

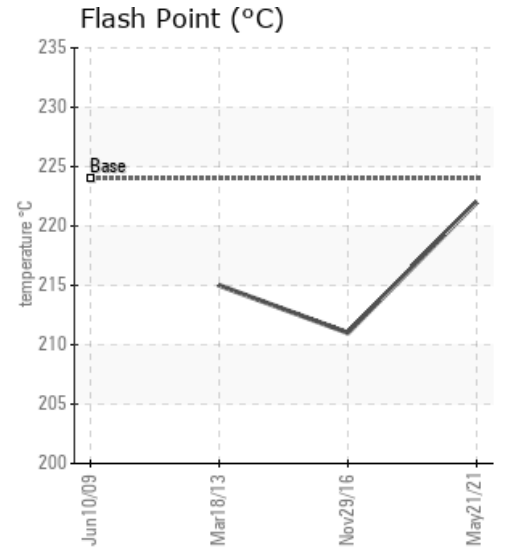
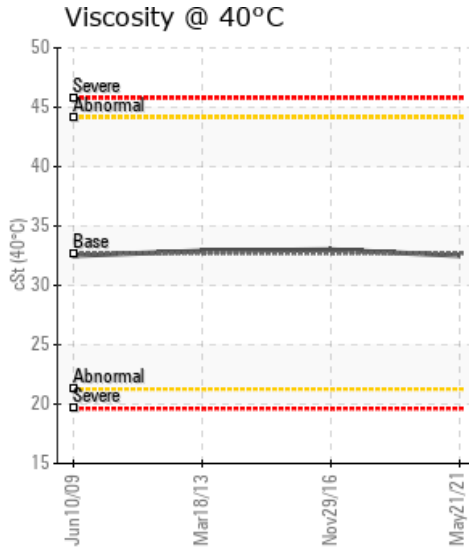
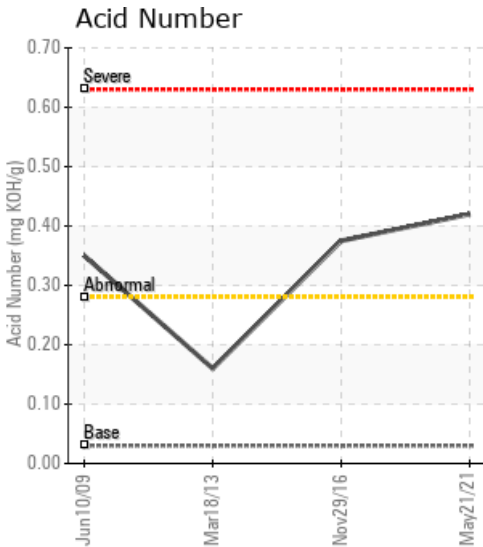
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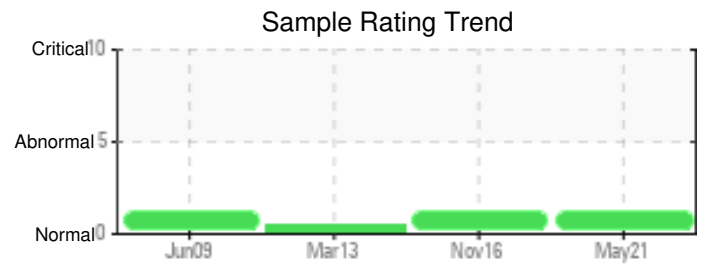
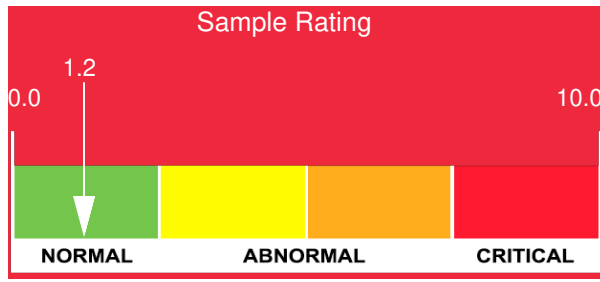
Customer: PTRHTF10011	System Information	Sample Information
G.F.S. CHEMICAL 851 Mckinley Avenue COLUMBUS, OH 43222 USA Attn: Jamie Walters Tel: (800)446-4910 E-Mail: jamie@gfschemicals.com	System Volume: 20 gal Bulk Operating Temp: 350F / 177C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: CHROMALOX	Lab No: 02448273 Analyst: Joe Goecke Sample Date: 05/21/21 Received Date: 10/05/21 Completed: 10/12/21 Joe Goecke joe.goecke@hollyfrontier.com

Recommendation: Acid number is a little high, Continue to use with no issues but resample at 1/2 the previous interval.

