

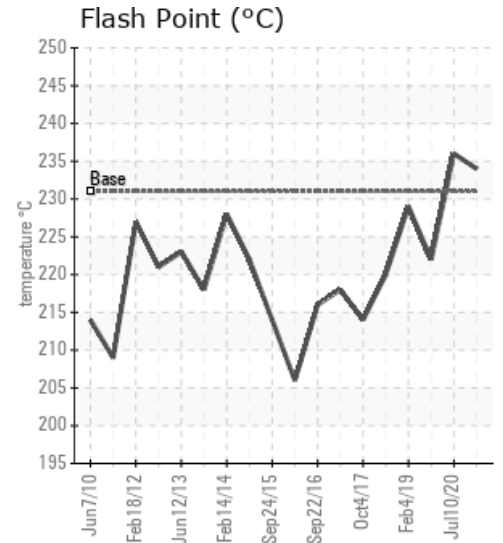
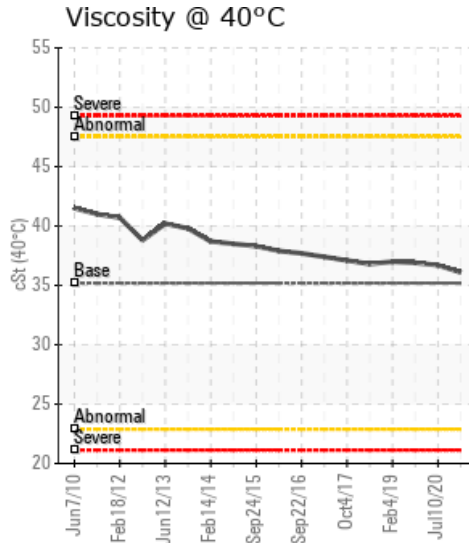
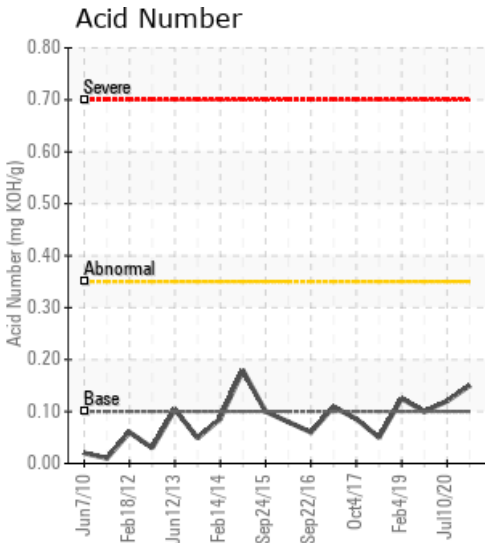
NORTH HEATER

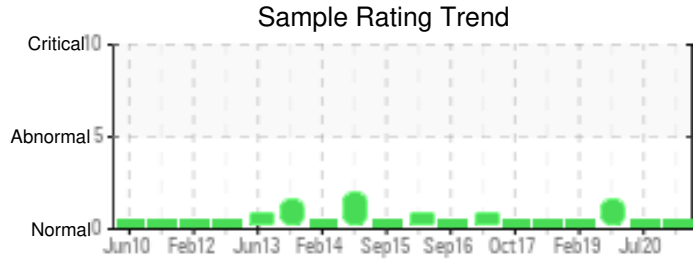
Customer: PTRHTF10043	System Information	Sample Information
MALARKY ROOFING PRODUCTS 3131 N. COLUMBIA BLVD PORTLAND, OR 97217 USA Attn: SCOTT MCDANIEL Tel: (503)283-1191 E-Mail: smcdaniel@malarkeyroofing.com	System Volume: 1500 gal Bulk Operating Temp: 620F / 327C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: AMERICAN HEATING	Lab No: 02404158 Analyst: Ron LeBlanc Sample Date: 01/28/21 Received Date: 02/17/21 Completed: 02/22/21 Ron LeBlanc Ronald.LeBlancSr@hollyfrontier.com

Recommendation: Sample appears within specifications. Sample again in 6 months.

