

[4-17-51-18W5] UH-5000

Customer: PTRHTF60073
 Tourmaline Oil Corp
 4-17-51-18W5
 5991 3 Ave.
 Edson, AB T7E 1R8 CA
 Attn: Justin Thebeau
 Tel: (780)725-1519
 E-Mail:

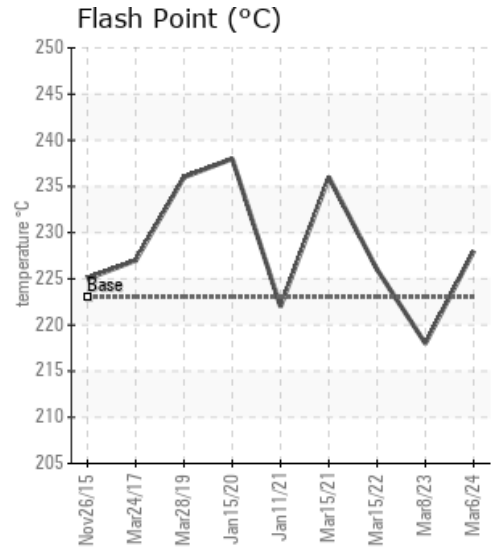
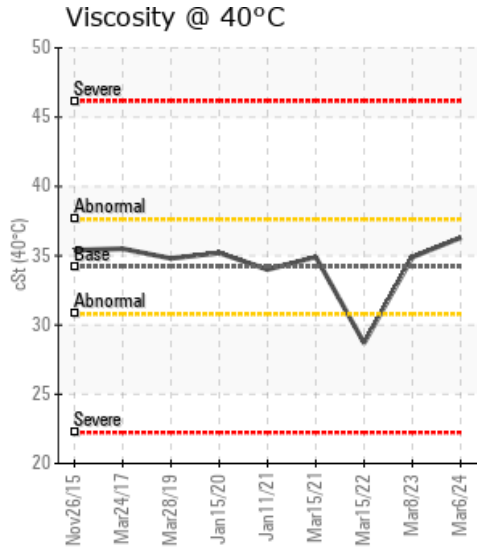
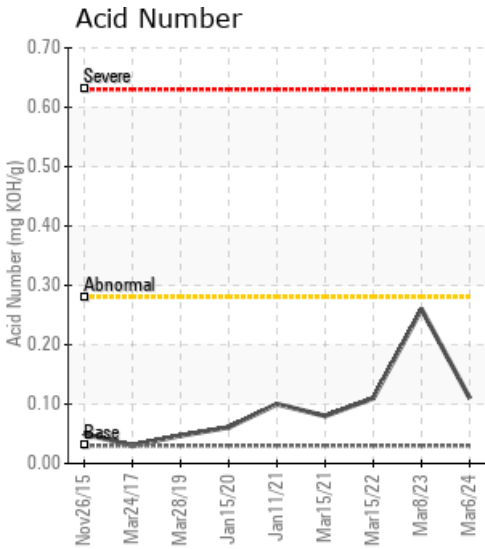
System Information
 System Volume: 19000 ltr
 Bulk Operating Temp: 500F / 260C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: RUSHTON

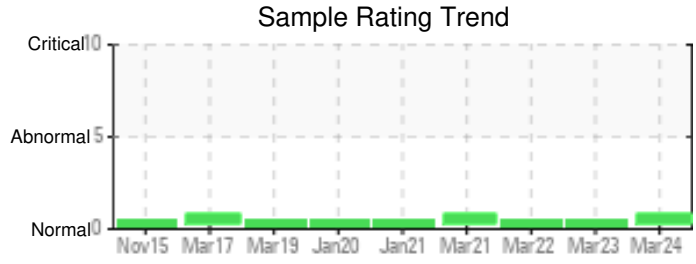
Sample Information
 Lab No: 02626250
 Analyst: Clinton Buhler
 Sample Date: 03/06/24
 Received Date: 04/02/24
 Completed: 04/10/24
 Clinton Buhler
 Clinton.Buhler@HFSinclair.com

Recommendation: Sample results indicate the fluid is in suitable condition for continued service. Solids content is up to 0.253%. Please re-sample in 12 months and carefully purge sample valve before taking sample.

