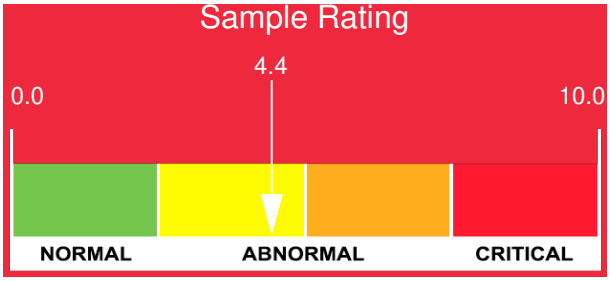
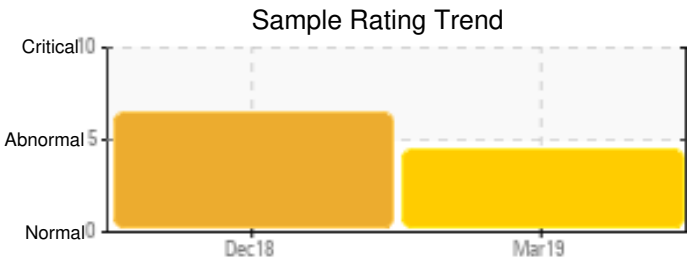




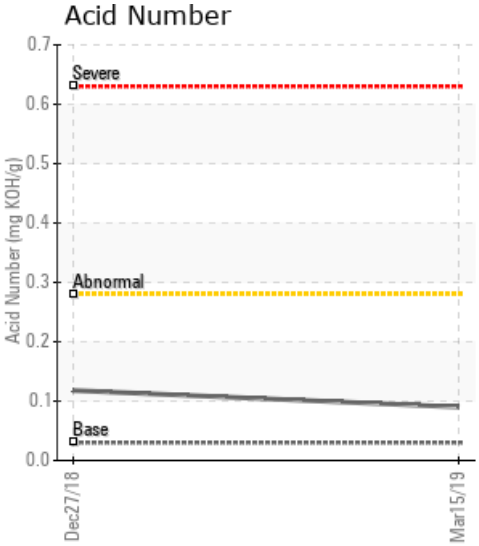
[G-1532] FB1530 HOT OIL

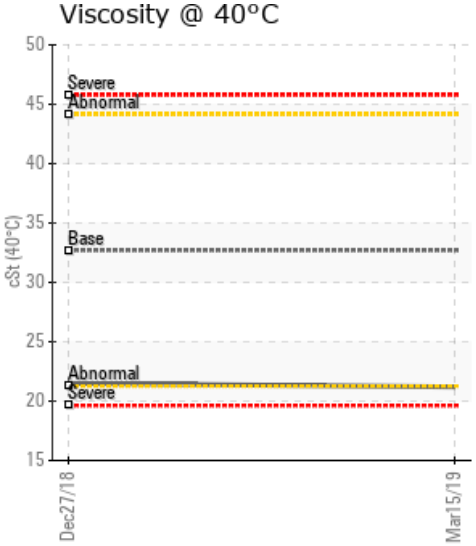
Customer: PTRHTF10083	System Information	Sample Information
KAO SPECIALTIES AMERICAS LLC 243 WOODBINE ST/PO BOX 2316 HIGH POINT, NC 27260 USA Attn: ROBERT WILLIAMS Tel: (336)878-4225 E-Mail: rwilliams@ksallc.com	System Volume: 7000 gal Bulk Operating Temp: 560F / 293C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02275650 Analyst: Manny Garcia Sample Date: 03/15/19 Received Date: 03/27/19 Completed: 04/09/19

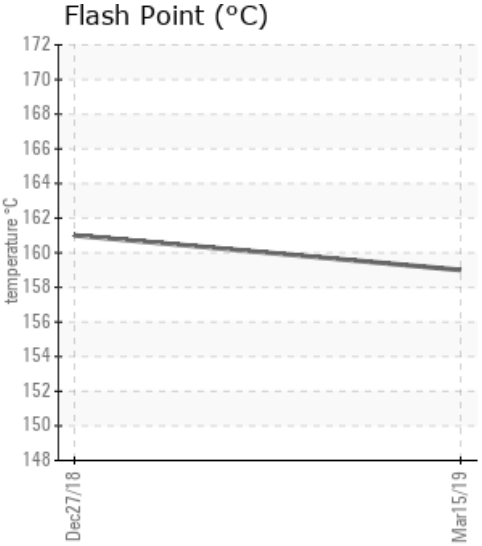
Recommendation: Depending on the age of the fluid in use and the age of the heat transfer system, this oil may be a candidate for full fluid drain, flush and fill with virgin oil. Please submit Sample for analysis in march 2020

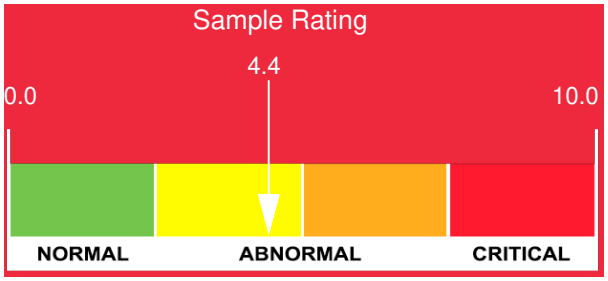
Comments: Venting the system was recommended for the sample submitted on December 2017. This fluid sample appears to be in worse condition 3+ months later. Venting is recommended again. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high. If venting was completed and nothing changed we could replace 10% of the fluid with virgin Calflo AF to get the fluid parameters aligned again.