Comments:

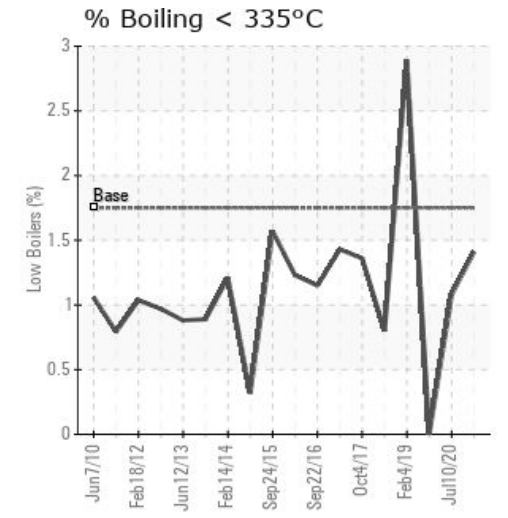
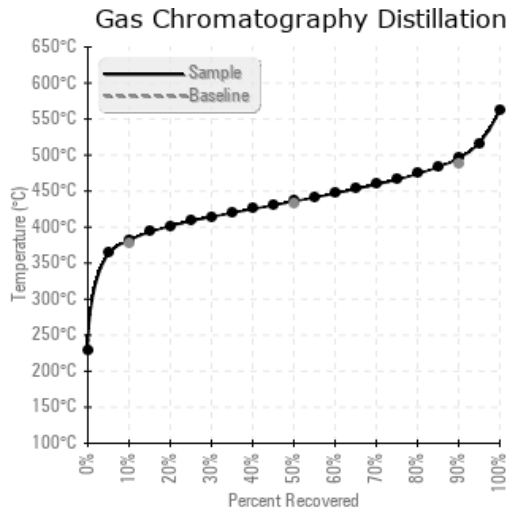
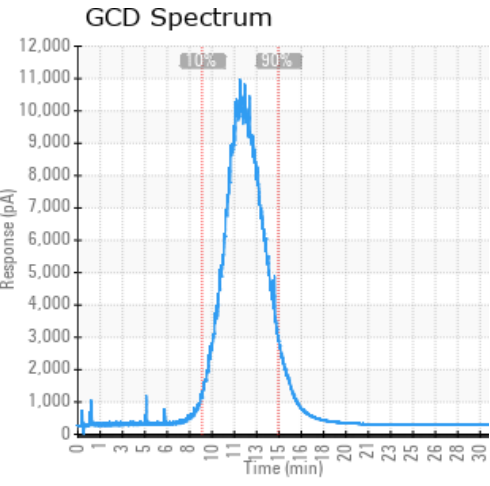
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/28/21	02/17/21	0.0y	North oil heater	453 / 234	29.1	36.1	0.15	0.049	719 / 382	816 / 436	924 / 496	1.41
07/10/20	07/23/20	0.0y	NORTH OIL HEATER	457 / 236	97.6	36.7	0.12	0.024	725 / 385	817 / 436	917 / 492	1.08
03/18/20	03/27/20	0.0y	NORTH HEATER AREA	432 / 222	48.4	36.9	0.10	0.037	749 / 398	827 / 442	930 / 499	0.00
02/04/19	02/15/19	0.0y	NORTH HOT OIL ROOM	444 / 229	48.8	37.0	0.125	0.027	686 / 363	789 / 420	896 / 480	2.89
07/26/18	08/08/18	0.0y	NORTH CECO ROOM	428 / 220	8.5	36.8	0.05	0.115	719 / 382	818 / 437	925 / 496	0.80
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	
01/28/21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0	
07/10/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	0
03/18/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85	0
02/04/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	0
07/26/18	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	94	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	
07/10/20	Sample appears normal. Re-sample at normal interval.
03/18/20	(GCD) 10% Distillation Point is marginally high. (GCD) 90% Distillation Point is marginally high. This sample was taken 13 months apart. Did the same person draw the sample. Take another sample in 3 months and make sure to purge oil from sample point before capturing the sample. (GCD) 10% Distillation Point is marginally high. (GCD) 90% Distillation Point is marginally high.
02/04/19	Sample appears normal. Re-sample in 4-6 months.
07/26/18	Sample appears normal. Pentane insoluble are elevated. Resample at normal interval and review the report for Pentane insoluble level.

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