

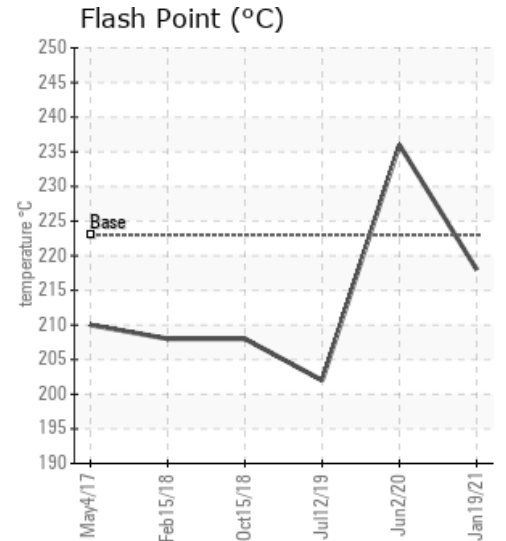
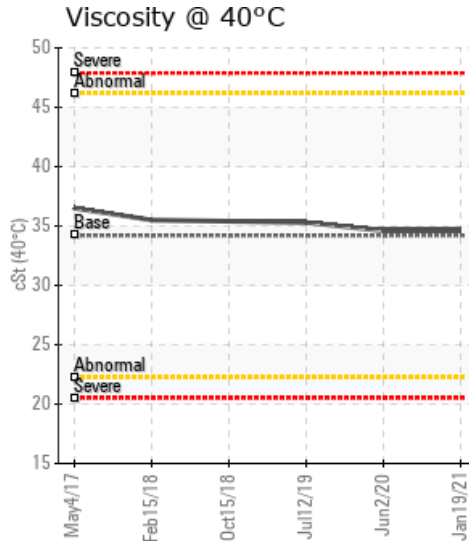
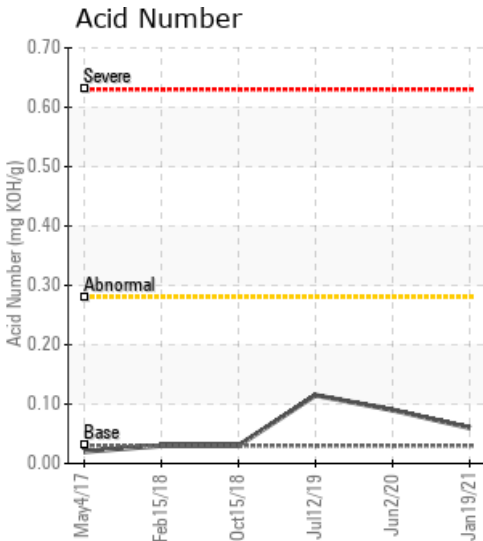
VAPOR POWER

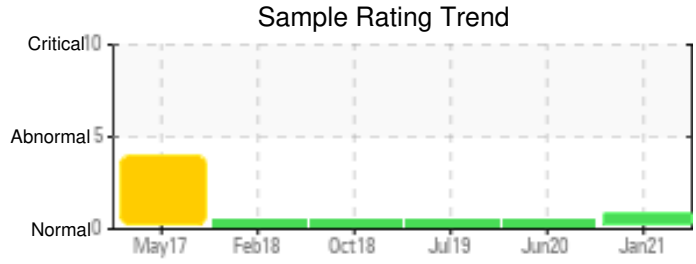
Customer: PTRHTF30020	System Information	Sample Information
IKO INDUSTRIES HAWKESBURY 1451 SPENCE ROAD HI-PARTS-HAWK YARD HAWKESBURY, ON K6A 3T4 Canada Attn: Roy Paquette Tel: (613)632-8581 E-Mail: roy.paquette@iko.com	System Volume: 600 gal Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: VAPOR POWER	Lab No: 02399425 Analyst: Pierre Castagne Sample Date: 01/19/21 Received Date: 01/22/21 Completed: 01/28/21 Pierre Castagne pierre.castagne@hollyfrontier.com

Recommendation: The High Boilers (GCD @90%) are marginally high. These could deposit in elbows and small lines. The Heat transfer oil is OK, for continuous use.

