

# HOT OIL

**Customer: PTRHTF10002**  
 EVONIK  
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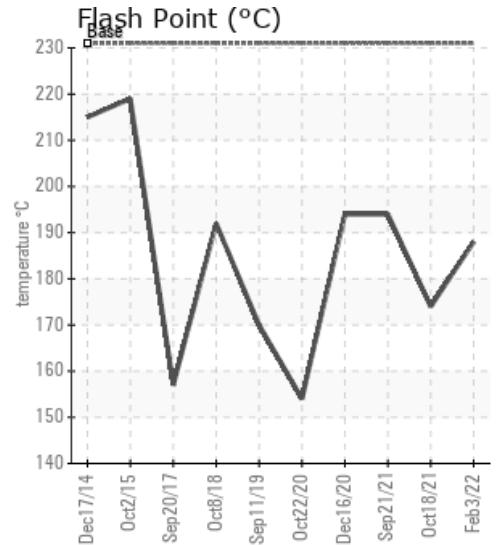
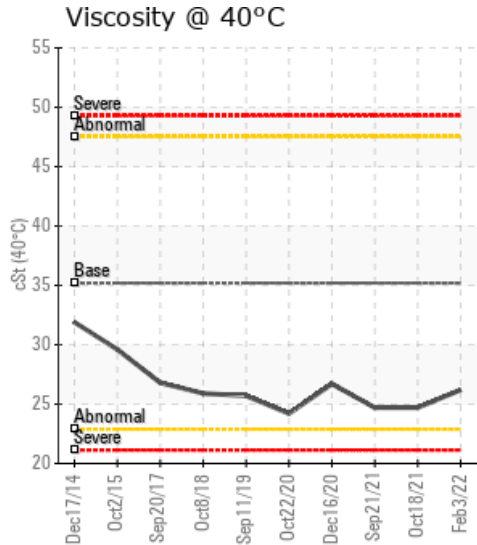
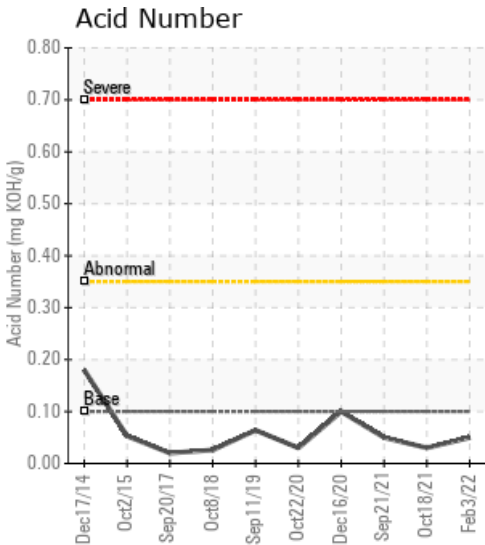
**System Information**  
 System Volume: 1500 gal  
 Bulk Operating Temp: 600F / 316C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO HTF  
 Make:

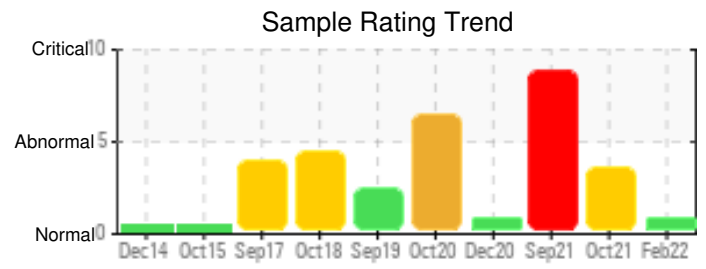
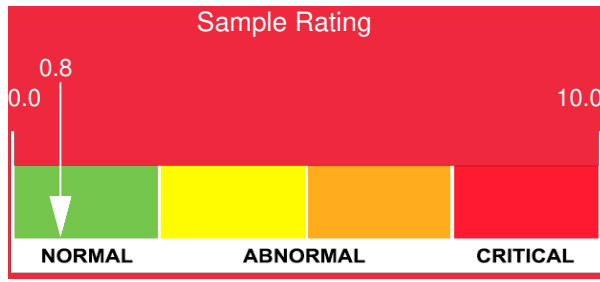
**Sample Information**  
 Lab No: 02470029  
 Analyst: Ron LeBlanc  
 Sample Date: 02/03/22  
 Received Date: 02/03/22  
 Completed: 02/15/22  
 Ron LeBlanc  
 Ronald.LeBlancSr@hollyfrontier.com

Recommendation: Sample appears normal except for COC Flash Point is marginally low. Add a small amount of new oil to raise flash point.

