

SECONDARY PUMP

Customer: PTRHTF20102
 SAVONA SPECIALTY PLYWOOD
 7273 KAMLOOPS LAKE DRIVE
 SAVONA, BC V0K 2J0 CA
 Attn: RANDY REIMER
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 E-Mail: randallreimer@apgroup.ca

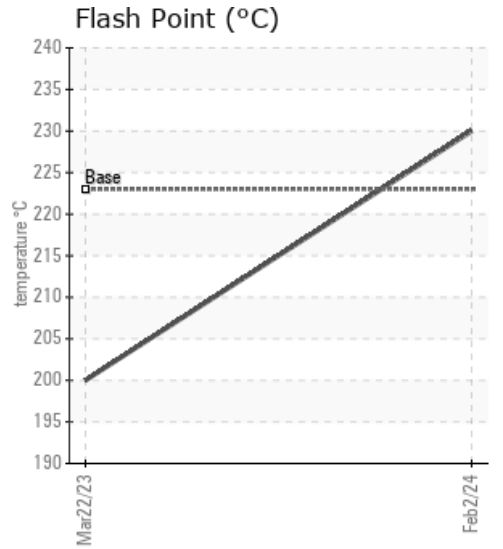
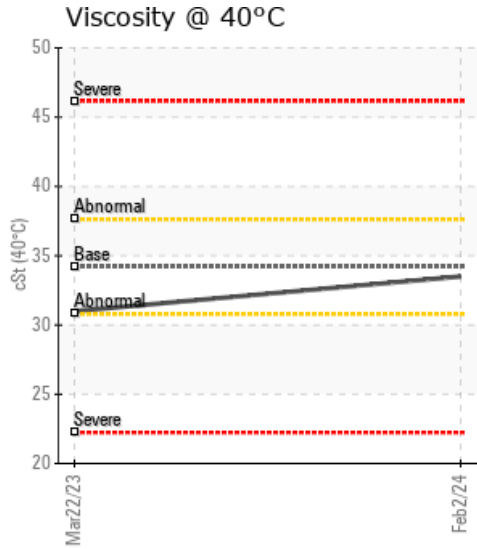
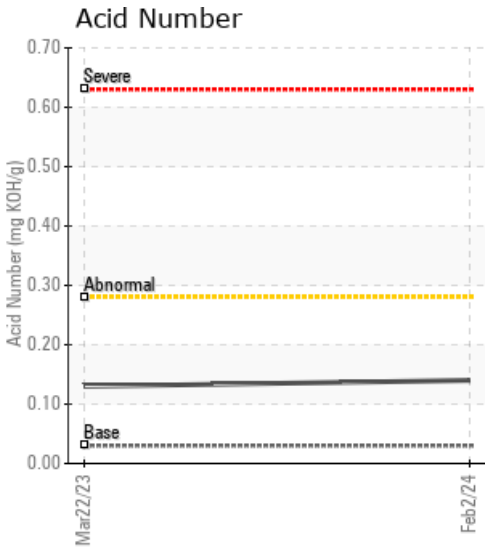
System Information
 System Volume: 0 gal
 Bulk Operating Temp: 550F / 288C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: SIGMA

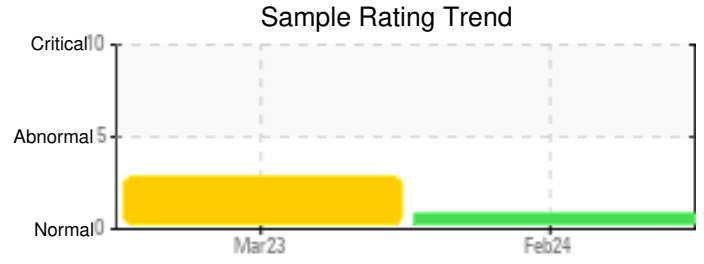
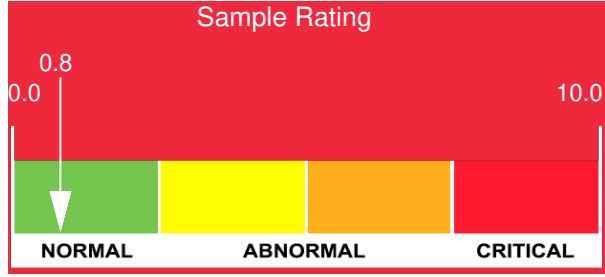
Sample Information
 Lab No: 02614172
 Analyst: Ray Rolston
 Sample Date: 02/02/24
 Received Date: 02/07/24
 Completed: 02/12/24
 Ray Rolston
 Ray.Rolston@HFSinclair.com

