

[1-24-52-20W5] H4010 (H500)-DISCHARGE OF PUMP

Customer: PTRHTF20103
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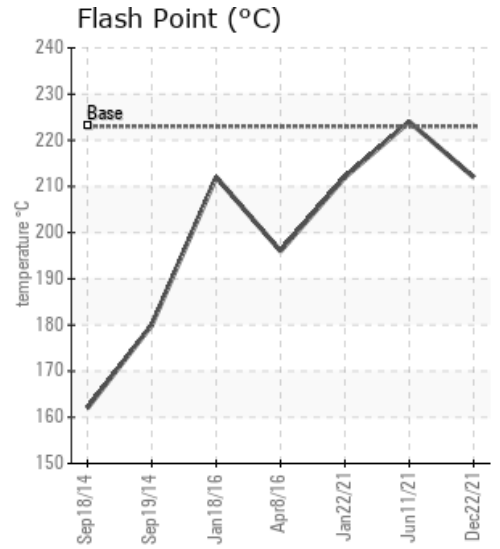
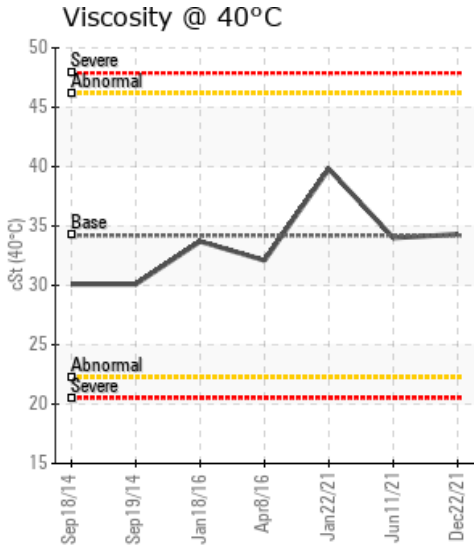
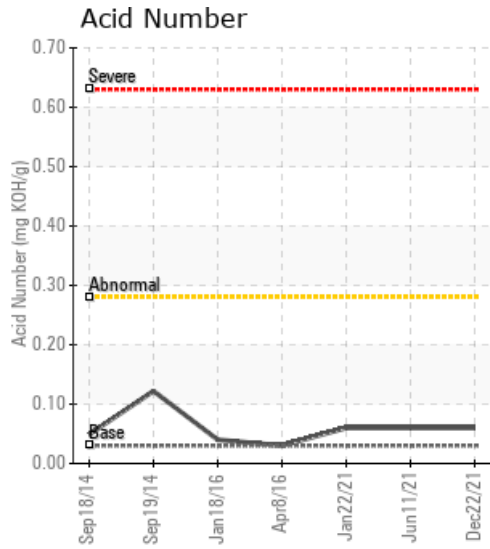
System Information
 System Volume: 17000 ltr
 Bulk Operating Temp: 500F / 260C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: ALCO

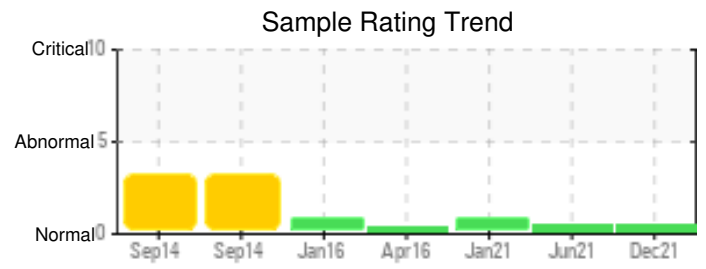
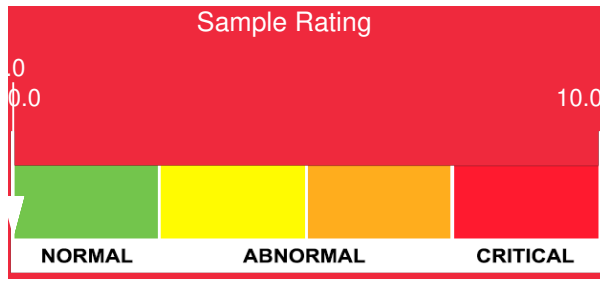
Sample Information
 Lab No: 02466160
 Analyst: Clinton Buhler
 Sample Date: 12/22/21
 Received Date: 01/13/22
 Completed: 01/18/22
 Clinton Buhler
 Clinton.Buhler@hollyfrontier.com

