

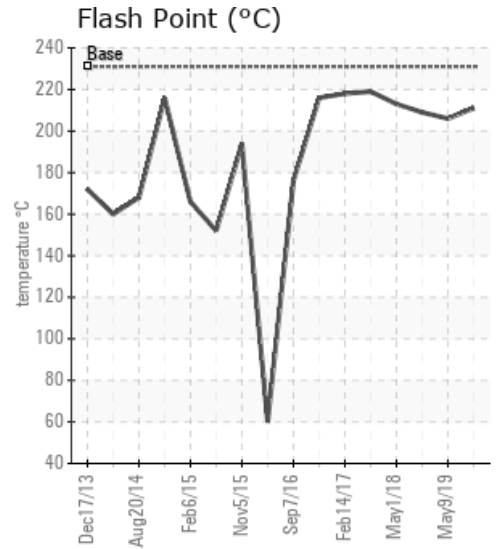
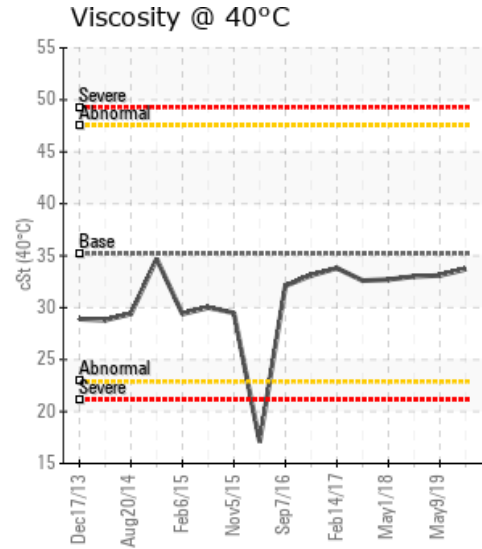
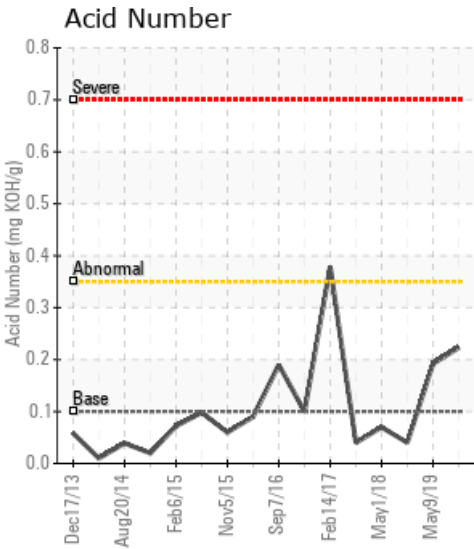
Laminate Storage/Delivery Hot Oil System

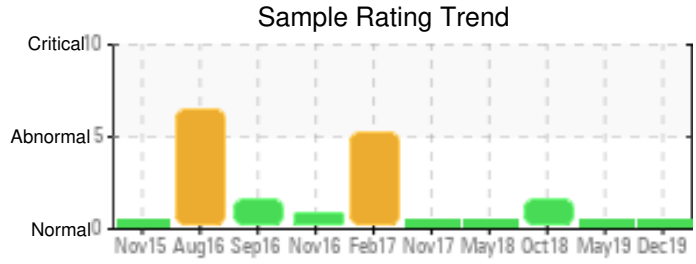
Customer: PTRHTF10141	System Information	Sample Information
TAMKO BUILDING PRODUCTS 2300 35TH ST TUSCALOOSA, AL 35401 USA Attn: Greg Colburn Tel: (205)752-3555 E-Mail: gregory_colburn@tamko.com	System Volume: 110 gal Bulk Operating Temp: 450F / 232C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: Hy-Way	Lab No: 02326904 Analyst: Jake Finn Sample Date: 12/05/19 Received Date: 12/13/19 Completed: 12/24/19

Recommendation: 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.

