

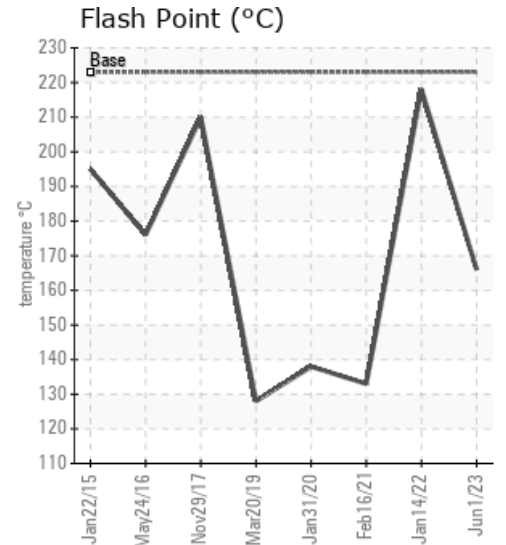
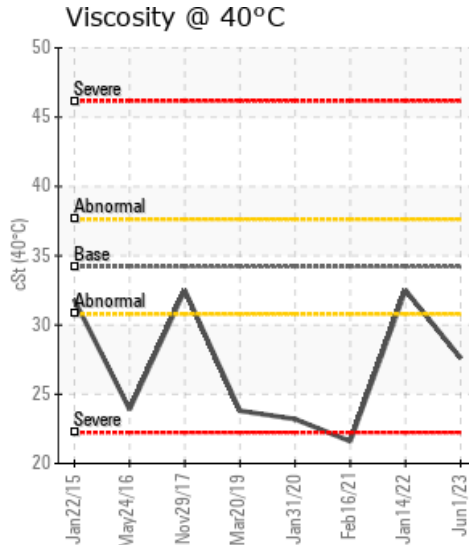
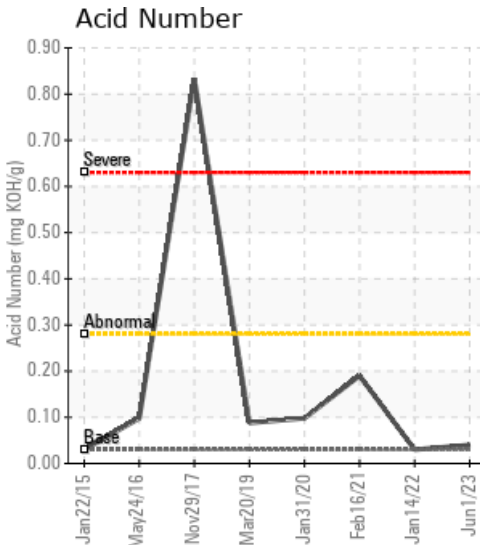
WANSON450 NEW SYSTEM

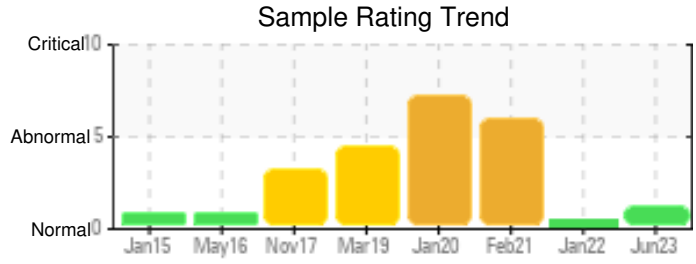
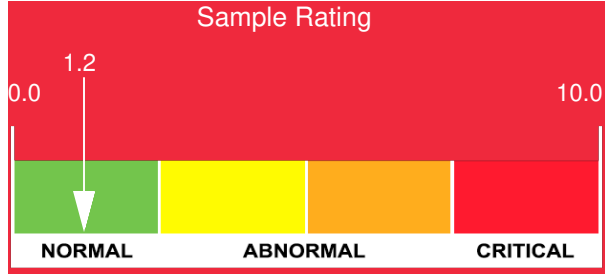
| Customer: PTRHTF40022 | System Information | Sample Information |
|---|---|--|
| MAYONNA BV NOORDGAT 1 FLEVOLAND URK, FLE NETHERLANDS Attn: Maintenance Manager Tel: E-Mail: | System Volume: 1400 ltr Bulk Operating Temp: 500F / 260C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: WANSON | Lab No: 02562801 Analyst: Bill Quesnel CLS,OMA II,MLA-III,LLA-I Sample Date: 06/01/23 Received Date: 06/07/23 Completed: 06/15/23 Bill Quesnel CLS,OMA II,MLA-III,LLA-I |

Recommendation: We recommend that you vent the expansion tank to remove low boilers which assists in restoring the flash point of the fluid. The fluid is suitable for further service. Resample at the next service interval to monitor.

Comments: COC Flash Point is abnormally low. Visc @ 40°C is abnormally low.

