

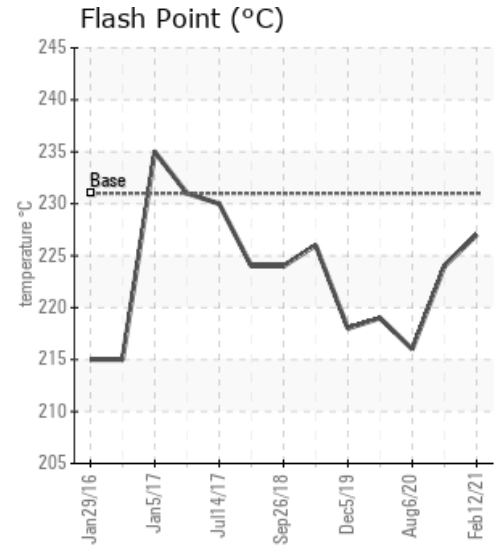
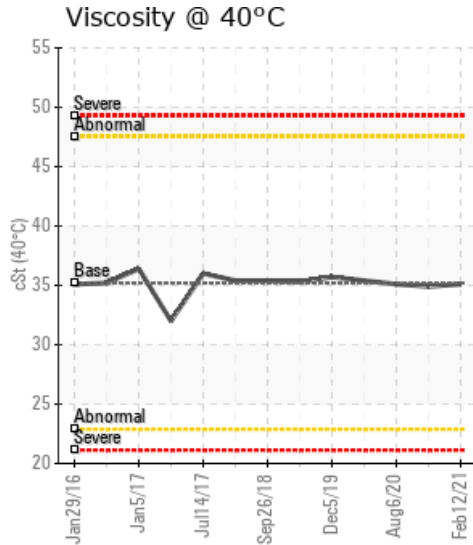
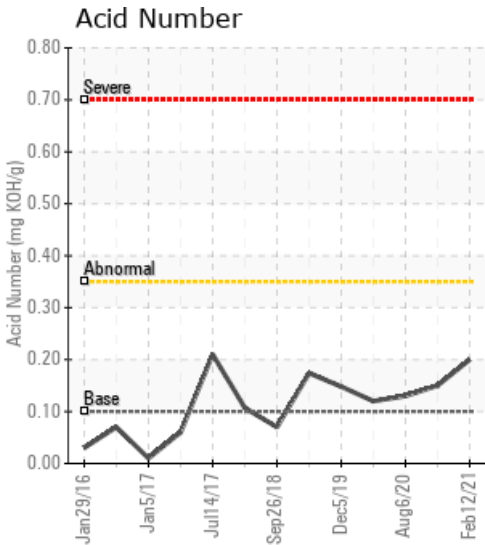
## LN01 Filled Sealdown Hot Oil System

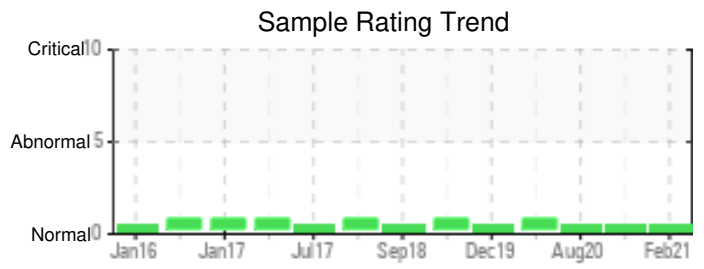
Customer: PTRHTF10141	System Information	Sample Information
TAMKO BUILDING PRODUCTS 2300 35TH ST TUSCALOOSA, AL 35401 USA Attn: Eric Foote Tel: x: E-Mail: eric_foote@tamko.com	System Volume: 110 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: Heat Exchanger And T	Lab No: 02405481 Analyst: Jake Finn Sample Date: 02/12/21 Received Date: 02/23/21 Completed: 02/25/21 Jake Finn jake.finn@hollyfrontier.com

Recommendation: While the color of this sample is darker and not consistent with previous samples from this unit, the test data shows that the fluid is in good condition and is suitable for continued use. Please resample and submit for testing in one year. Please also remember to include the oil age on future samples for a more accurate diagnosis and to capture changes in the fluid due to total usage time.

