

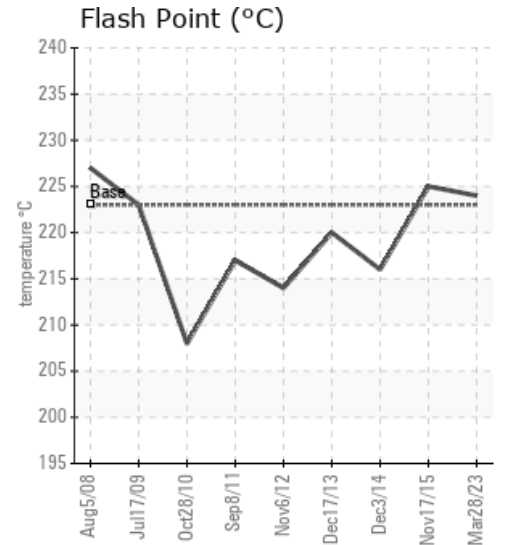
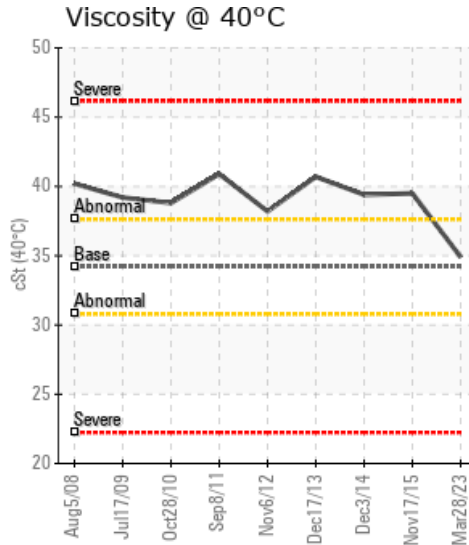
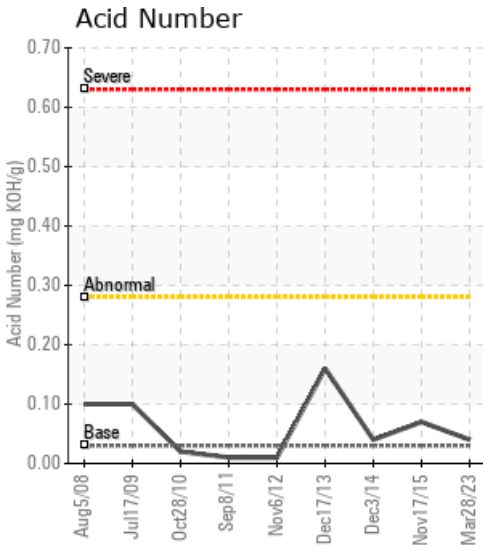
**B4**

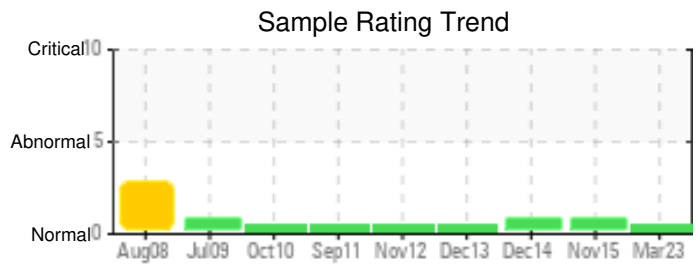
Customer: PTRHTF30018	System Information	Sample Information
IKO INDUSTRIES 71 ORENDA ROAD BRAMPTON, ON L6W 1V8 CA Attn: Mircea Feldiorean Tel: E-Mail: mircea.feldiorean@iko.com	System Volume: 30000 ltr Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02549454 Analyst: Yen Garcia Sample Date: 03/28/23 Received Date: 04/03/23 Completed: 05/09/23 Yen Garcia yen.garcia@HFSinclair.com

Recommendation: Recommendation: Routine Monitoring - no action required at this time. Resample again in 12 months.

