

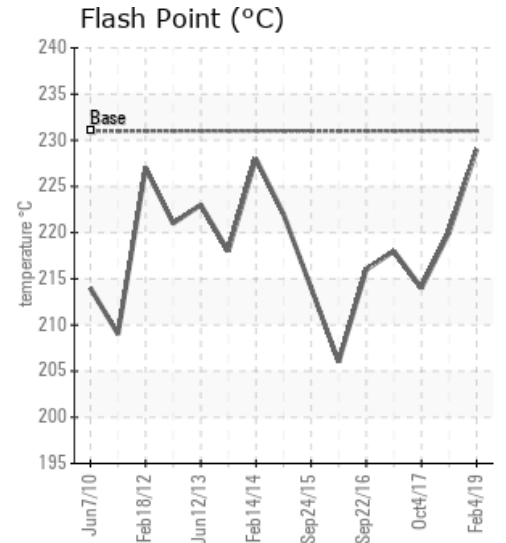
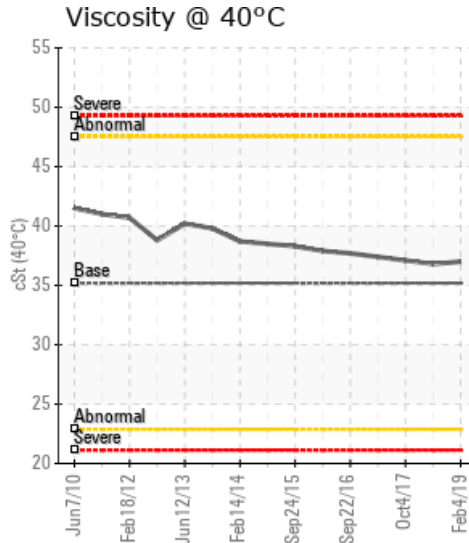
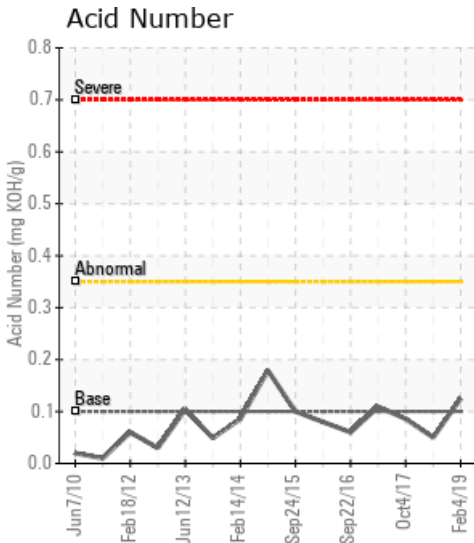
NORTH HEATER

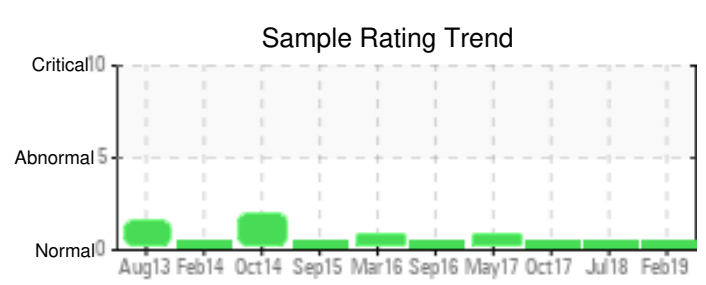
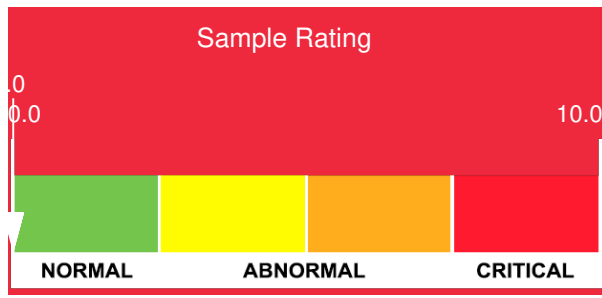
Customer: PTRHTF10043	System Information	Sample Information
MALARKY ROOFING PRODUCTS 3131 N. COLUMBIA BLVD PORTLAND, OR 97217 USA Attn: SCOTT MCDANIEL Tel: (503)283-1191 E-Mail: smcdaniel@malarkeyroofing.com	System Volume: 1500 gal Bulk Operating Temp: 620F / 327C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO HTF Make: AMERICAN HEATING	Lab No: 02268195 Analyst: Ron LeBlanc Sample Date: 02/04/19 Received Date: 02/15/19 Completed: 02/20/19

Recommendation: Sample appears normal. Re-sample in 4-6 months.

