

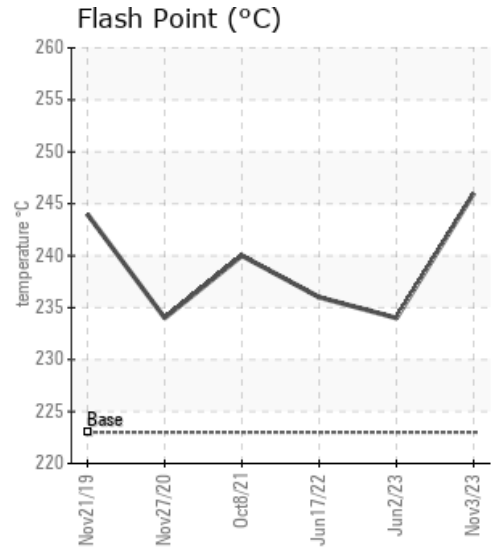
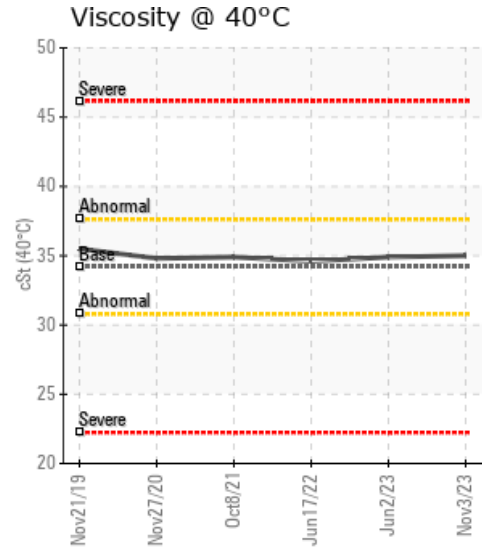
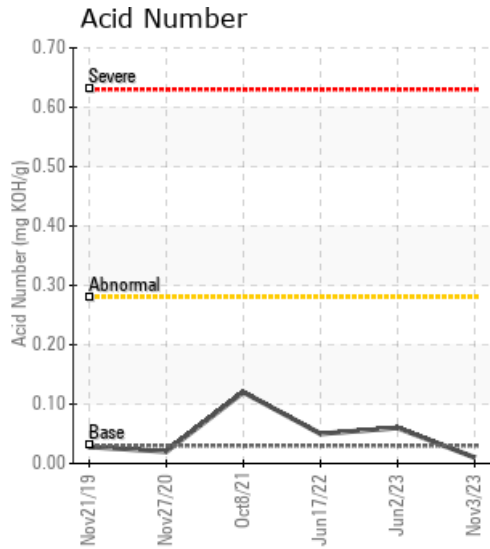
[Cenovus / LSD 6-20-49-18W5] H55001

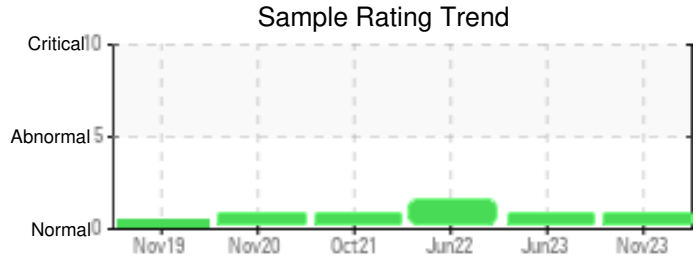
Customer: PTRHTF20039	System Information	Sample Information
BRENNTAG CANADA INC 3124-54TH AVENUE SE CALGARY, AB T2C 0A8 CA Attn: Matthew Kryska Tel: E-Mail: mkryska@brenntag.ca	System Volume: 37000 ltr Bulk Operating Temp: 417F / 214C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: ALCO	Lab No: 02598609 Analyst: Lyle Dach Sample Date: 11/03/23 Received Date: 11/23/23 Completed: 11/28/23 Lyle Dach lyle.dach@HFSinclair.com

Recommendation: Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.

Comments: (GCD) 90% Distillation Point is marginally high.

