

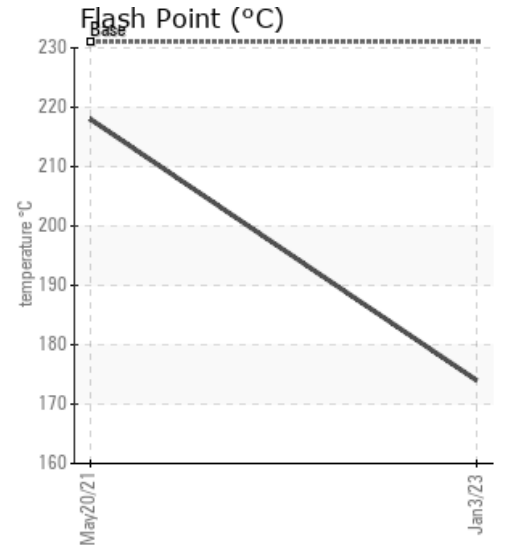
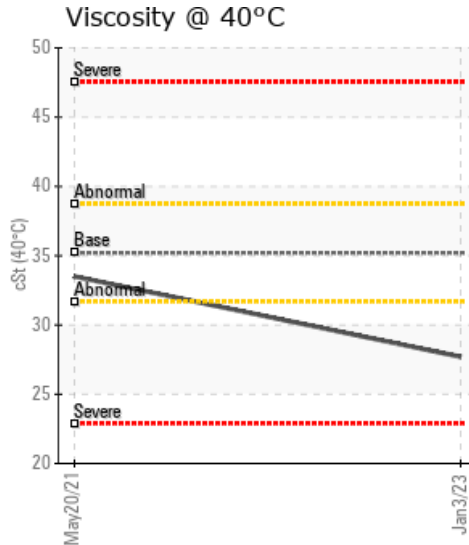
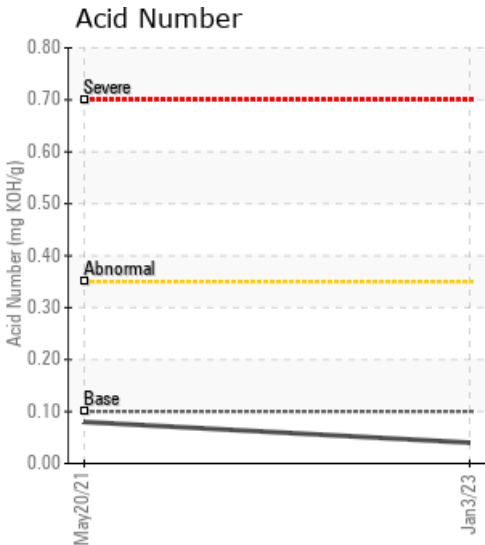
LINE 2

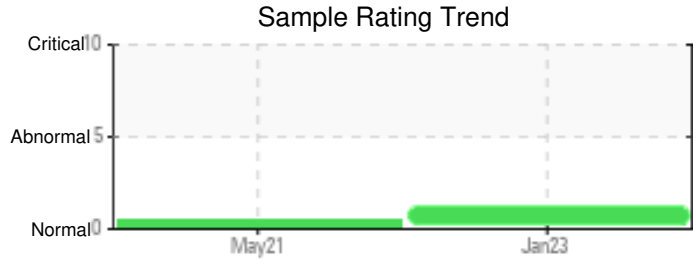
Customer: PTRHTF10164	System Information	Sample Information
Malarkey Roofing 3400 S. Council Rd OKLAHOMA CITY, OK 73179 US Attn: MALARKEY ROOFING Tel: (405)261-6900 E-Mail: bdaverede@malarkeyroofing.com	System Volume: 3500 gal Bulk Operating Temp: 565F / 296C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: AMERICAN HEATING	Lab No: 02541174 Analyst: Garrett Bapp Sample Date: 01/03/23 Received Date: 02/23/23 Completed: 03/10/23 Garrett Bapp Garrett.Bapp@HFSinclair.com

Recommendation: System is in overall good health. Viscosity is slightly lower than base line along with a lower than desirable flash point indicating thermal degradation is occurring. Recommend to vent system and sweeten system with 30% new oil. Resample in 1 year.

Comments: COC Flash Point is abnormally low. Visc @ 40°C is abnormally low.

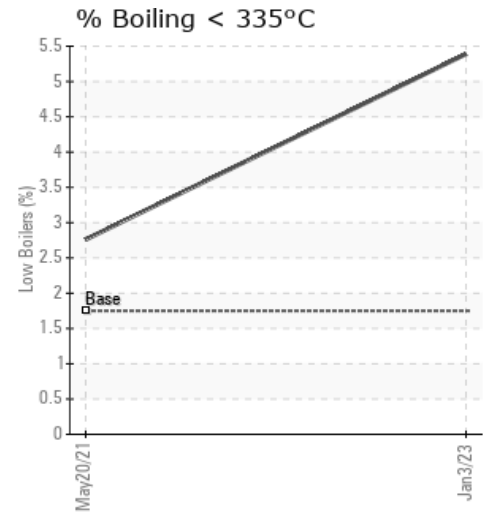
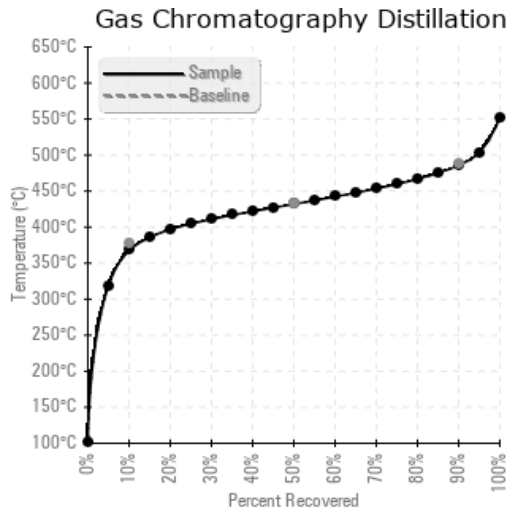
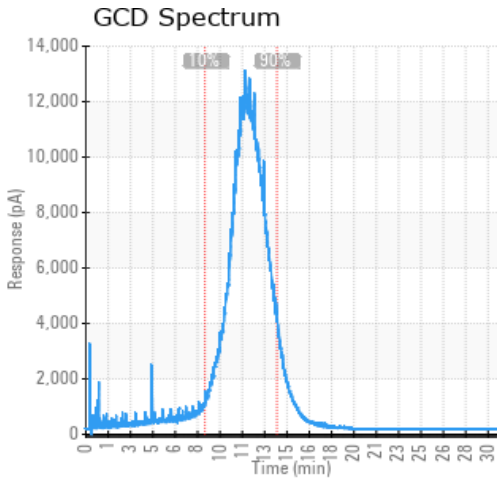
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/03/23	02/23/23		before pump	345 / 174	0.00	27.7	0.04	0.110	694 / 368	809 / 432	907 / 486	5.39
05/20/21	05/28/21			424 / 218	14.7	33.5	0.08	0.130	704 / 373	797 / 425	924 / 495	2.76
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	
01/03/23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	
05/20/21	15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	41	0
Baseline Data			0	0						0		0	0				0	0					280		

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



Historical Comments

05/20/21	No recommendations. New system and new fluid. Reference point.

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