

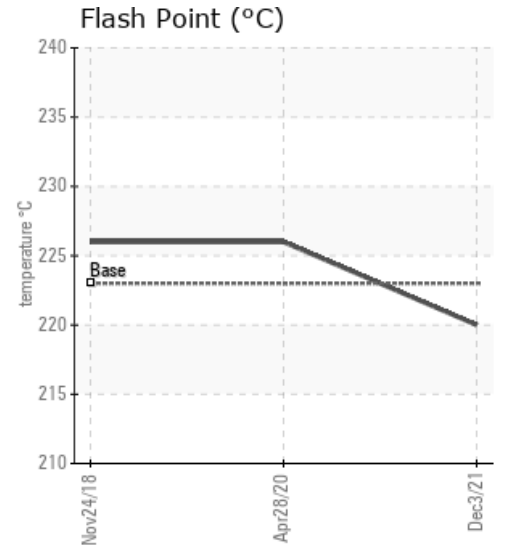
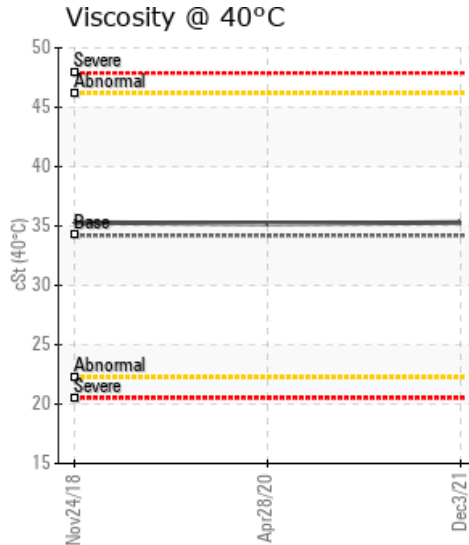
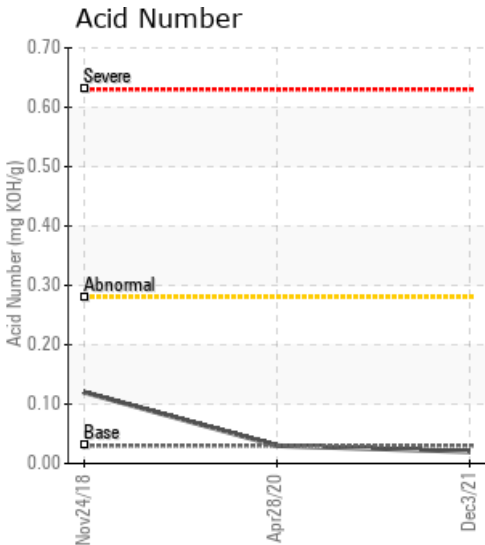
[2-11-080-16W6M] H5500-1 Train 1

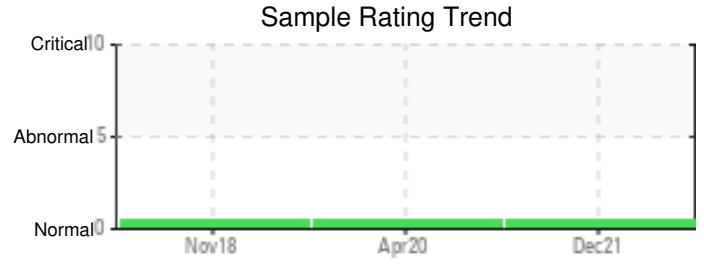
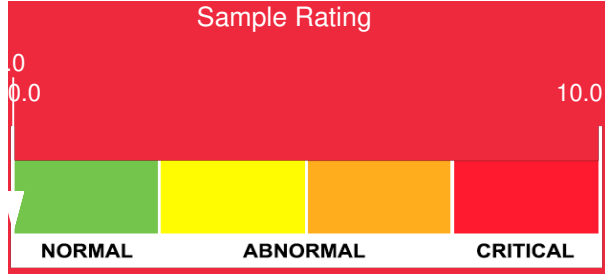
Customer: PTRHTF20156	System Information	Sample Information
TOURMALINE OIL 9920 98a Ave FORT ST. JOHN, BC V1J 1S2 Canada Attn: Brandon Braun Tel: (250)262-5420 E-Mail: Brandon.braun@tourmalineoil.com	System Volume: 15000 ltr Bulk Operating Temp: 345F / 174C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02476628 Analyst: Clinton Buhler Sample Date: 12/03/21 Received Date: 03/10/22 Completed: 03/16/22 Clinton Buhler Clinton.Buhler@hollyfrontier.com

