

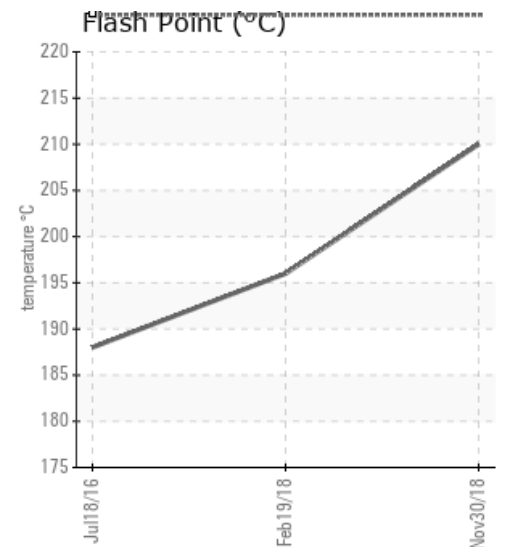
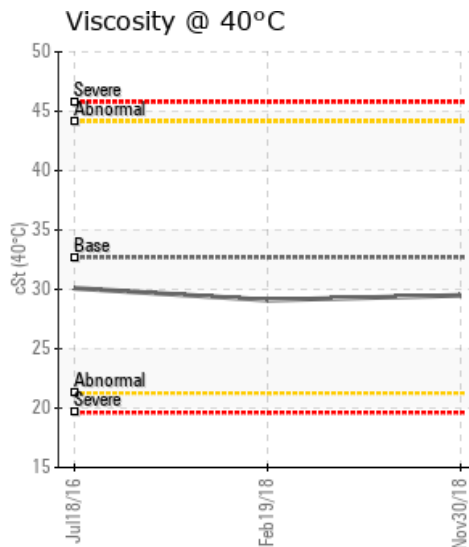
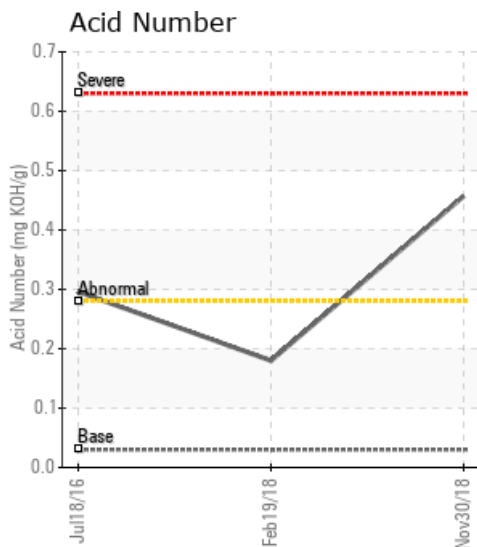
DUPLEX FILTER

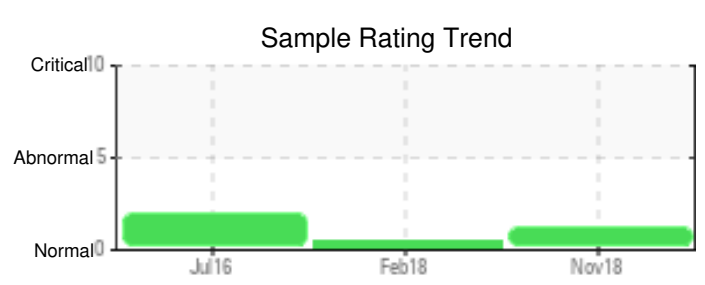
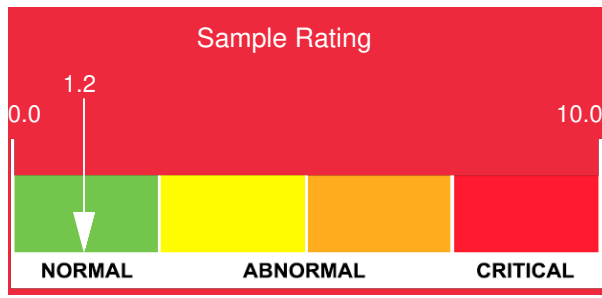
Customer: PTRHTF10028	System Information	Sample Information
PPG AEROSPACE 11601 UNITED ST MOJAVE, CA 93501 USA Attn: Phil Olson Tel: (661)232-6814 E-Mail: phil.olson@ppg.com	System Volume: 12 gal Bulk Operating Temp: 570F / 299C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02266545 Analyst: Steven Slanker Sample Date: 11/30/18 Received Date: 02/07/19 Completed: 02/11/19

Recommendation: Acid Number High: recommend replacing fluid in this 12 gallon system at next shutdown.