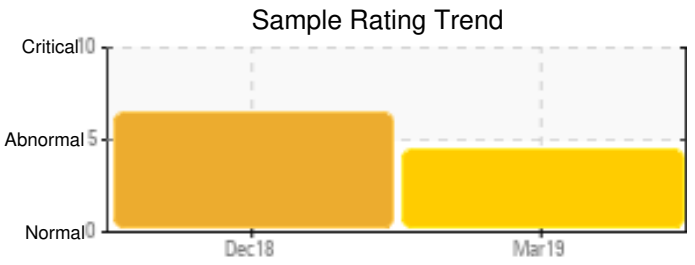
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/15/19	03/27/19	0y	G-1533	318 / 159	29.4	21.2	0.090	0.137	612 / 322	771 / 410	884 / 473	11.78
12/27/18	01/10/19	0y		322 / 161	8.4	21.5	0.118	0.150	596 / 313	750 / 399	866 / 463	14.33
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5







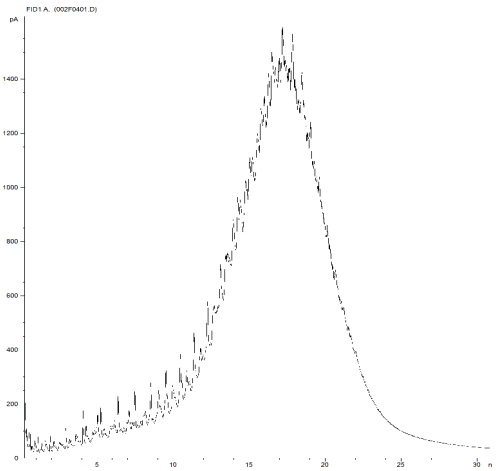




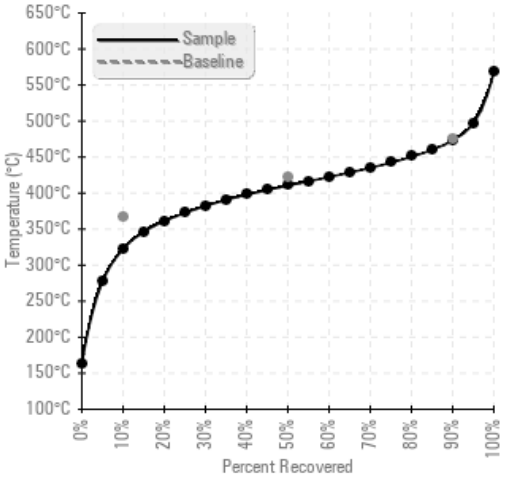
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/15/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
12/27/18	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
Baseline Data			0	0						0			0	0					0				270	

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

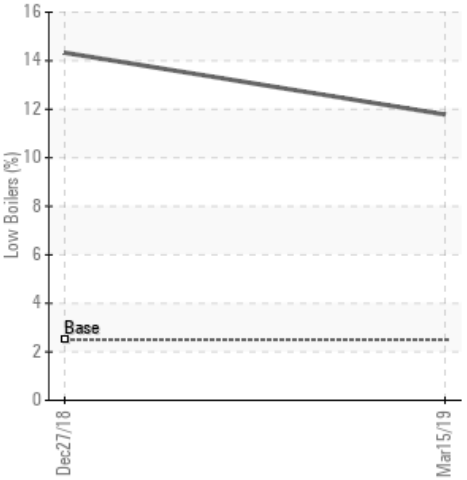
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

12/27/18	Normally 'venting' the system may get the distillation points in line and possibly increase the COC Flash Point, but in this case the oil should be considered for change-out because it has very poor parameters in many critical areas. Please include the age of the fluid and the age of the component during the next annual sample submission.(GCD) 10% Distillation Point is severely low. COC Flash Point is severely low by a total of 73oC (163oF) and at very dangerous levels = 161oC (321oF). (GCD) % < 335°C is abnormally high. (GCD) 90% Distillation Point is marginally low. The viscosity of the fluid is 1 ISO grade lower at an ISO 22 instead of the formulated ISO 32. Fluid has light debris and white metal. Fluid Flash Point is at a dangerously low 73oC (163oF) levels.

