

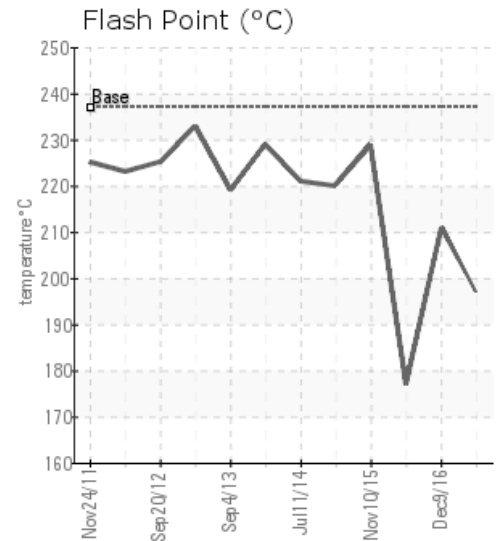
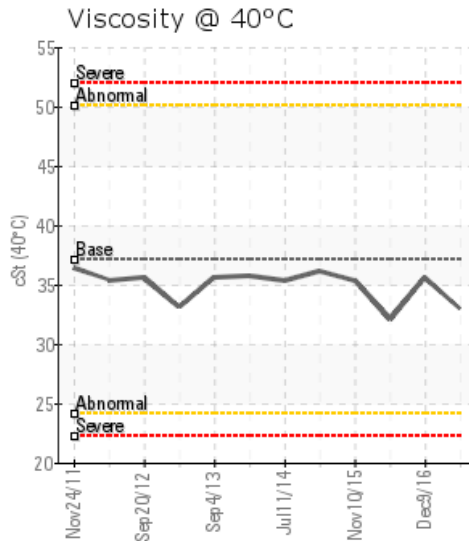
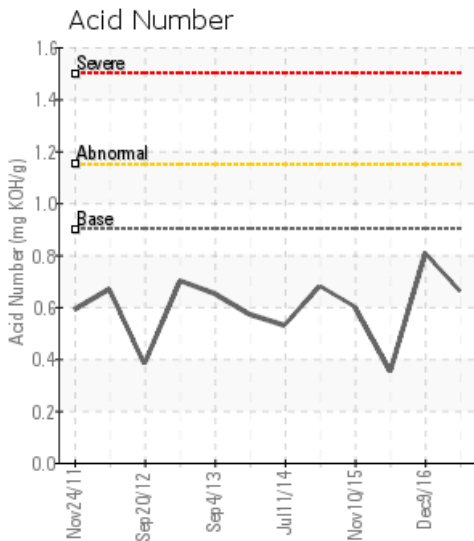
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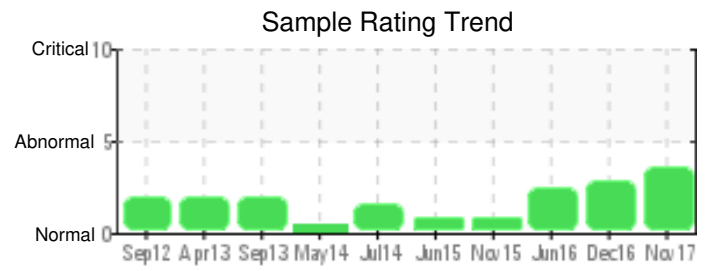
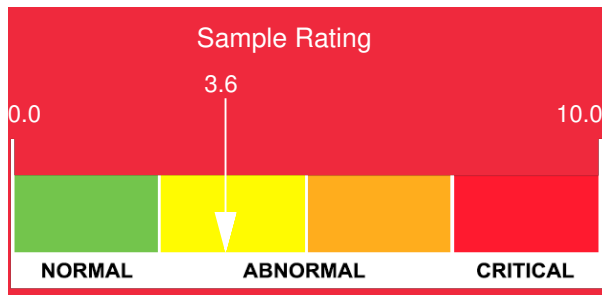
Customer: PTRHTF40043	System Information	Sample Information
MORA PRODUCTIE BV FREGATWEG 53 MAASTRICHT 6222NZ MAASTRICHT, 6222NZ Netherlands Attn: WILBERT SNIJERS Tel: E-Mail: w.snijers@klt.nl	System Volume: 800 ltr Bulk Operating Temp: 300F / 149C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make:	Lab No: 02184956 Analyst: Philip Riley Sample Date: 11/24/17 Received Date: 11/29/17 Completed: 12/11/17 To discuss this report contact Philip Riley at (440)124-4378171

Recommendation: Flash point slightly low and build up of iron particles showing high wear. Within condemnation limits on both parts but the fluid has significantly deteriorated since last sample. Similar degradation will require oil change in 12 months time unless filtration is used to try and reduce particles and wear, it may extend fluid life beyond the next 12 months

Comments: PQ levels are abnormal. Iron ppm levels are abnormal. COC Flash Point is marginally low.

