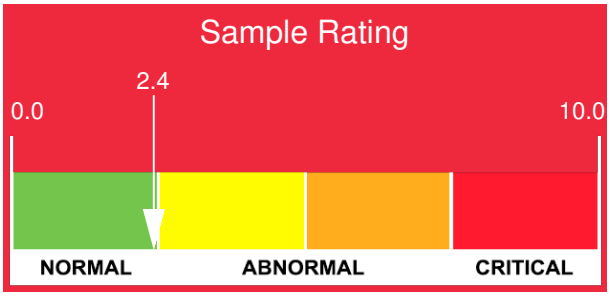
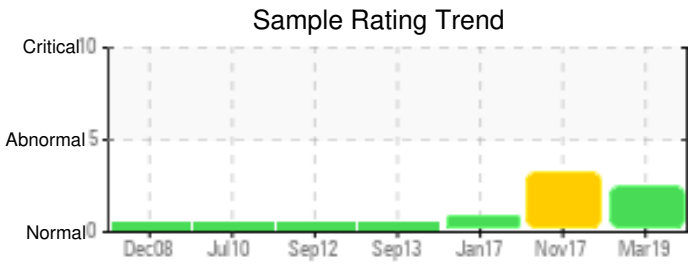
PETRO-CANADA LUBRICANTS





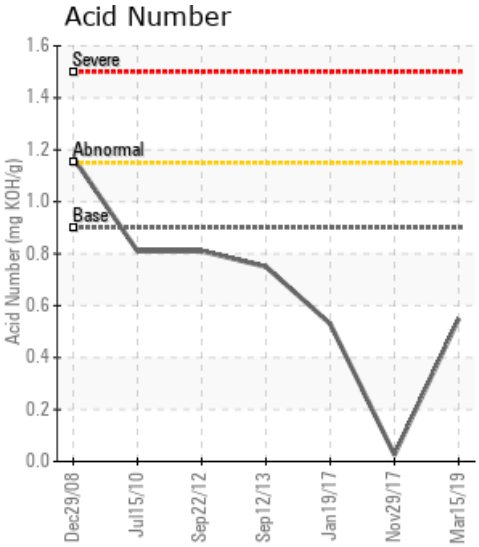
WANSON TPC 450 LN

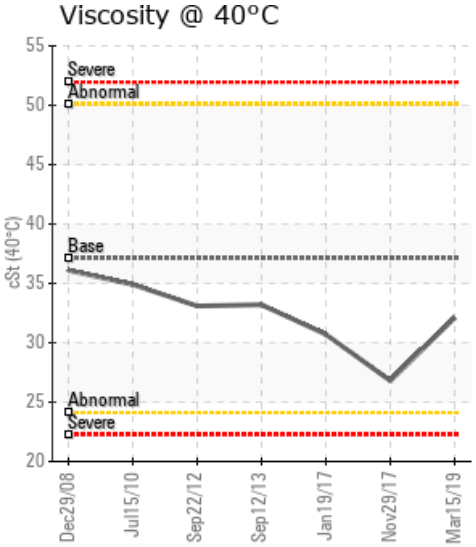
Customer: PTRHTF40044	System Information	Sample Information
NorthSeafood Netherlands Stortemelk 12-14 8321 EE Urk, Netherlands Attn: Wilbert Snijers Tel: E-Mail: w.snijers@klt.nl	System Volume: 400 ltr Bulk Operating Temp: 270F / 132C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: WANSON	Lab No: 02274595 Analyst: Philip Riley Sample Date: 03/15/19 Received Date: 03/21/19 Completed: 03/25/19

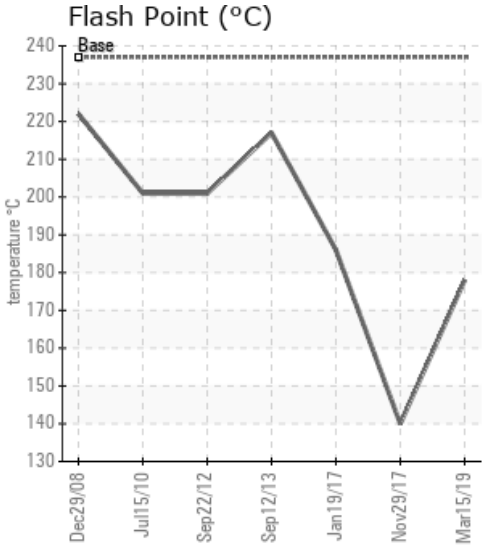
Recommendation: Iron levels high and maybe a result of some wear, please investigate. Phospohorus levels untypical for this fluid (PURITY FG HTF), has an alternative product been used to top up the system in error? COC recovered from previous sample albeit it still low. Pentane insoluble showing deterioration in the fluid also

Comments: Iron ppm levels are abnormal. Pentane Insolubles levels are abnormally high. COC Flash Point is abnormally 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	%
03/15/19	03/21/19	10y		352 / 178	53.6	32.1	0.55	0.527	688 / 365	805 / 429	893 / 479	4.43
11/29/17	12/05/17	9y		284 / 140	7.0	26.8	0.026	0.108	665 / 352	804 / 429	918 / 492	7.11
01/19/17	01/27/17	8y		367 / 186	15.8	30.7	0.53	0.030	703 / 373	811 / 433	899 / 482	2.64
09/12/13	10/10/13	5y		423 / 217	23.5	33.2	0.75	0.092	708 / 375	814 / 435	892 / 478	2.74
09/22/12	09/25/12	2y	NA	394 / 201	39	33.1	0.81	0.107	709 / 376	809 / 432	893 / 478	2.534
07/15/10	08/11/10	8y	NA	394 / 201	56	34.9	0.81	0.016	713 / 378	811 / 433	901 / 483	1.817
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5