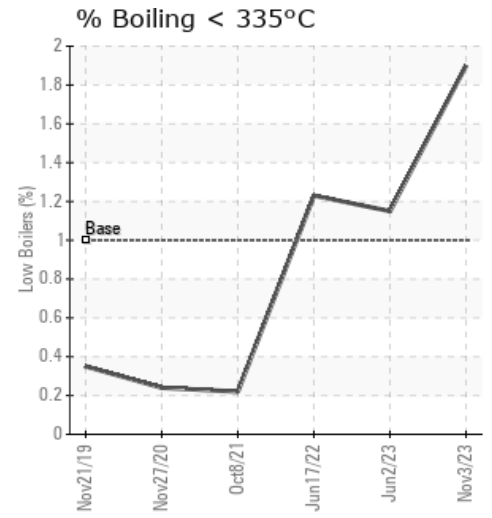
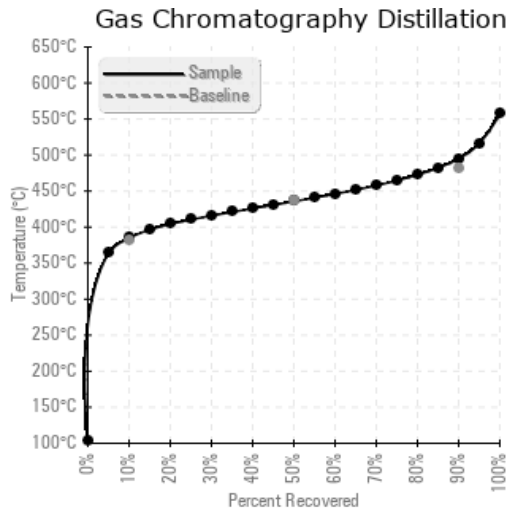
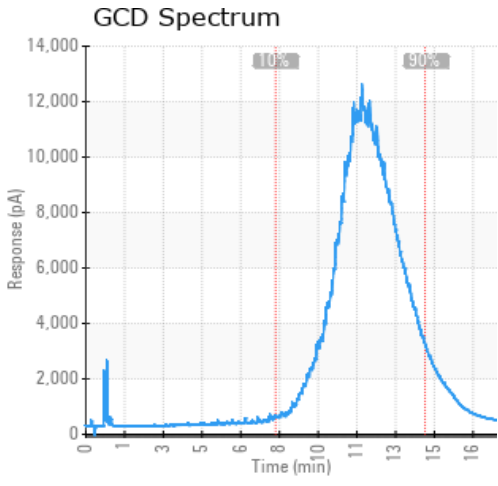
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/03/23	11/23/23	1.0m		475 / 246	16	35.0	0.01	0.032	725 / 385	816 / 436	922 / 495	1.90
06/02/23	07/18/23	48.0m	bef.slip stream fltr	453 / 234	35.2	34.9	0.06	0.016	730 / 388	819 / 437	926 / 497	1.15
06/17/22	07/12/22	26.0m	Return line	457 / 236	14.4	34.6	0.05	0.393	728 / 387	816 / 435	920 / 494	1.23
10/08/21	11/12/21	24.0m	F-5530-1	464 / 240	0.00	34.9	0.12	0.071	735 / 391	819 / 437	926 / 497	0.22
11/27/20	12/18/20	14.0m	Heat medium return	453 / 234	78.8	34.8	0.02	0.019	734 / 390	819 / 437	927 / 497	0.24
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	
11/03/23	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
06/02/23	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/17/22	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/08/21	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
11/27/20	2	0	0	0	0	0	0	0	0	0	1	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	
06/02/23	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months. (GCD) 90% Distillation Point is marginally high.
06/17/22	Pentane insolubles are increased, 90% distillation is still slightly raised but is down from last sample. Ensure sample piping is purged and avoid external contaminants when collecting samples. Resample in 6 months. Pentane Insolubles levels are abnormally high. (GCD) 90% Distillation Point is marginally high.
10/08/21	Sample results indicate that the fluid is in suitable condition for continued service. 90% distillation point is slightly high ensure blanket gas is on and functioning properly. Resample in 12 months. (GCD) 90% Distillation Point is marginally high.
11/27/20	Fluid is in very good condition overall. The GCD 90% is a little higher than normal which is likely caused by some oxidation that has taken place - not severe. Continue to submit annual samples to proactively monitor fluid condition.

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