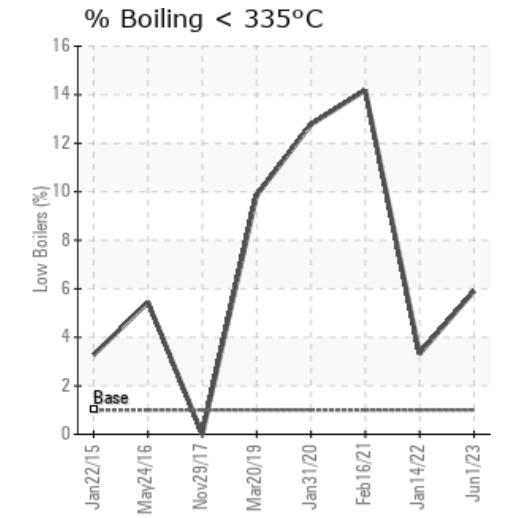
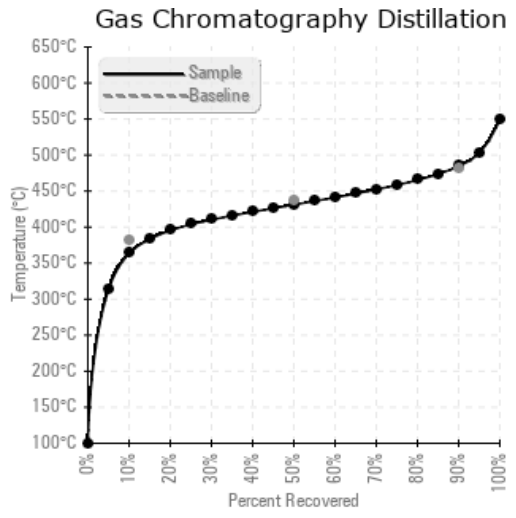
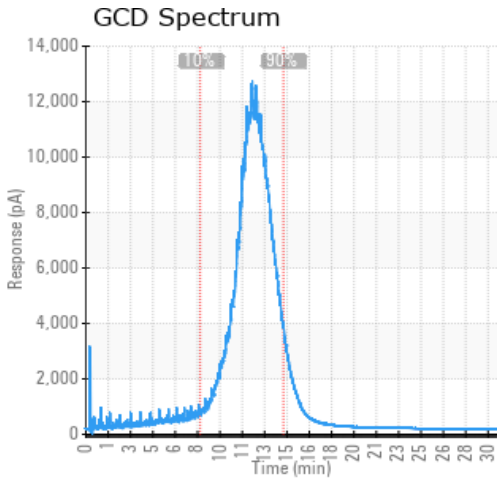
| Sample Date | Received Date | Fluid Age | Sample Location | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10% | GCD 50% | GCD 90% | GCD % < 335°C |
|----------------------|---------------|-----------|-----------------|-------------------|------------|------------------|-------------|--------|-----------|-----------|-----------|---------------|
| | mm/dd/yy | | | °F/°C | ppm | cSt | mg/KOH/g | %wt | °F/°C | °F/°C | °F/°C | % |
| 06/01/23 | 06/07/23 | 1.5y | | 331 / 166 | 40.8 | 27.6 | 0.04 | 0.096 | 686 / 364 | 808 / 431 | 904 / 485 | 5.90 |
| 01/14/22 | 01/20/22 | 0.0y | | 424 / 218 | 19.8 | 32.5 | 0.03 | 0.053 | 712 / 378 | 811 / 433 | 904 / 484 | 3.32 |
| 02/16/21 | 02/22/21 | 8.0y | | 271 / 133 | 19.4 | 21.6 | 0.19 | 0.207 | 568 / 298 | 784 / 418 | 913 / 489 | 14.18 |
| 01/31/20 | 02/11/20 | 7.0y | | 280 / 138 | 20.6 | 23.2 | 0.098 | 0.084 | 606 / 319 | 756 / 402 | 872 / 467 | 12.77 |
| 03/20/19 | 03/21/19 | 6.0y | 031519 | 262 / 128 | 8.8 | 23.8 | 0.088 | 0.078 | 631 / 333 | 787 / 419 | 909 / 487 | 9.85 |
| 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 |
|---------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|
| 06/01/23 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 01/14/22 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02/16/21 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01/31/20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03/20/19 | 2 | 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 analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



| Historical Comments | |
|---------------------|--|
| 01/14/22 | Resample at the next service interval to monitor. There is no indication of any contamination in the fluid. The condition of the fluid is suitable for further service. |
| 02/16/21 | Fluid shows signs of severe degradation and, again, recommend this fluid is changed, including a clean and flush. There is clear evidence of thermal cracking, and also a viscosity loss that would also support this somewhat. The flash point is severely low and has been for some time. The 'shape' of the GCD curve supports the thermal cracking. Recommend fluid change, clean, flush (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is abnormally high. Visc @ 40°C is abnormally low. |
| 01/31/20 | Fluid continues to deteriorate in rating. Viscosity very low showing formation of lighter molecules and flash point, although recovered slightly from last sample, remains severely low. Strong evidence of cracking on the distillation curve. Recommend fluid change out (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is abnormally high. (GCD) 90% Distillation Point is abnormally low. (GCD) 50% Distillation Point is marginally low. |
| 03/20/19 | COC Flash Pt extremely low. If venting (if can be done safely) does not recover the flash point, recommend change of oil. Viscosity is not consistent with Petrotherm HTF. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high. |

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