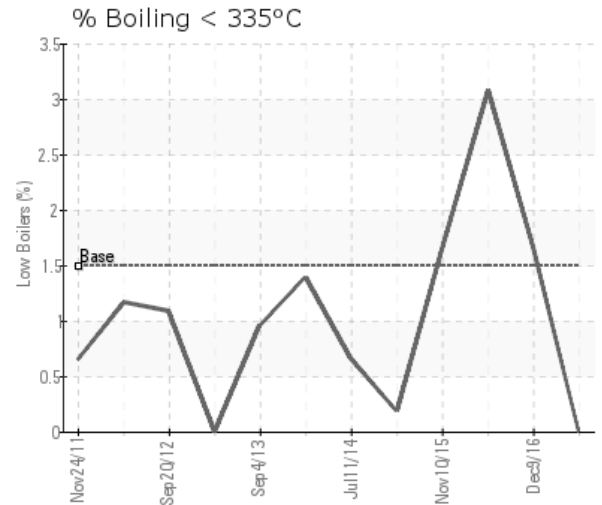
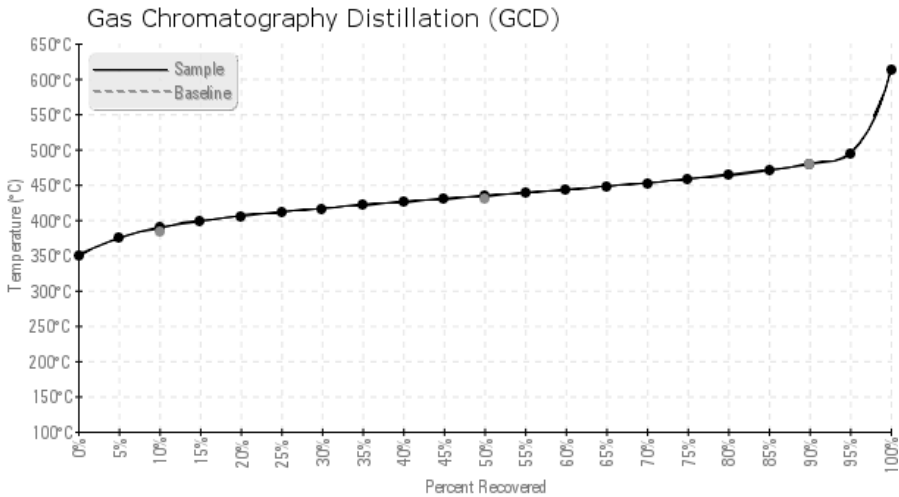
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/24/17	11/29/17	7y		387 / 197	30.7	33.0	0.660	0.211	732 / 389	813 / 434	895 / 479	0.00
12/09/16	12/16/16	6y		412 / 211	15.3	35.6	0.808	0.065	721 / 383	822 / 439	946 / 508	1.67
06/21/16	06/27/16	5y		351 / 177	101.5	32.1	0.35	0.098	676 / 358	774 / 412	870 / 466	3.08
11/10/15	11/23/15	5y	PTRHTF40043	444 / 229	13.2	35.4	0.60	0.064	714 / 379	808 / 431	889 / 476	1.64
06/02/15	06/05/15	4y		428 / 220	20.5	36.2	0.68	0.072	722 / 383	812 / 433	897 / 480	0.19
07/11/14	11/12/14	4y		430 / 221	48.7	35.3	0.53	0.120	724 / 385	809 / 432	892 / 478	0.66
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
11/24/17	271	1	0	0	1	0	0	0	0	0	2	1	0	0	0	0	2	0	0	0	0	0	137	13
12/09/16	139	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	90	9
06/21/16	11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	36	4
11/10/15	131	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	86	8
06/02/15	278	0	0	0	1	0	0	1	0	0	1	2	0	0	0	0	2	0	0	0	1	0	94	17
07/11/14	167	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	1	0	1	0	1	0	88	15
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	
12/09/16	Higher than expected levels of Iron reported. Try to detect where the Iron is originating from as this will cause the oil to deteriorate. Oil appears to be acceptable for further use at this time. Suggest sample at next scheduled maintenance interval. Iron ppm levels are abnormal. (GCD) 90% Distillation Point is severely high.
06/21/16	COC Flash Point tested twice: 177°C and 178°C. There are some low boilers present - remove low boilers if possible. Oil is fit for further service. Suggest sample at next scheduled maintenance interval. COC Flash Point is severely low. (GCD) 90% Distillation Point is marginally low.
11/10/15	Oil appears to be in good condition and fit for further service. Sample at next scheduled maintenance interval. (GCD) 90% Distillation Point is marginally low.
06/02/15	Oil is fit for further service at this time. Higher levels of Iron present which is unexpected. Suggest trying to find the cause of iron levels. Recommend submitting another sample within 6 months to trend wear metals. Iron ppm levels are abnormal.
07/11/14	Oil appears to be in good condition. Sample at next scheduled maintenance interval. Iron ppm levels are marginal. (GCD) 90% Distillation Point is marginally low.

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