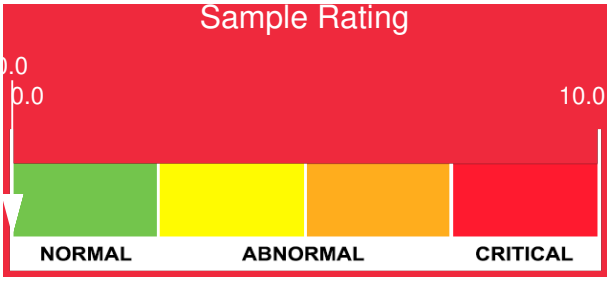
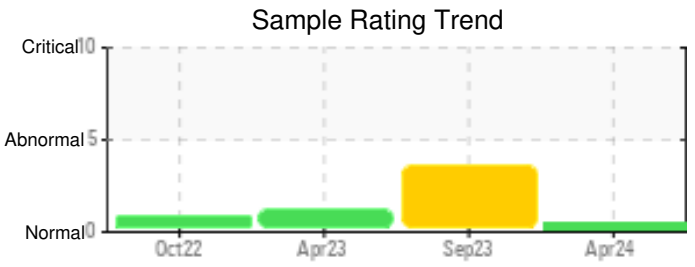




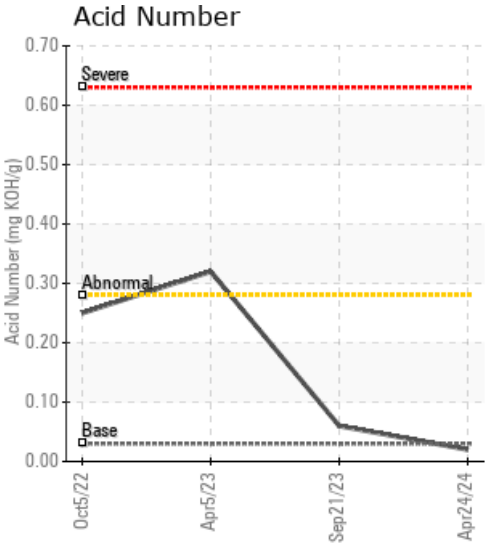
[10-22-50-26W4] H6205

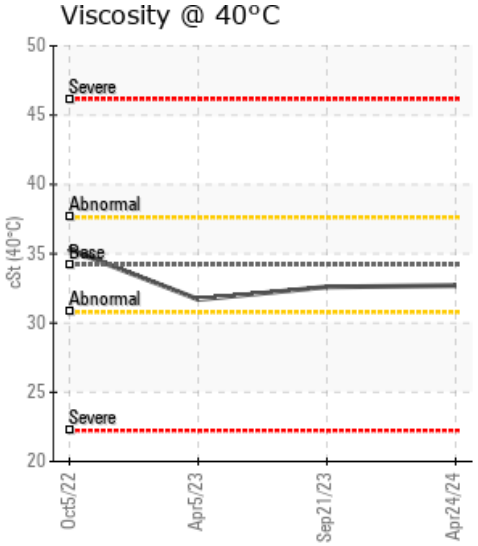
Customer: PTRHTF60080	System Information	Sample Information
Aspenleaf 1-24-052-20W5 Devon, AB CA Attn: Derek Jackson Tel: (780)919-8498 E-Mail: derek.jackson@aspenleafenergy.ca	System Volume: 24000 ltr Bulk Operating Temp: 356F / 180C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: S BLUE PROCESS	Lab No: 02632630 Analyst: Lyle Dach Sample Date: 04/24/24 Received Date: 05/01/24 Completed: 05/14/24 Lyle Dach lyle.dach@HFSinclair.com

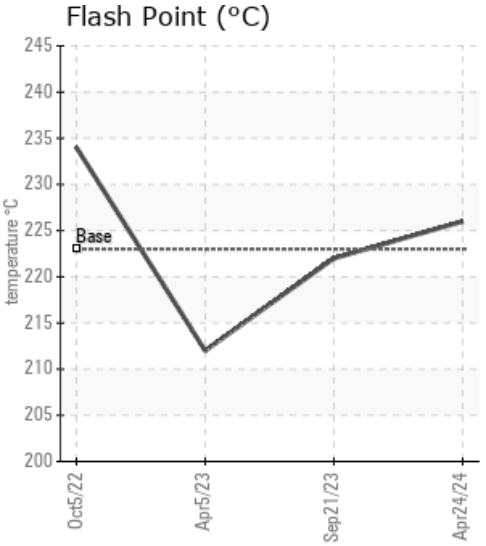
Recommendation: Sample results indicate that the fluid is in good condition and is suitable for continued service. Resample in 12 months.