Comments: N/A

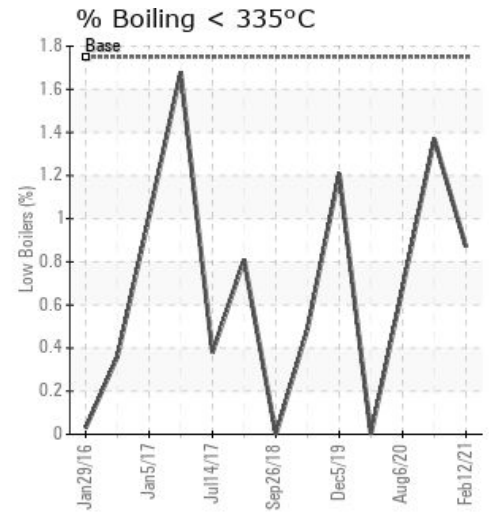
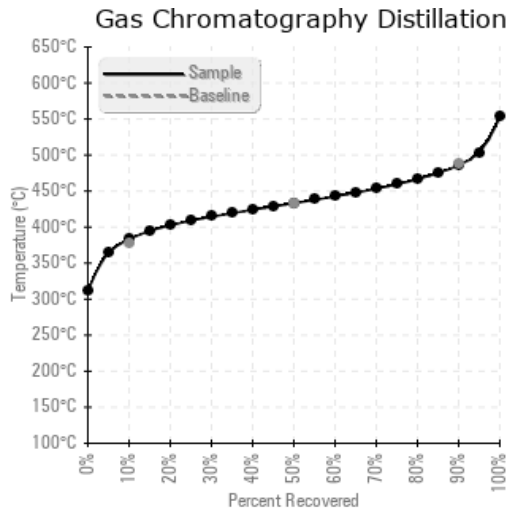
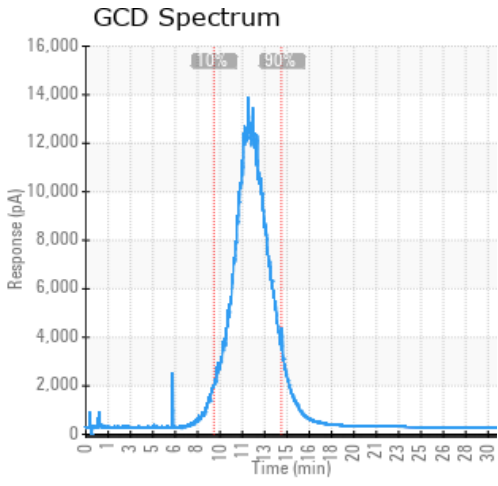
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/12/21	02/23/21	0.0y		441 / 227	7.3	35.1	0.20	0.063	721 / 383	812 / 433	907 / 486	0.87
10/30/20	11/09/20	0.0y		435 / 224	3.6	34.9	0.15	0.199	728 / 387	815 / 435	916 / 491	1.37
08/06/20	08/20/20	0.0y		421 / 216	21.0	35.1	0.13	0.033	736 / 391	819 / 437	919 / 493	0.68
03/18/20	03/25/20	0.0y	PORT	426 / 219	0.00	35.4	0.12	0.093	750 / 399	820 / 438	918 / 492	0.00
12/05/19	12/13/19	0.0y	PORT	424 / 218	26.5	35.7	0.148	0.067	704 / 374	794 / 423	906 / 485	1.21
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
02/12/21	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	2
10/30/20	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	50	0
08/06/20	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	57	0
03/18/20	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	46	0
12/05/19	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	46	0
<b>Baseline Data</b>			0	0						0		0	0				0	0					280	

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



Historical Comments	
10/30/20	Fluid appears to be in good condition and is suitable for continued use. Please resubmit for testing in 12 months.
08/06/20	GCD 10% distillation point has improved from last sample. Oil appears to be in great condition and is suitable for continued use. Please resubmit sample for testing in one year. Very light debris noted by lab.
03/18/20	Fluid is suitable for continued use. Please remember to include time on oil and resubmit in one year for testing. (GCD) 10% Distillation Point is marginally high. Very light debris noted by lab
12/05/19	Oil is suitable for continued use. Remember to please include the time on oil when submitting oil samples for evaluation. Oil can be sent in for testing in one year. N/A

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