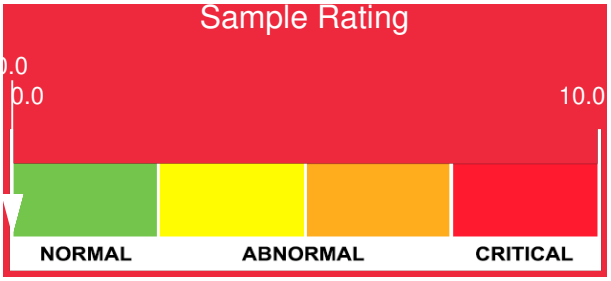
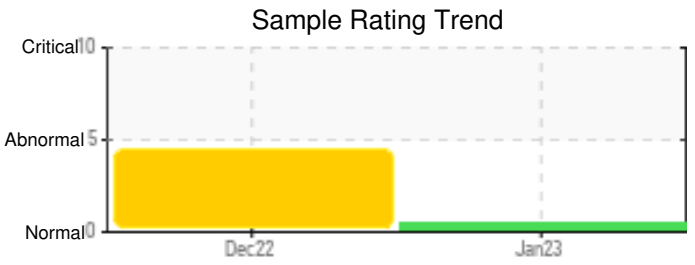




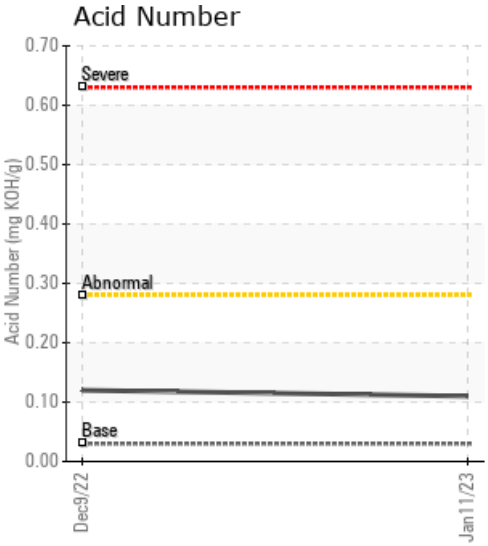
B2

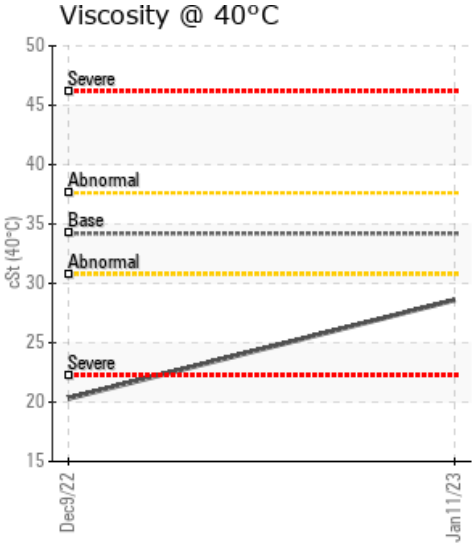
Customer: PTRHTF30018	System Information	Sample Information
IKO INDUSTRIES 71 ORENDA ROAD BRAMPTON, ON L6W 1V8 Canada Attn: Emerson Lucha Tel: E-Mail: emerson.lucha@iko.com	System Volume: 6800 gal Bulk Operating Temp: 575F / 302C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: VAPOR POWER	Lab No: 02533602 Analyst: Behshad Sabah Sample Date: 01/11/23 Received Date: 01/16/23 Completed: 01/24/23 Behshad Sabah behshad.sabah@HFSinclair.com

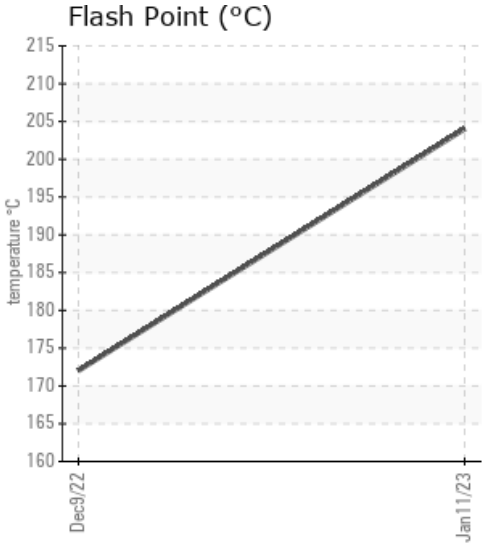
Recommendation: the 2nd sample shows much better oil viscosity and flash point. The oil condition is acceptable-to-good condition. if IKO increases the operating temperature, the better practice would be changing to oil to a more robust product which can handle higher film and bulk temperatures. to increase the life of the oil , you can keep the system running at lower temperature if possible for production.