Comments: COC Flash Point is marginally low.

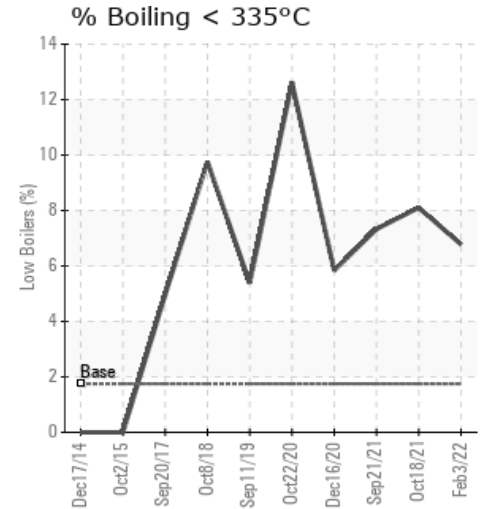
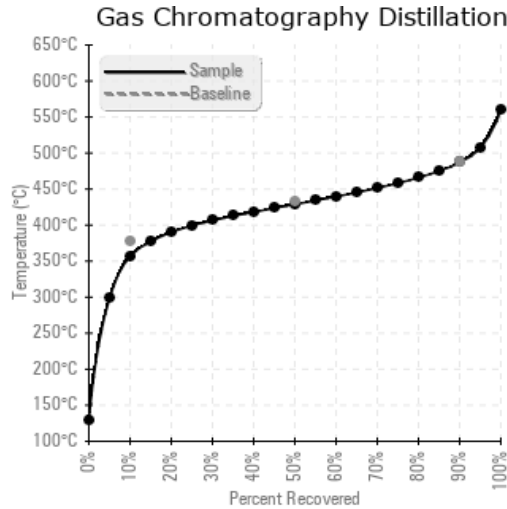
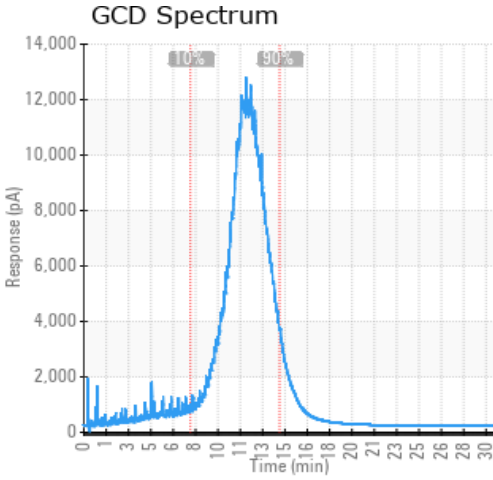
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/03/22	02/03/22	0.0y		370 / 188	102.0	26.2	0.05	0.060	674 / 357	804 / 429	908 / 487	6.78
10/18/21	10/28/21	0.0y		345 / 174	16.5	24.7	0.03	0.163	658 / 348	800 / 427	909 / 487	8.10
09/21/21	10/05/21	1.0y		381 / 194	1552.3	24.7	0.05	0.068	667 / 353	801 / 427	908 / 487	7.33
12/16/20	01/07/21	0.0y		381 / 194	23.7	26.7	0.10	0.054	685 / 363	805 / 430	912 / 489	5.84
10/22/20	10/29/20	1.0y		309 / 154	18.6	24.2	0.03	0.065	580 / 304	773 / 412	881 / 472	12.61
Baseline Data				448 / 231		35.20	.1		712 / 378	810 / 432	910 / 488	1.75





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
02/03/22	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0
10/18/21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
09/21/21	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0
12/16/20	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0
10/22/20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
Baseline Data			0	0						0			0	0				0	0				280	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments	
10/18/21	The oil typicals have returned to somewhat normal compared to the previous sample. Pentane insolubles indicate some contamination. Water content dropped significantly. Adding a small amount of new oil could improve the typicals significantly. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.
09/21/21	The water is Extremely high in the sample. The COC Flash point is low although it has come up in the last two samples. The sample appears normal other than the two items listed. ppm Water contamination levels are severely high. Water contamination levels are severely high. COC Flash Point is marginally low.
12/16/20	COC Flash Point is marginally low. Recommend venting off low boilers.
10/22/20	Distillation and flash points very low. Carefully vent off the low boilers and resample. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is abnormally high. (GCD) 90% Distillation Point is abnormally low.

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