Comments: Acid Number (AN) is abnormally high.

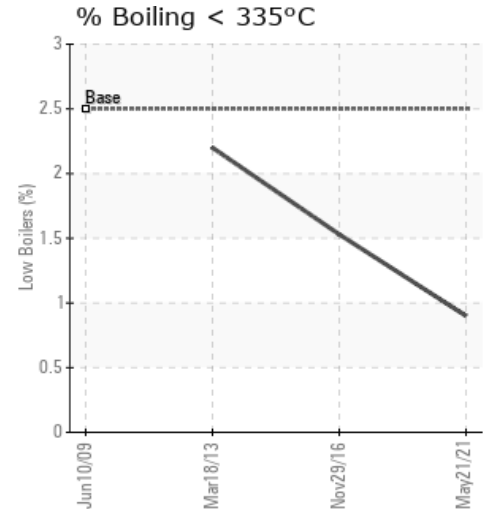
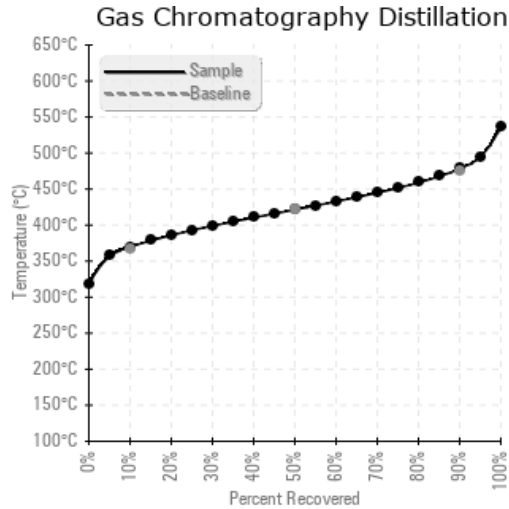
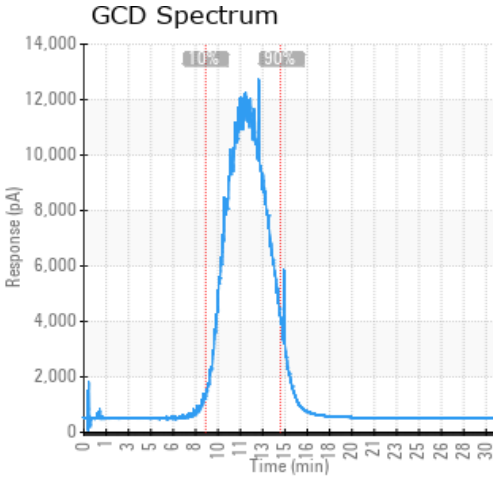
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/21/21	10/05/21	13.0y		432 / 222	6.3	32.5	0.42	0.087	697 / 370	791 / 421	893 / 478	0.90
11/29/16	12/20/16	0.0y		412 / 211	284.0	33.0	0.375	0.031	691 / 366	792 / 422	899 / 482	1.53
03/18/13	03/28/13	0.0y	RECIRC LINE	419 / 215	226.6	32.9	0.16	0.121	686 / 364	785 / 419	890 / 477	2.20
06/10/09	06/10/09					32.5	0.35					
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
05/21/21	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	225	0
11/29/16	2	0	2	0	5	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	221	1
03/18/13	2	0	0	0	1	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	214	0
06/10/09	5	0	1	0	1	0	0	0	0	0	5	1		0	0		0		0	0	0	0	199	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	
11/29/16	Sample shows no major issues, Acid number rising. Continue with use and resample at next scheduled interval. Acid Number (AN) is abnormally high.
03/18/13	The test results indicate the fluid is suitable for further use. Additive balance is healthy, viscosity and flash point are just like fresh oil.
06/10/09	

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