

## SYSTEM #1

**Customer: PTRHTF10073**  
 SHEPHERD COLOR  
 4539 DUES DRIVE  
 CINCINNATI, OH 45246 USA  
 Attn: Jeremy Tatarzyn  
 Tel: (513)874-0714  
 E-Mail: jtatarzyn@shepherdcolor.com

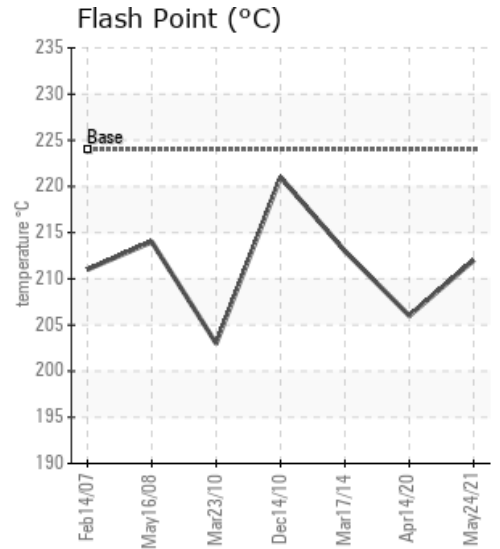
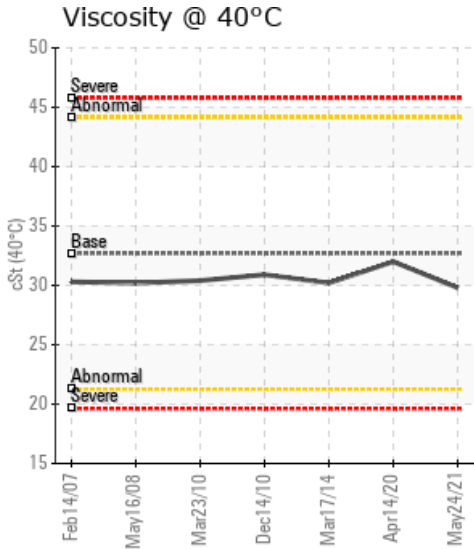
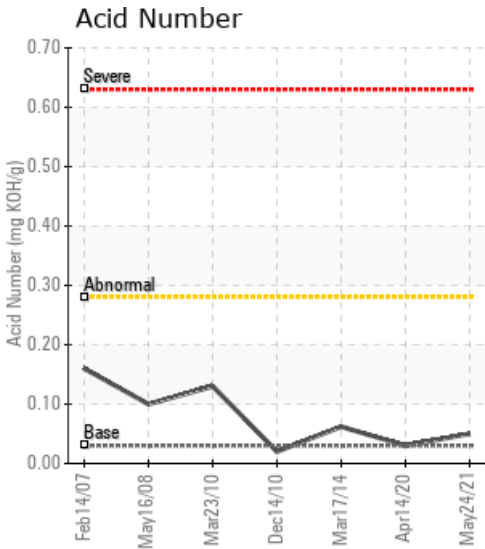
**System Information**  
 System Volume: 550 gal  
 Bulk Operating Temp: 420F / 216C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO AF  
 Make: FIRST THERMAL

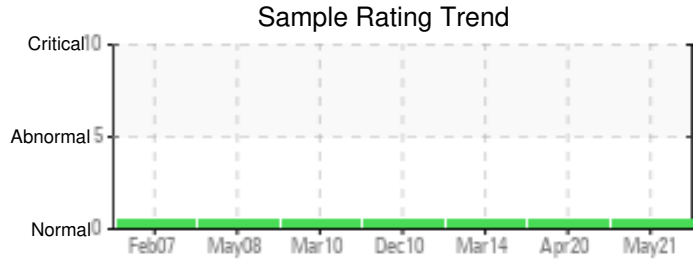
**Sample Information**  
 Lab No: 02424452  
 Analyst: Joe Goecke  
 Sample Date: 05/24/21  
 Received Date: 06/01/21  
 Completed: 06/02/21  
 Joe Goecke  
 Joe.goecke@hollyfrontier.com

Recommendation: Sample is in excellent condition. Continue to use and resample at next scheduled interval.