Comments:

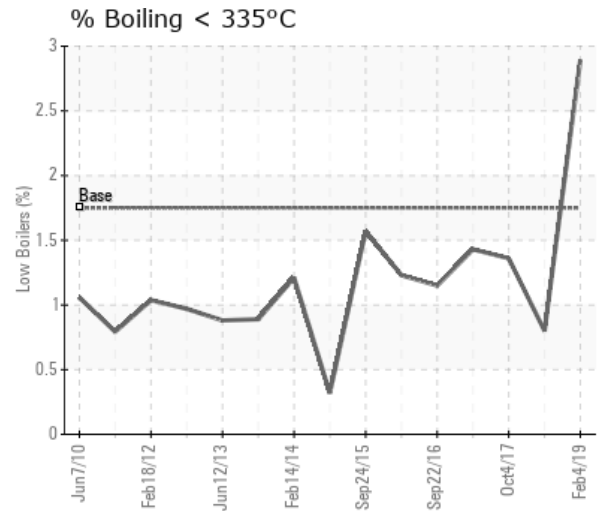
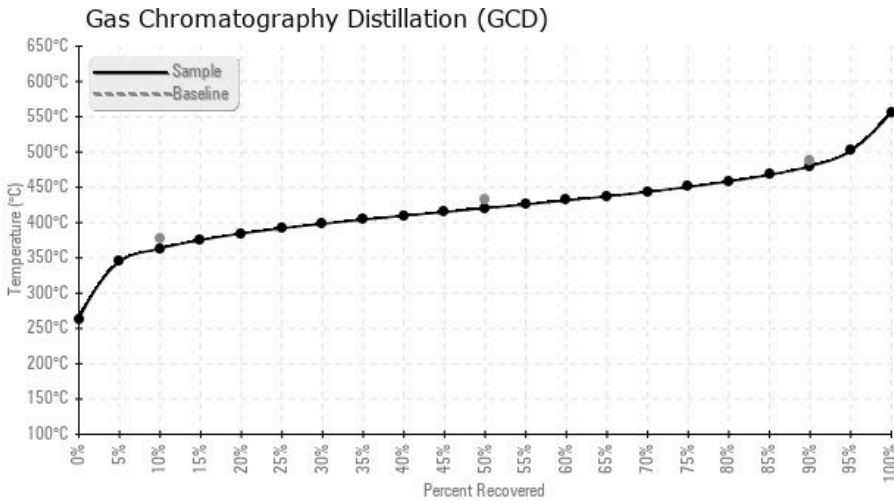
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/04/19	02/15/19	0y	NORTH HOT OIL ROOM	444 / 229	48.8	37.0	0.125	0.027	686 / 363	789 / 420	896 / 480	2.89
07/26/18	08/08/18	0y	NORTH CECO ROOM	428 / 220	8.5	36.8	0.05	0.115	719 / 382	818 / 437	925 / 496	0.80
10/04/17	10/17/17	0y		417 / 214	14.9	37.1	0.086	0.041	715 / 380	818 / 437	926 / 497	1.36
05/20/17	06/05/17	0y	NORTH HEATER ROOM	424 / 218	93.3	37.4	0.109	0.034	714 / 379	820 / 438	941 / 505	1.43
09/22/16	10/04/16	0y	NORTH OIL HEATER RM	421 / 216	2.5	37.7	0.06	0.040	717 / 381	817 / 436	918 / 492	1.15
03/04/16	03/16/16	0y	NORTH CECO ROOM	403 / 206	8.5	37.9	0.08	0.080	715 / 380	818 / 436	929 / 498	1.23
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	
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	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	
10/04/17	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	0	
05/20/17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102	0	
09/22/16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	0	
03/04/16	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	128	0	
Baseline Data			0	0						0			0	0					0					280	

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



Historical Comments	
07/26/18	Sample appears normal. Pentane insoluble are elevated. Resample at normal interval and review the report for Pentane insoluble level.
10/04/17	Sample is normal. Resample at next scheduled interval.
05/20/17	(GCD) 90% Distillation Point is abnormally high. Water ppm has elevated significantly. Remove water and resample in 3 months. (GCD) 90% Distillation Point is abnormally high.
09/22/16	Sample is normal. Resample in 6 months.
03/04/16	Sample appears normal compared to past samples. Sample again in 6 months. (GCD) 90% Distillation Point is marginally high.

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