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

Comments:

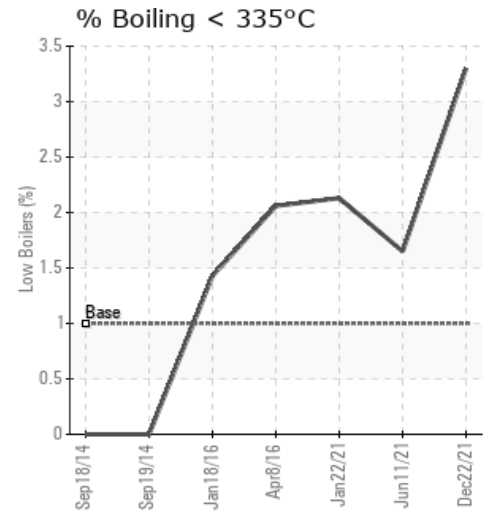
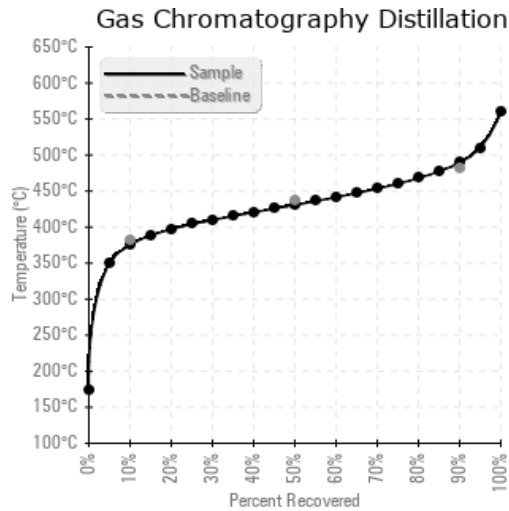
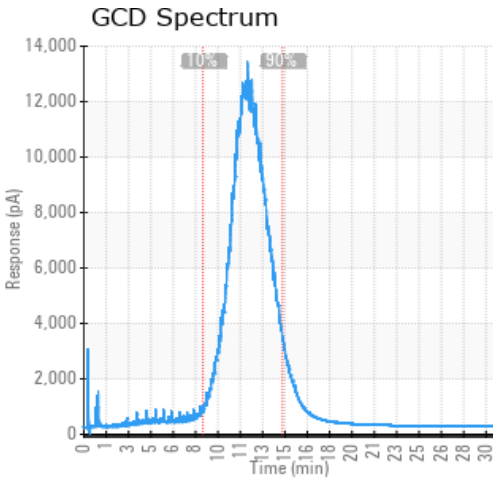
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/22/21	01/13/22	0.0y	Pump discharge	414 / 212	10.2	34.3	0.06	0.054	708 / 375	807 / 431	913 / 490	3.30
06/11/21	06/18/21	0.0y	PUMP DISCHARGE	435 / 224	2.0	34.0	0.06	0.056	717 / 381	810 / 432	915 / 491	1.65
01/22/21	01/27/21	0.0y		414 / 212	9.7	39.8	0.06	0.468	715 / 379	810 / 432	916 / 491	2.13
04/08/16	05/04/16	1.0y	1-24-52-20W5	385 / 196	2.2	32.1	0.03	0.054	711 / 377	808 / 431	916 / 491	2.06
01/18/16	02/19/16	0.0y	SIGHT GLASS	414 / 212	26.1	33.7	0.04	0.065	715 / 380	812 / 434	920 / 493	1.43
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
12/22/21	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
06/11/21	4	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
01/22/21	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
04/08/16	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
01/18/16	2	0	0	0	0	0	0	0	0	0	1	1	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

06/11/21	This fluid is in good condition and suitable for further use. Resample in 6 months.
01/22/21	The fluid is in a good condition but slightly elevated viscosity at 40C combined with a high 90% GCD temperature indicates the onset of oxidation. Please ensure the blanket gas system is in good working order. Pentane Insoluble (solids) content is getting close the reportable limit of 0.5%. Please consider fluid filtration in the near future. Resample in 12 months. Pentane Insolubles levels are abnormally high.
04/08/16	The fluid is in good condition and suitable for further use. Please re-sample in 12 months.
01/18/16	The fluid is in good condition and suitable for further use. Please re-sample in 12 months. Indicate fluid service life at next sample. (GCD) 90% Distillation Point is marginally high.

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