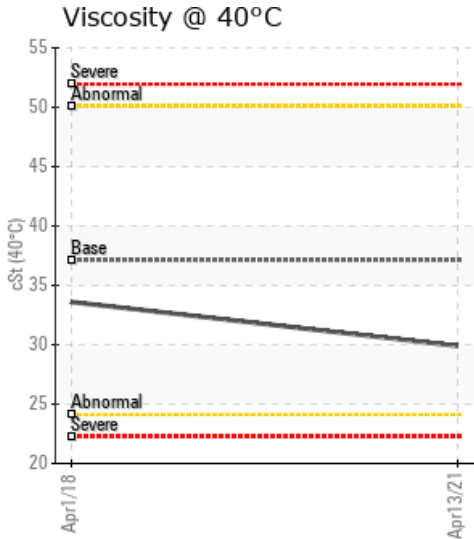
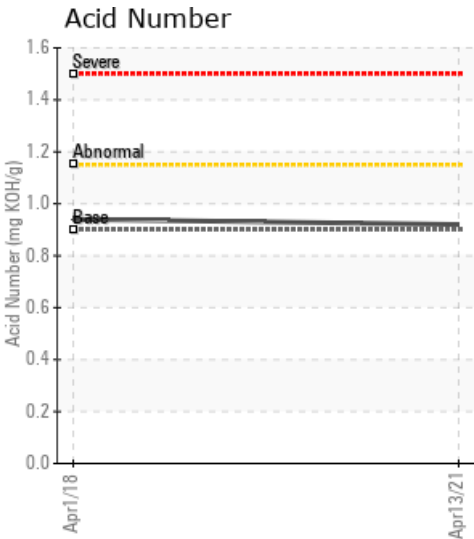
HEATER SYSTEM - TAP

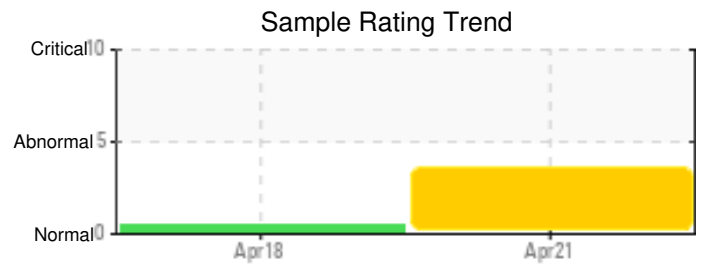
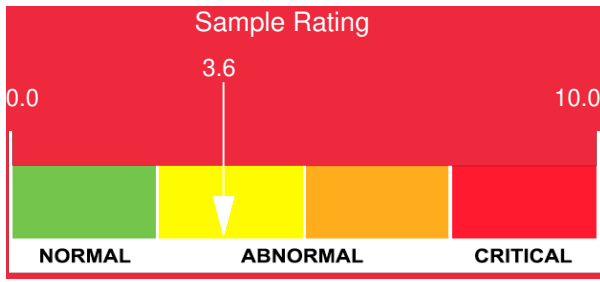
Customer: PTRHTF60022	System Information	Sample Information
TECNILUB LTD ALCALDE PEDRO ALARCON 726 SAN MIGUEL SANTIAGO, 8900110 Chile Attn: Andres Hermosilla Tel: 1(562)273-1300 E-Mail: andres@TECNILUB.CL	System Volume: 6700 ltr Bulk Operating Temp: 608F / 320C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: MAXTEC	Lab No: 02419202 Analyst: Peter Harteveld Sample Date: 04/13/21 Received Date: 05/05/21 Completed: 05/13/21 Peter Harteveld peter.harteveld@hollyfrontier.com

Recommendation: The fluid is in a good condition and suitable for further use. The combination of slightly low viscosity, Flash Point and 10% GCD temperature indicates thermal degradation of the fluid. the elevated low boiler vapor content (GCD% <335C.) of 7.57 confirms this. At an operating temperature of 320 degrees C this is normal and not alarming but this condition needs to be rectified by venting off the low boiler vapor to atmosphere. Please re-sample in 12 months.

Comments: (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low. COC Flash Point is marginally low.

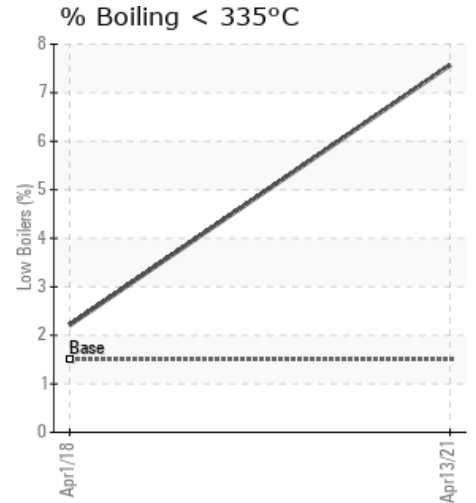
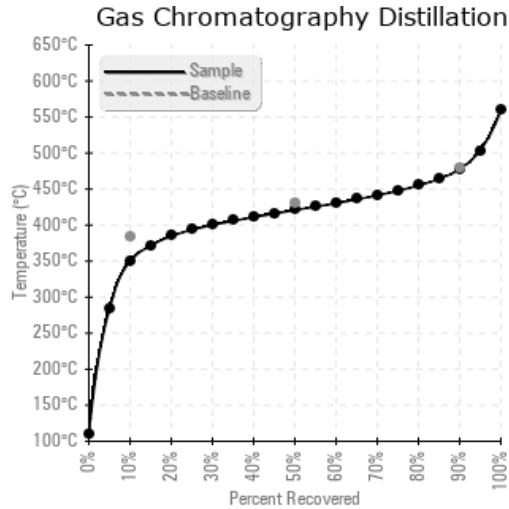
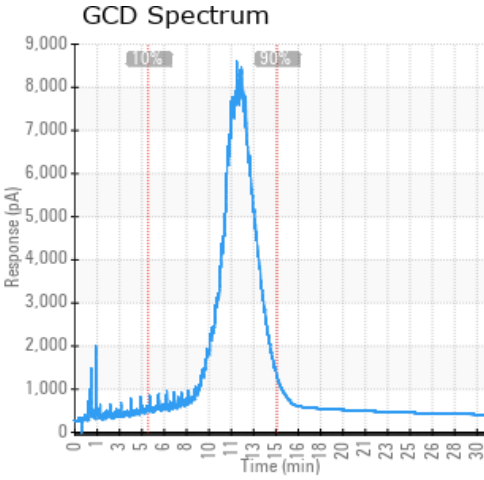
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/13/21	05/05/21	17745.0h	Upper disch valve tp	392 / 200	71.4	29.9	0.92	0.193	663 / 350	789 / 421	892 / 478	7.57
04/01/18	08/07/20	600.0h	TAP SAMPLE	432 / 222	17.0	33.6	0.94	0.137	716 / 380	810 / 432	908 / 486	2.21
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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
04/13/21	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0
04/01/18	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	114	6
Baseline Data			0	0						0			0	0				0	0				230	

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



Historical Comments

04/01/18	The fluid is in a good condition and suitable for further use. This sample was taken in April of 2018 and sent to the lab in August of 2020. It is advised to take another sample to evaluate the current condition of the fluid (after two years of service).