Comments: (GCD) 90% Distillation Point is marginally high.

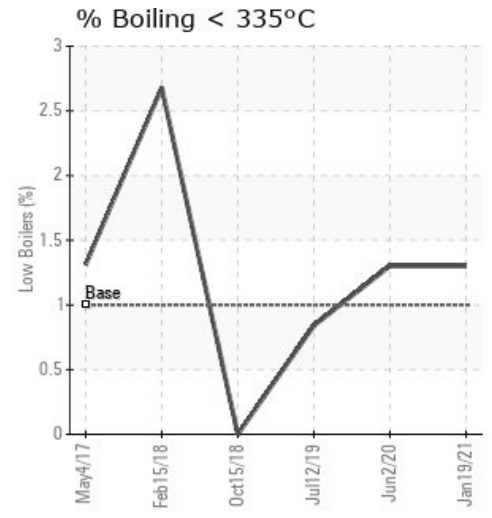
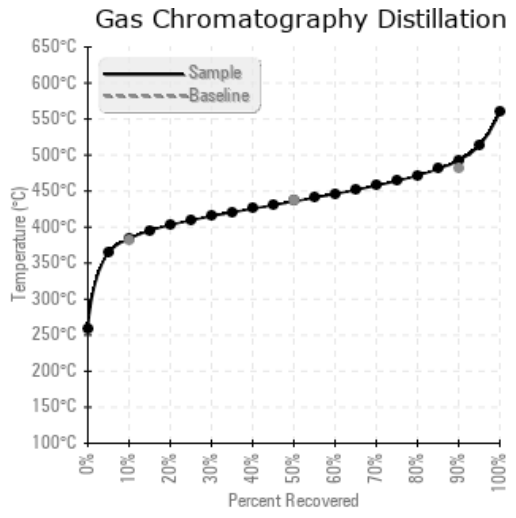
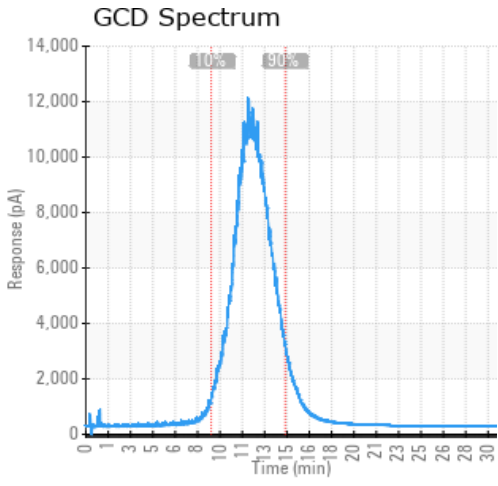
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/19/21	01/22/21	3y		424 / 218	8.8	34.6	0.06	0.145	723 / 384	816 / 436	918 / 492	1.30
06/02/20	06/11/20	3y	HOT OIL BOILER	457 / 236	12.3	34.6	0.09	0.119	723 / 384	816 / 436	915 / 491	1.30
07/12/19	07/18/19	1y		396 / 202	23.2	35.3	0.115	0.164	707 / 375	804 / 429	915 / 491	0.84
10/15/18	10/18/18	3y		406 / 208	16.2	35.4	0.03	0.040	726 / 385	805 / 429	909 / 487	0.00
02/15/18	02/22/18	243y		406 / 208	5.3	35.5	0.03	0.038	705 / 374	809 / 432	917 / 492	2.68
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
01/19/21	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
06/02/20	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
07/12/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0
10/15/18	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
02/15/18	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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



Historical Comments

06/02/20	Ok for continuous use
07/12/19	You have some carbon buildup (GCD @90%) is high.
10/15/18	Le fluide caloporteur est normal
02/15/18	High boilers (GCD @ 90%) increase viscosity, as a result carbon deposit settle in low flow/disturbance areas and foul heat exchange surfaces. Looking at the curve, it appears that a low viscosity oil mixture has occurred.

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.