Comments:

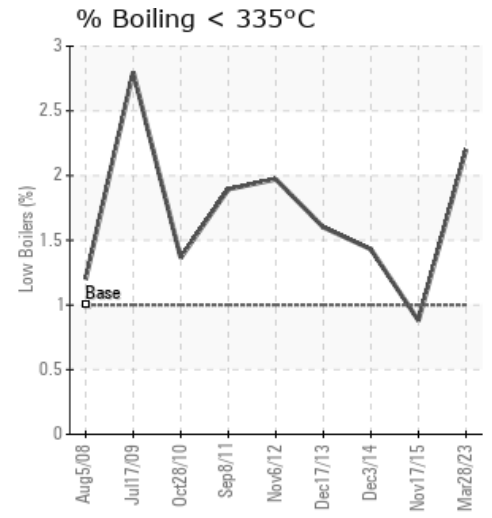
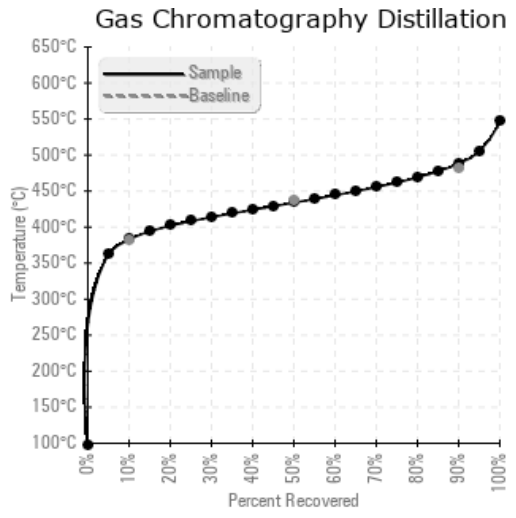
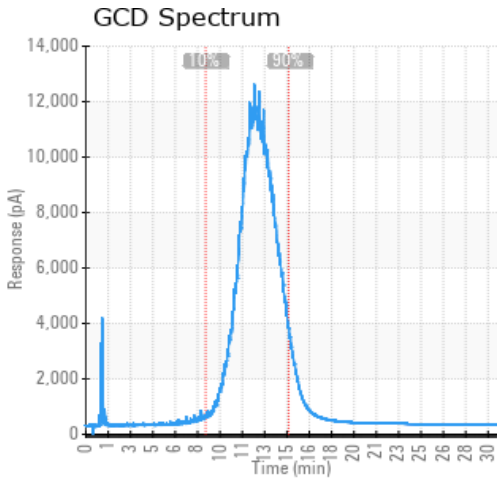
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
03/28/23	04/03/23	30600.0y		435 / 224	25.4	34.9	0.04	0.105	721 / 383	813 / 434	911 / 488	2.20
11/17/15	11/18/15	8.0y	BULK SYSTEM PUMP	437 / 225	5.8	39.5	0.07	0.169	720 / 382	823 / 439	923 / 495	0.88
12/03/14	12/03/14	0.0y	B4 ASPHACT TANK #16	421 / 216	2.7	39.4	0.04	0.122	719 / 381	827 / 442	921 / 494	1.43
12/17/13	12/19/13	0.0y		428 / 220	15.9	40.7	0.160	0.246	714 / 379	821 / 439	909 / 487	1.60
11/06/12	11/09/12		SYSTEM B4	417 / 214	5	38.2	0.01	0.040	718 / 381	822 / 439	907 / 486	1.971
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
03/28/23	13	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/15	38	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	15	0
12/03/14	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
12/17/13	22	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	15	0
11/06/12	8	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	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	
11/17/15	Recommendation: Routine Monitoring - 90% GCD noted, no action required at this time. Resample again in 12 months. (GCD) 90% Distillation Point is marginally high.
12/03/14	Routine Monitoring - 90% GCD noted, no action required at this time. Resample again in 12 months. (GCD) 90% Distillation Point is marginally high.
12/17/13	We are starting to see early signs of oxidation. The Acid Number jumped up and the GCD 90% is showing some heavier compounds in the oil. The viscosity rose slightly, which is another sign of mild oxidation. If budget permits in 2014, we suggest to perhaps replace 25% of the system to restore the physical properties just like fresh oil and reduce the oxidation level, so we can postpone an oil change by many more years.
11/06/12	The oil viscosity is slowly dropping to that of the post-2006 Petro-Therm while all other properties remain stable and no contamination appear to be present. Please keep re-sampling every year.

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