

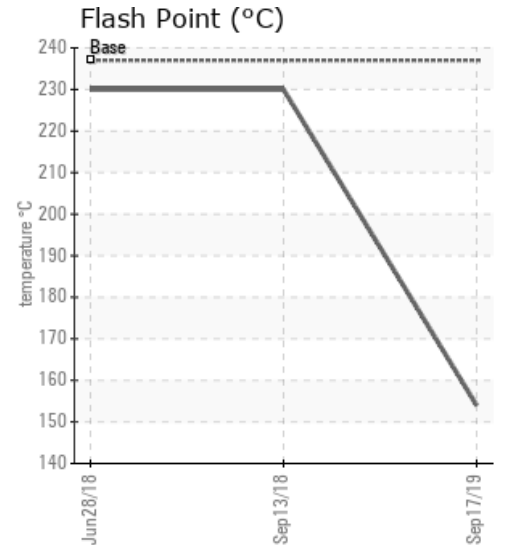
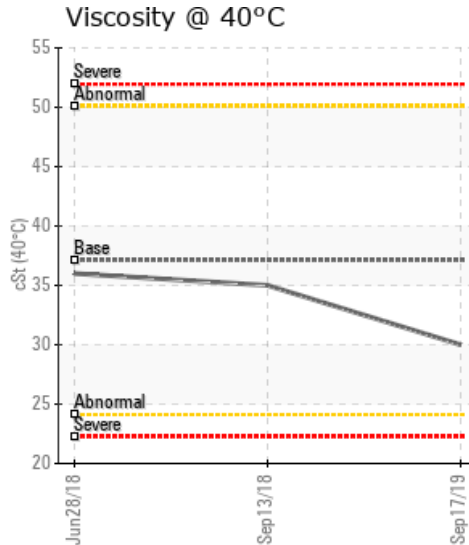
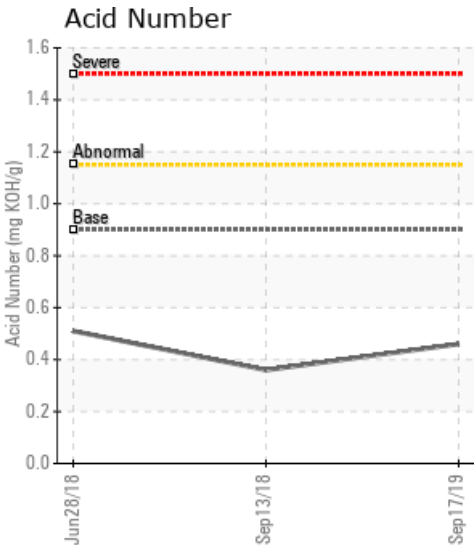
KORAT (THAILAND) - SUPPLY - FUTHER 1

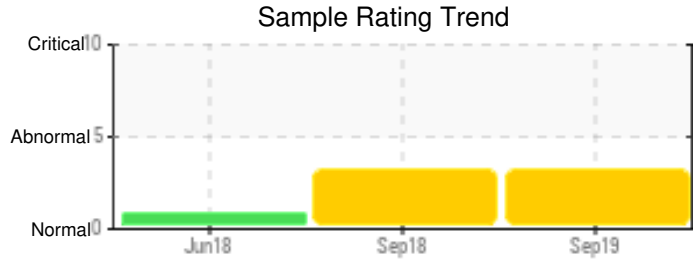
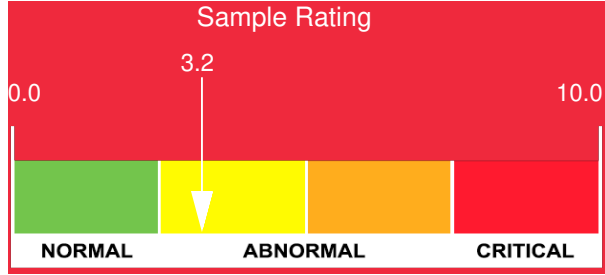
Customer: PTRHTF60010	System Information	Sample Information
SYNLUBE INTERNATIONAL CO LTD 76/1 MOO.7 THACHIN MUANG SAMUTSAKHON, 74000 THAILAND Attn: Kittisak Suthithanakom Tel: 6(681)850-1907 E-Mail: kittisak@synlube.co.th	System Volume: 20910 ltr Bulk Operating Temp: 554F / 290C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: HAVOL	Lab No: 02312786 Analyst: Philip Riley Sample Date: 09/17/19 Received Date: 10/04/19 Completed: 10/17/19

Recommendation: Flash Pt very low. If the product can be safely vented to remove light molecules this should be done and a sample taken afterwards to check if there is recovery of the flash point. If not then should consider an oil change

Comments: Water contamination levels are abnormally high. ppm Water contamination levels are abnormally high. COC Flash Point is severely low.

