

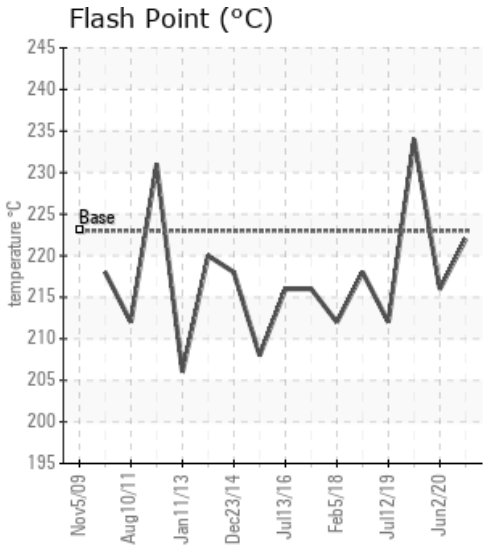
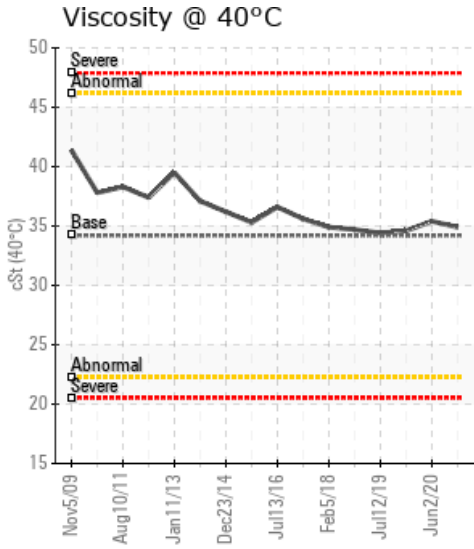
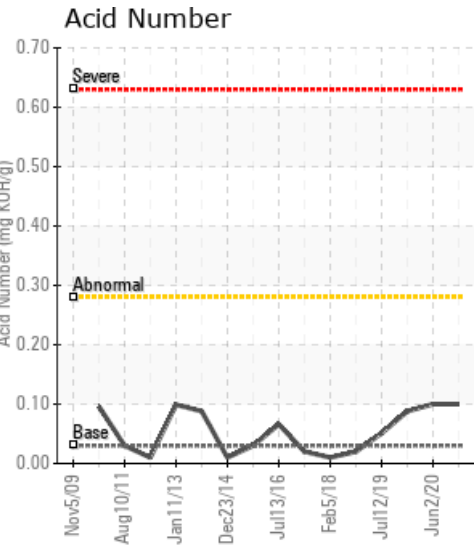
CLEAVER BROOKS (SURGE TANK SAMPLE)

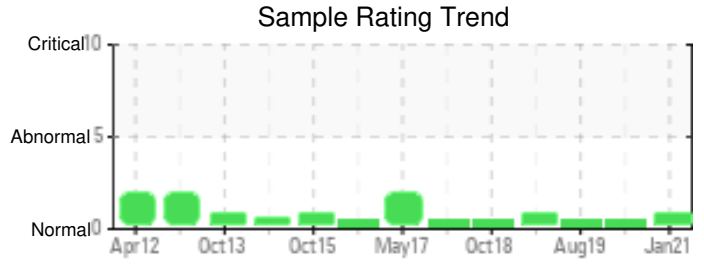
Customer: PTRHTF30020	System Information	Sample Information
IKO INDUSTRIES HAWKESBURY 1451 SPENCE ROAD HI-PARTS-HAWK YARD HAWKESBURY, ON K6A 3T4 Canada Attn: Roy Paquette Tel: (613)632-8581 E-Mail: roy.paquette@iko.com	System Volume: 10000 ltr Bulk Operating Temp: 491F / 255C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: CLEAVER BROOKS	Lab No: 02399427 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 high, The oil is OK, for continuous use.

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

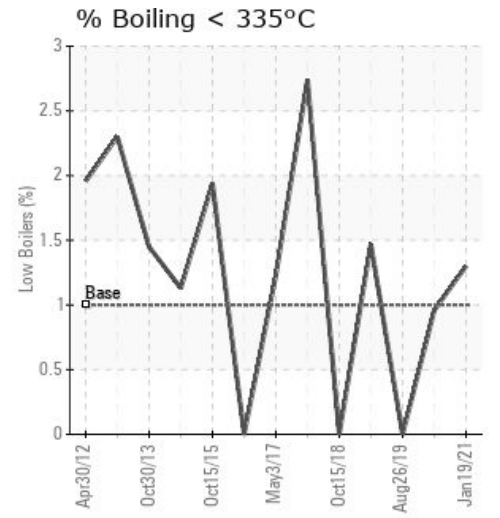
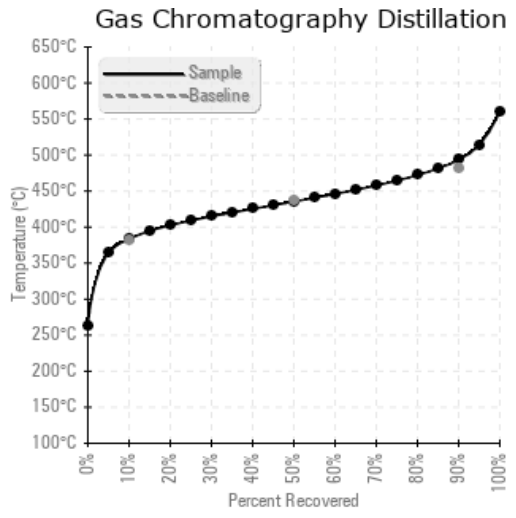
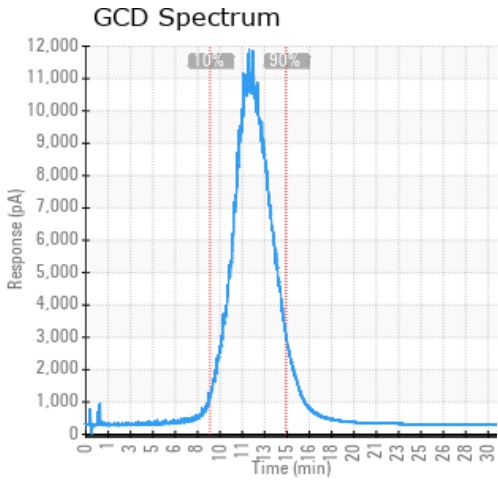
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/19/21	01/22/21	11y		432 / 222	3.3	34.9	0.10	0.127	722 / 383	816 / 436	920 / 493	1.30
06/02/20	06/11/20	10y	HOT OIL SYSTEM	421 / 216	18.6	35.4	0.10	0.081	725 / 385	817 / 436	914 / 490	0.96
08/26/19	09/09/19	10y		453 / 234	10.8	34.6	0.088	0.124	711 / 377	795 / 424	890 / 477	0.00
07/12/19	07/18/19	10y		414 / 212	23.2	34.4	0.051	0.076	714 / 379	810 / 432	920 / 493	1.47
10/15/18	10/18/18	10y		424 / 218	16.4	34.7	0.02	0.028	727 / 386	810 / 432	914 / 490	0.00
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	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/02/20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/26/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07/12/19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/15/18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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.
08/26/19	We can see a very small trace of bitumen in the sample. The oil, is OK for continuous use, resample at the next sample date.
07/12/19	You have some carbon buildup (GCD@90%) are high. (GCD) 90% Distillation Point is marginally high.
10/15/18	Le fluide caloporteur est ok.

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