Recommendation: Sample results indicate the fluid is in suitable condition for continued service. Please re-sample in 12 months

Comments:

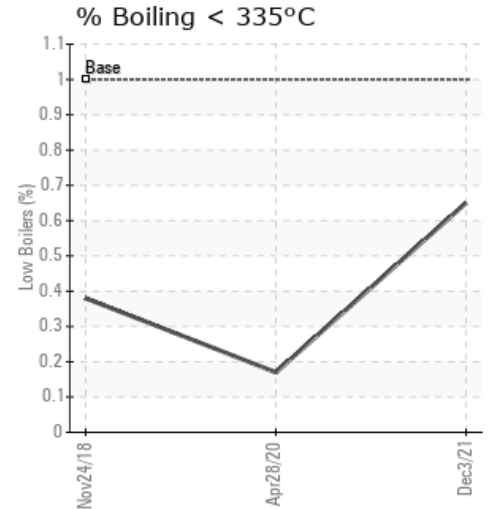
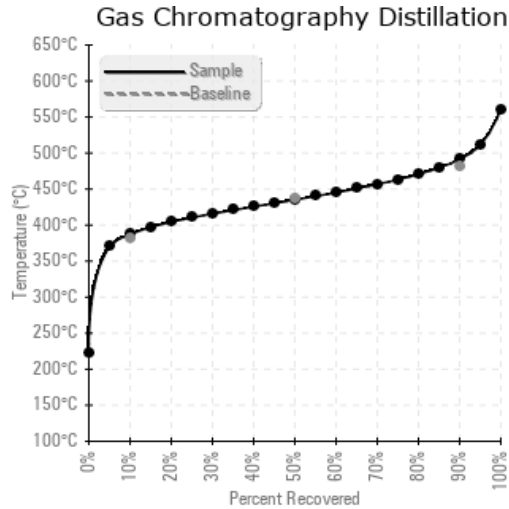
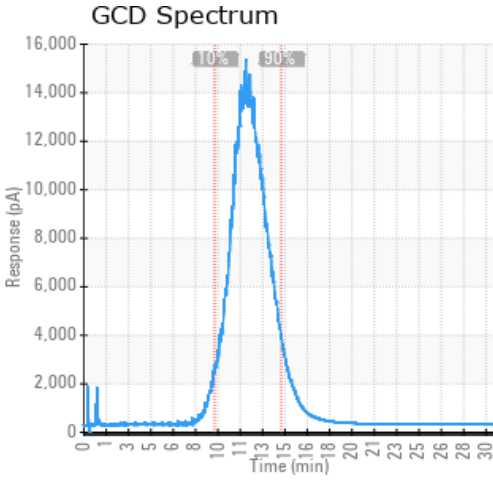
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/03/21	03/10/22	4.0m	Exp tank disch line	428 / 220	235.6	35.3	0.02	0.073	729 / 387	815 / 435	916 / 491	0.65
04/28/20	04/29/20	36.0m	EXPANSION TANK PUMP	439 / 226	301.3	35.2	0.03	0.067	733 / 390	817 / 436	917 / 492	0.17
11/24/18	12/18/18	18.0m		439 / 226	152.0	35.3	0.12	0.045	721 / 383	810 / 432	917 / 492	0.38
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
12/03/21	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
04/28/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/24/18	0	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

04/28/20	Sample results indicate that the heat transfer fluid is suitable for continued service. There is 301ppm of water which is not as high as unit 5500-2, but should be monitored. Please ensure sample point and hardware is thoroughly purged before obtaining fluid sample. Please re-sample in 12 months.
11/24/18	The fluid is in excellent condition and suitable for further use. Please re-sample in 6 months.

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