Comments:

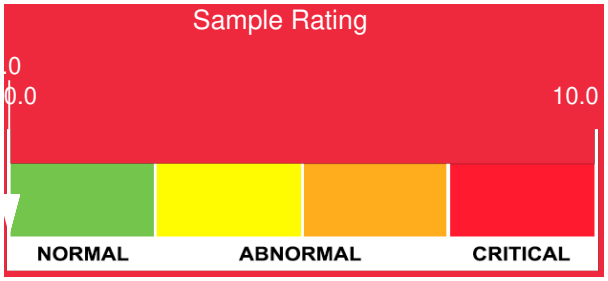
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/11/23	01/16/23	14800.0h		399 / 204	2.0	28.6	0.11	0.045	683 / 362	811 / 433	917 / 492	6.41
12/09/22	12/12/22	14000.0h	CIRCUIT H SUPPLY	342 / 172	6.6	20.3	0.12	0.092	654 / 345	806 / 430	914 / 490	8.44
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

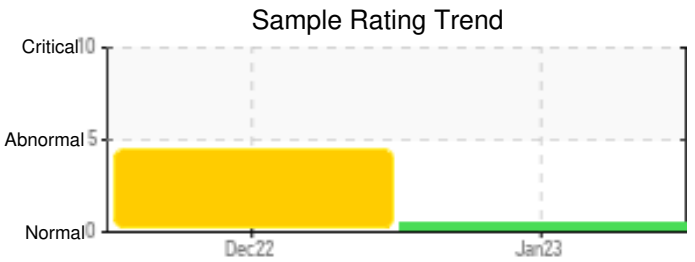






PETRO-CANADA LUBRICANTS

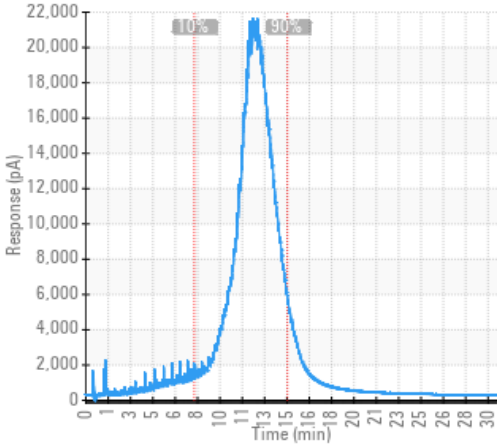




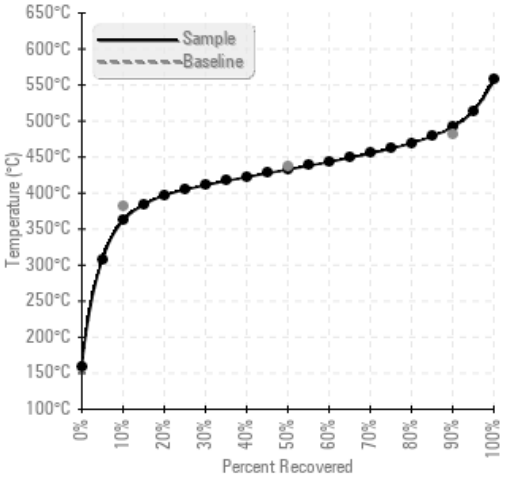
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
01/11/23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/09/22	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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

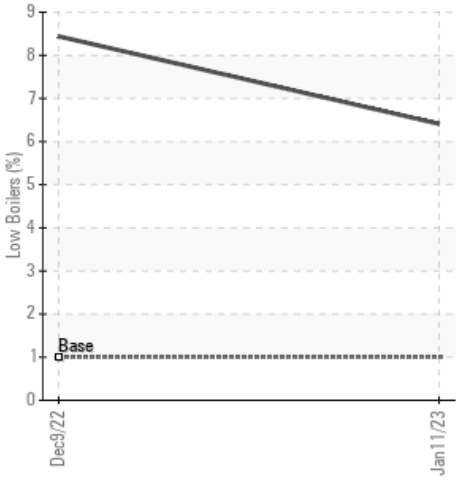
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

12/09/22	the oil viscosity is severely low. it might happened due to wrong oil addition (the volume must be significant) or the hydrocarbon breakdown to shorter and smaller hydrocarbon chains. Low viscosity led to much lower flash point and higher vapor pressure. if there is a leak, there might be big safety issue for the plant and workers.Low GCD at 10% confirms all these findings. Sweetening is recommended with the same product or switch to a product with higher oil film temperature. Visc @ 40°C is severely low. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.