Comments:

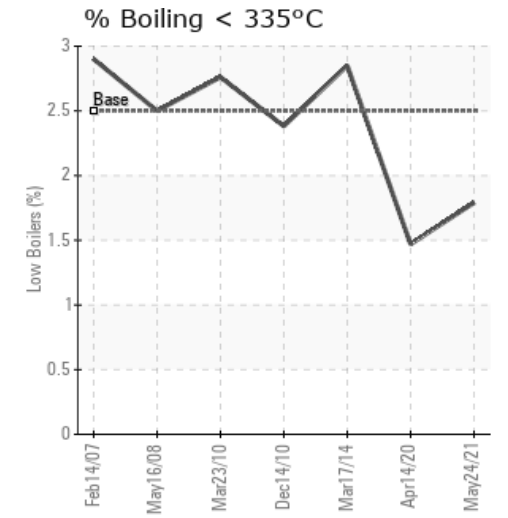
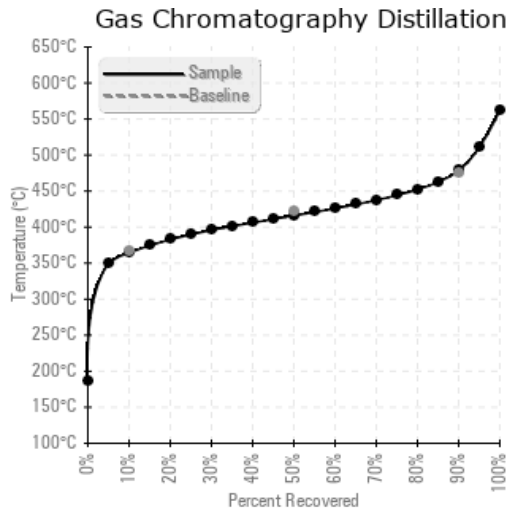
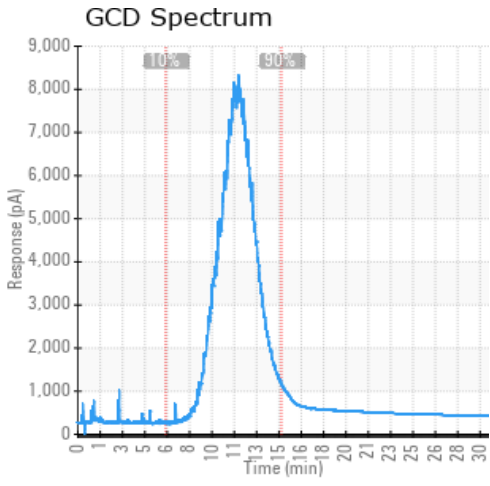
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/24/21	06/01/21	7.0y	Reactor outlet	414 / 212	11.5	29.8	0.05	0.091	687 / 364	781 / 416	893 / 478	1.79
04/14/20	04/28/20	5.3y	PUMP AND REACTOR	403 / 206	5.5	32.0	0.03	0.090	699 / 370	796 / 424	896 / 480	1.47
03/17/14	03/26/14	9.3y		415 / 213	17.2	30.2	0.062	0.138	687 / 364	791 / 422	880 / 471	2.85
12/14/10	12/21/10	6.0y	PUMP SUCTION	430 / 221	9	30.9	0.02	0.004	698 / 370	796 / 424	900 / 482	2.382
03/23/10	03/25/10	2.0y	CIRCULATING PUMP SUC	397 / 203	25	30.4	0.13	0.025	691 / 366	786 / 419	877 / 469	2.761
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	
05/24/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	
04/14/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
03/17/14	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	24	1
12/14/10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	24	0	
03/23/10	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	34	1	
<b>Baseline Data</b>			0	0						0		0	0						0				270		

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



Historical Comments	
04/14/20	All fluid measurements in great condition. Continue to use product as normal and resample a next scheduled interval.
03/17/14	Sample appears to be suitable for continued operation. Sample at next normal interval.
12/14/10	The fluid appears to be in good condition. The viscosity and flash point are in line with fresh oil. Overall the fluid is suitable for further use.
03/23/10	Results are consistent with previous history. The oil is suitable for further use and we recommend re-sampling in 6-9 months

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