Recommendation: Water content, Acid Number (AN), viscosity, Cleveland Open Cup (COC) Flash Point results are good. Pentane Insolubles (solids content) has increased to 0.308 wt% which is approaching the warning guideline of 0.5%. Recommend investigating whether filtration of the fluid is feasible. Gas Chromatography Distillation (GCD) results indicate the presence of low boilers at a much lower volume than the March 2023 sample. These light ends should be vented to atmosphere if this can be done safely. The fluid is suitable for further service. Resample at the next service interval to monitor.

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

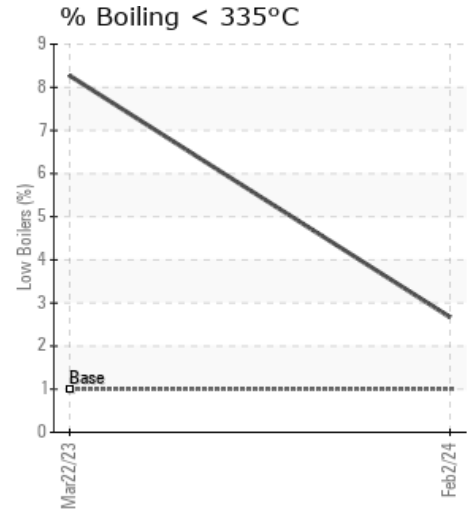
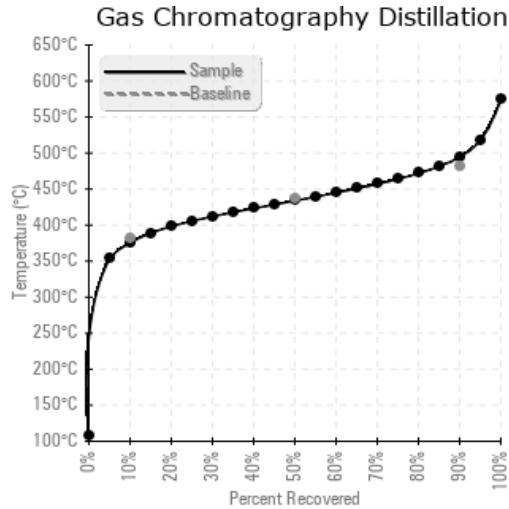
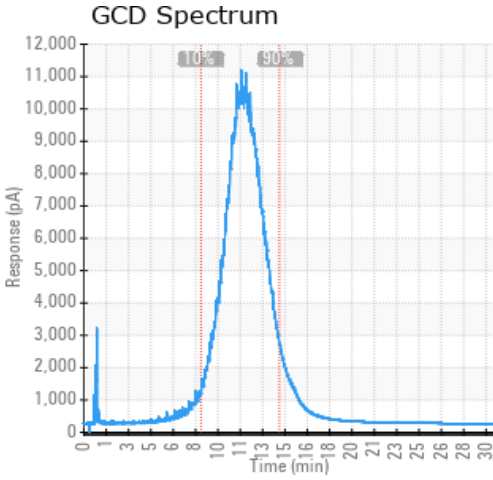
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/02/24	02/07/24	1.0y		446 / 230	14	33.5	0.14	0.308	708 / 375	813 / 434	922 / 494	2.67
03/22/23	03/29/23	5.0y		392 / 200	22.5	31.0	0.13	0.288	654 / 346	805 / 429	916 / 491	8.27
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
02/02/24	21	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
03/22/23	15	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

03/22/23	Water content, Acid Number (AN), viscosity, Cleveland Open Cup (COC) Flash Point and Pentane insolubles (solids content) are good. Gas Chromatography Distillation (GCD) results indicate the presence of low boilers. These light ends should be vented to atmosphere if this can be done safely. The fluid is suitable for further service. Resample at the next service interval to monitor. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.