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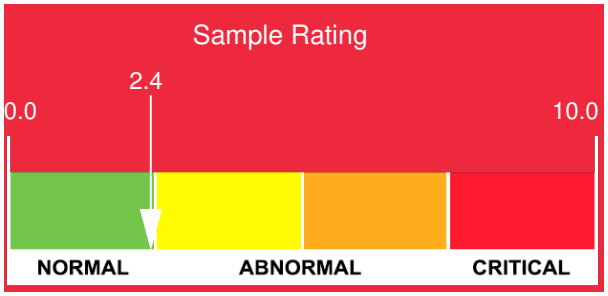
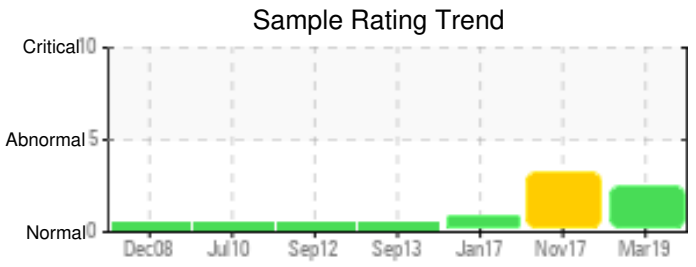
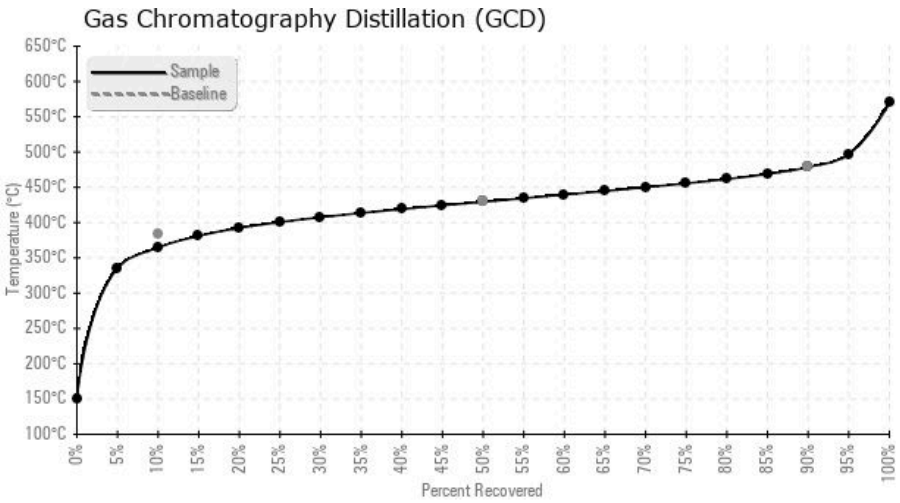
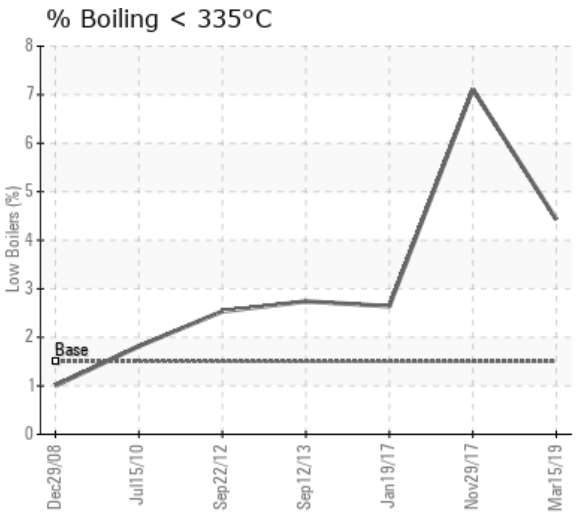




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
03/15/19	278	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	2	0	0	0	1	0	142	18
11/29/17	14	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
01/19/17	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
09/12/13	11	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	24	1
09/22/12	99	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	87	7
07/15/10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0
Baseline Data			0	0						0			0	0					0				230	

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





Historical Comments

11/29/17	COC Flash Point is severely low. (GCD) 90% Distillation Point is marginally high. (GCD) 10% Distillation Point is marginally low. Some low boilers are present and Venting is recommended. Otherwise the fluid is in good conditions. COC Flash Point is severely low. (GCD) 90% Distillation Point is marginally high. (GCD) 10% Distillation Point is marginally low.
01/19/17	Oil appears to be fit for further service. Suggest sample at next scheduled maintenance interval. COC Flash Point is abnormally low.
09/12/13	There is a very small proportion of low boilers present but this has not affected the fluid which appears to be in good condition and fit for further service. Suggest another sample in 12 months.
09/22/12	There appears to be some wear - investigate where wear could be occuring.
07/15/10	No action required at this time. Re-sample at normal interval.