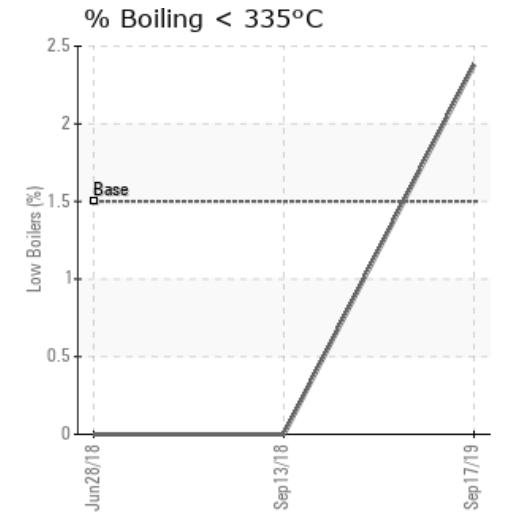
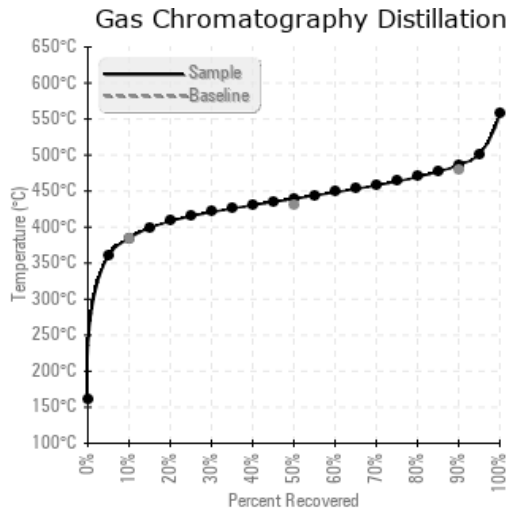
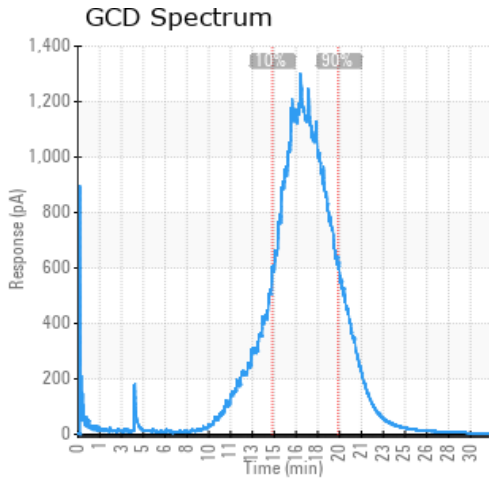
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/17/19	10/04/19	21m		309 / 154	613.3	30.0	0.460	0.097	724 / 385	823 / 439	907 / 486	2.38
09/13/18	10/02/18	6m		446 / 230	372.0	35.0	0.36	0.045	728 / 387	811 / 433	890 / 477	0.00
06/28/18	07/13/18	0m	SUPPLY	446 / 230	0.00	36.0	0.51	0.009	724 / 385	789 / 420	868 / 464	0.00
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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
09/17/19	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1
09/13/18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
06/28/18	0	0	0	0	0	0	0	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				230	

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



Historical Comments	
09/13/18	The current fluid has normal viscosity, flash point and TAN. The solid content is also very low. However, the water level is very high, even though there are no safety concerns, I still recommend to trouble-shoot how the large amount of the water went into the system. Or the sample was just a bad sample. Please flush the sampling line/port well before taking the real samples. Please continue to run this fluid and take one sample in 6 months. Water contamination levels are marginally high.
06/28/18	The current fluid (with 8 months operation) has a normal viscosity, flash point, acid number and distillation points. There is minimum solids or water in the fluid. Please continue to run the fluid and take a sample in 12 months.

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