Comments: N/A

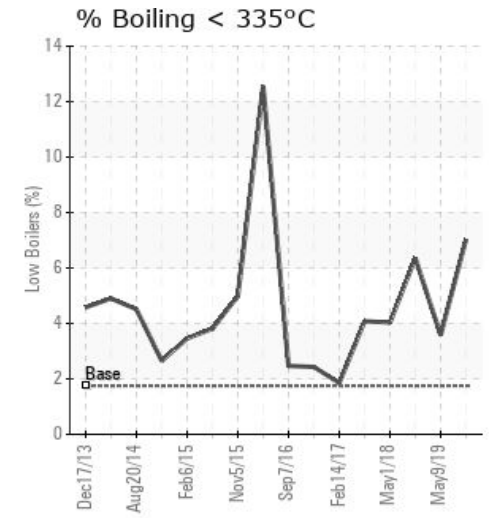
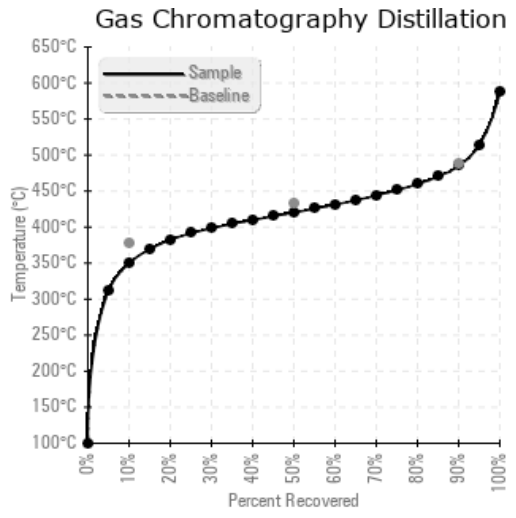
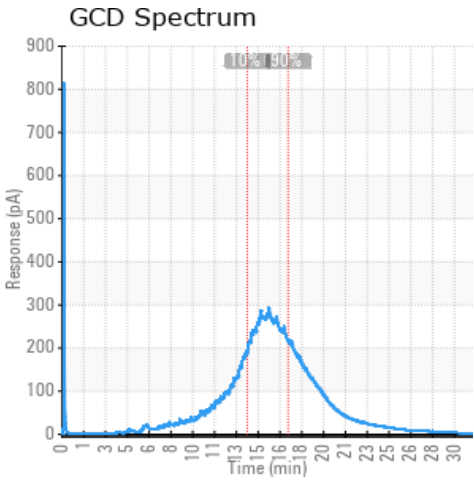
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/05/19	12/13/19	0m	PORT	412 / 211	27.3	33.7	0.223	0.110	662 / 350	788 / 420	904 / 485	7.03
05/09/19	05/17/19	6m	PORT	403 / 206	31.6	33.1	0.192	0.048	700 / 371	809 / 432	914 / 490	3.58
10/24/18	11/02/18	0m		408 / 209	66.5	33.0	0.04	0.061	672 / 356	799 / 426	896 / 480	6.36
05/01/18	05/09/18	6m	PORT	415 / 213	91.5	32.7	0.07	0.031	694 / 368	807 / 430	902 / 483	4.03
11/02/17	11/13/17	9m		426 / 219	2.3	32.6	0.04	0.024	695 / 368	806 / 430	903 / 484	4.08
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	
12/05/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	
05/09/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0
10/24/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	0
05/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0
11/02/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0
Baseline Data			0	0						0			0	0					0					280	

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



Historical Comments	
05/09/19	Oil is suitable for continued use. Please re-submit sample in 1 year. Acid number is normal, but has risen since the last sample, monitor at next test interval. Very light debris is noted by the lab.
10/24/18	Fluid is suitable for continued use. Re-sample in October 2019 and re-submit to the lab. Please include time on unit and time on the fluid during the next sample submission.
05/01/18	Fluid is suitable for continued use. Please re-submit annual sample on May 1, 2019. All parameters of this fluid are satisfactory. There was some 'light' visible debris contamination that could be filtered out safely during any future shutdowns.
11/02/17	Oil is suitable for continued use; if appropriate, any system filters should be changed OR kidney loop filtration is recommended during the next shutdown to extend the life of the oil. Wear Metals are Low; Contamination Levels are low; 2.3ppm water - low; Very Low Acid Numbers; 32.6 CsT @ 40oC Viscosity; 219 oC COC Flash Point; Pentane Insolubles are low; Very Light White Metal and debris visible

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.