Comments:

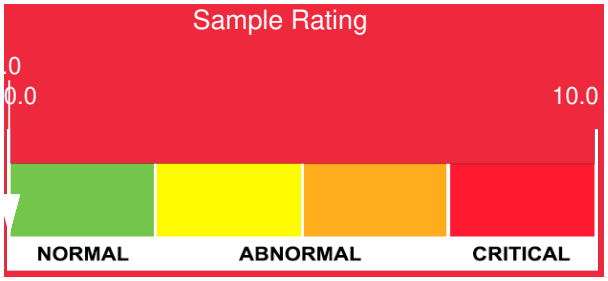
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/24/24	05/01/24	2.0y	pump suction	439 / 226	49	32.7	0.02	0.032	727 / 386	814 / 435	908 / 486	1.44
09/21/23	10/03/23	52.0y		432 / 222	350.4	32.6	0.06	0.042	728 / 387	814 / 434	906 / 486	1.64
04/05/23	04/18/23	0.0y		414 / 212	40.0	31.7	0.32	0.211	728 / 386	822 / 439	917 / 492	2.73
10/05/22	10/25/22	1.0y	new unit	453 / 234	23.5	35.3	0.25	0.114	743 / 395	827 / 442	922 / 494	0.46
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

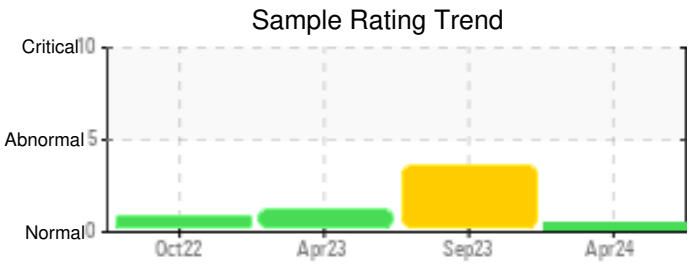






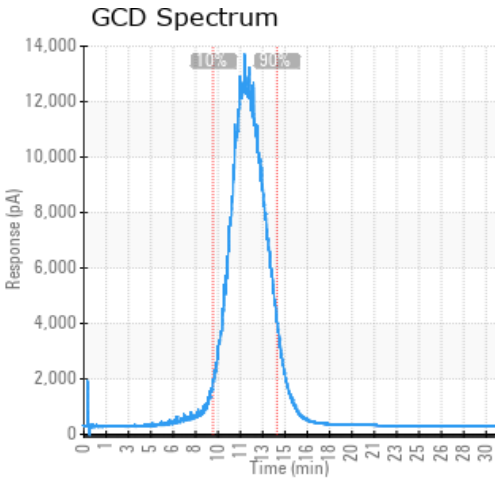
PETRO-CANADA LUBRICANTS

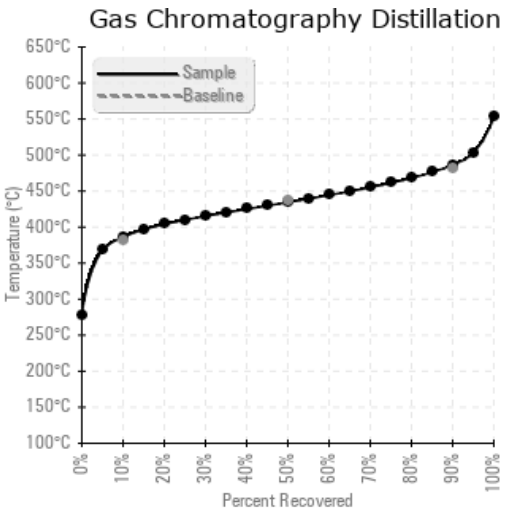


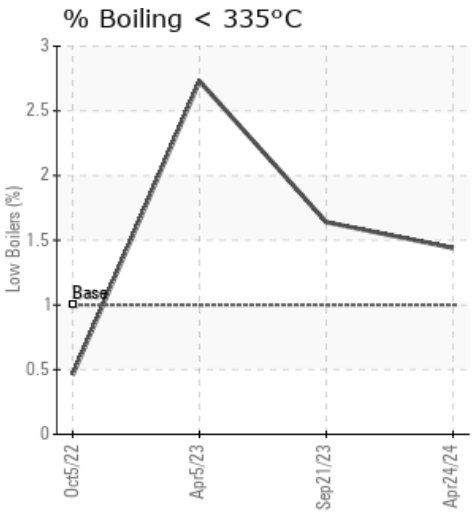


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
04/24/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09/21/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/05/23	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/05/22	20	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 anaysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]







Historical Comments

09/21/23	Water content up - it would be best to boil off excess water and vent the steam to ensure there are no unwanted boil overs and reduce the corrosion risk. Ensure blanket gas is function properly and no points are open to allow water to access the system.Fluid condition looks to be suitable for continued use once water has been reduced down to acceptable levels. Resample after venting has been completed. Water contamination levels are marginally high. Water contamination levels are marginally high.. ppm Water contamination levels are marginally high.
04/05/23	Acid number climbed slightly and viscosity has dropped slightly. Confirm blanket gas is functioning properly. Resample in 6 months to confirm fluid condition. If acid number continues to rise consider sweeting the system with new fluid until a complete change out can be planned. Acid number tends to increase exponentially and has potential for increased sludge deposits and system corrosion. All other parameters appear to be at acceptable levels for continued use. Acid Number (AN) is abnormally high.
10/05/22	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.