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

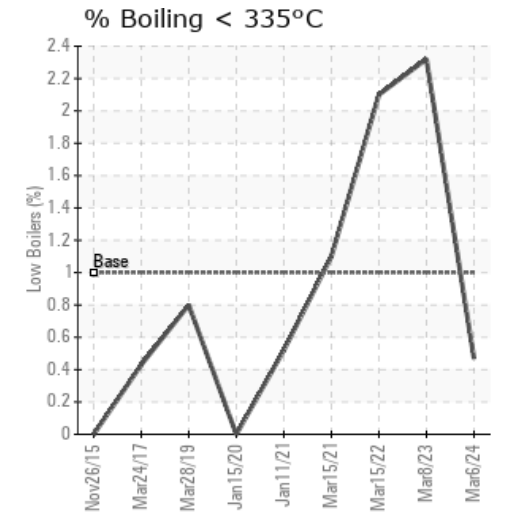
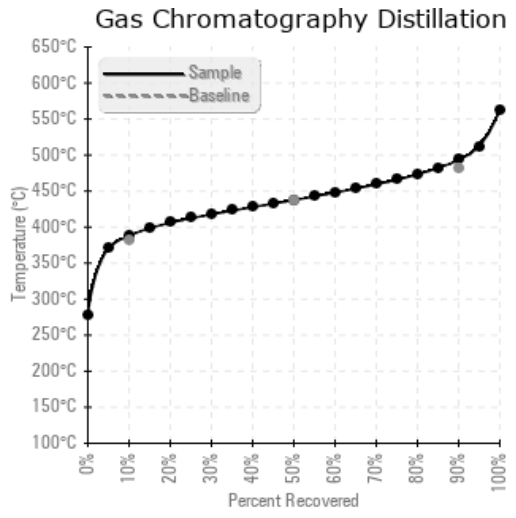
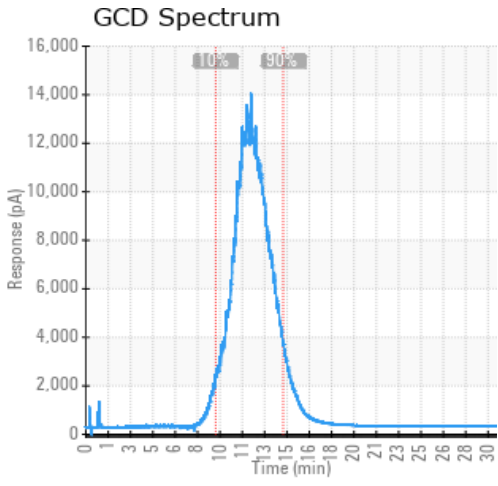
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/06/24	04/02/24	9.0y	return line	442 / 228	6	36.3	0.11	0.253	730 / 388	820 / 438	920 / 493	0.47
03/08/23	03/31/23	0.0y	sight glass	424 / 218	13.0	34.9	0.26	0.096	716 / 380	813 / 434	912 / 489	2.32
03/15/22	04/11/22	2.0y	sight glass	439 / 226	171.6	28.7	0.11	0.055	718 / 381	813 / 434	915 / 490	2.10
03/15/21	03/30/21	5.0y	Pump suction	457 / 236	7.2	34.9	0.08	0.051	720 / 382	815 / 435	924 / 496	1.10
01/11/21	01/22/21	6.0y	SITE GLASS	432 / 222	11.1	34.0	0.10	0.080	726 / 386	815 / 435	913 / 490	0.52
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
03/06/24	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/08/23	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/15/22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/15/21	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
01/11/21	2	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	
03/08/23	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
03/15/22	Sample results indicate the fluid is in suitable condition for continued service. Viscosity has been reduced yet flash point, distillation curve and low boiling vapor content are in good condition. Please re-sample in 12 months.
03/15/21	Fluid remains in excellent condition. No change since previous sample in January 2021. (GCD) 90% Distillation Point is marginally high.
01/11/21	This fluid appears to be in good condition. Maintain good system maintenance practices and resample in 6 months.

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