Comments: Acid Number (AN) is abnormally high.

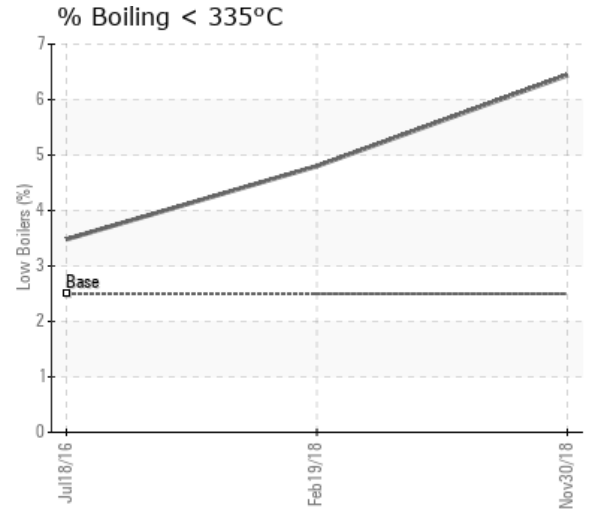
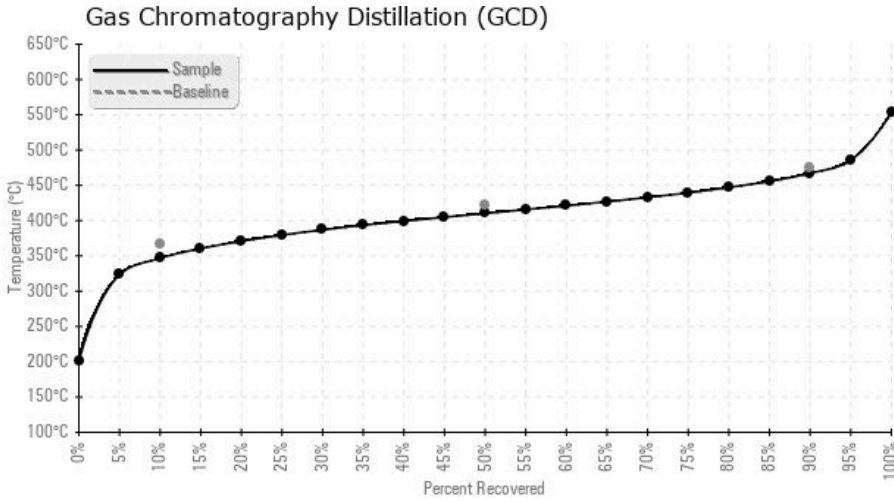
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/30/18	02/07/19	0c		410 / 210	81.8	29.5	0.457	0.152	656 / 347	770 / 410	873 / 467	6.44
02/19/18	03/02/18	0c		385 / 196	19.5	29.1	0.18	0.085	675 / 357	791 / 422	893 / 479	4.80
07/18/16	07/22/16	0c	BACK SIDE OF FILTER	370 / 188	8.2	30.1	0.296	0.077	678 / 359	785 / 419	896 / 480	3.48
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
11/30/18	13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	85	0
02/19/18	29	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	106	1
07/18/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	0
Baseline Data			0	0						0			0	0					0				270	

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



Historical Comments

02/19/18	Slightly low Flash Point and initial boiling point but suitable for continued use.
07/18/16	The acid number is on the high side and the flash point is marginally low. It is expected that these numbers will continue to degrade over time. Recommend cleaning and changing out the system as previously discussed at the end of the year. Acid Number (AN) is abnormally high. COC Flash Point is marginally low.