

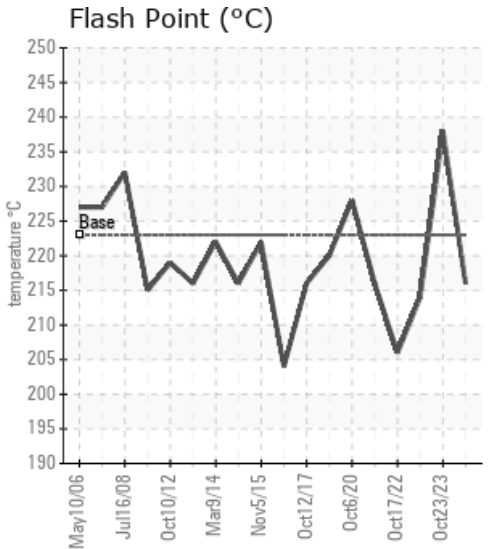
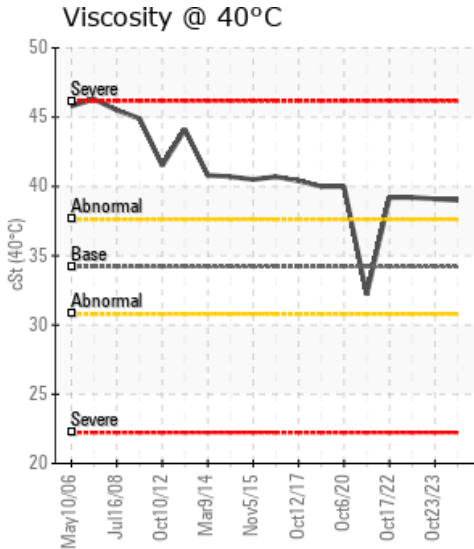
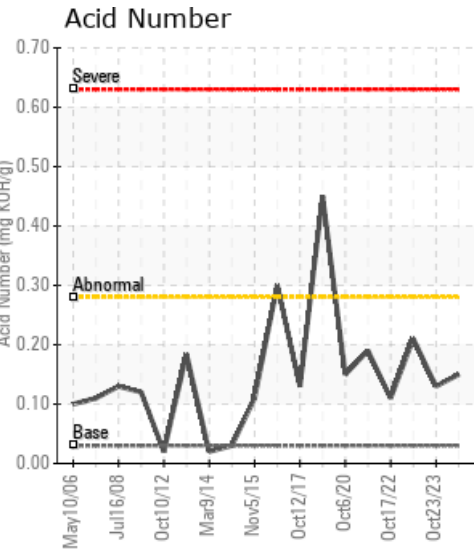
## WELLONS

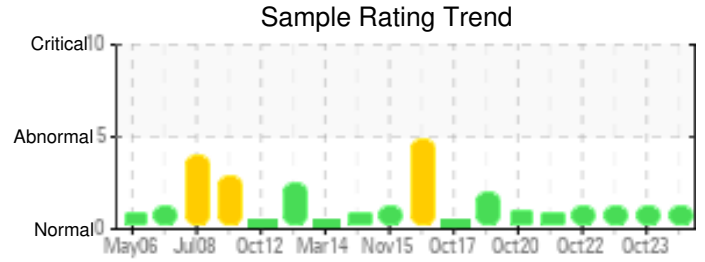
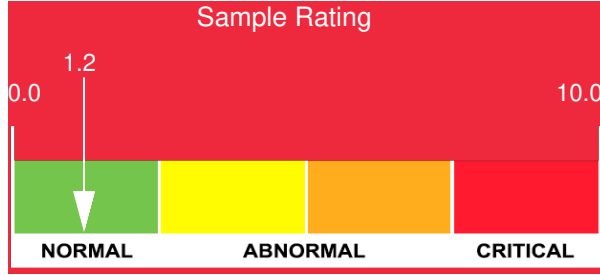
| Customer: PTRHTF20077   | System Information  | Sample Information   |
|---|---|--|
| TOLKO<br>180 HODGSON ROAD<br>WILLIAMS LAKE, BC V2G 2P6 CA<br>Attn: Ryan Bauer<br>Tel: (604)798-5891<br>E-Mail: ryan.bauer@tolko.com | System Volume: 0 ltr<br>Bulk Operating Temp: 254F / 123C<br>Heating Source:<br>Blanket:<br>Fluid: PETRO CANADA PETRO-THERM<br>Make: WELLONS | Lab No: 02630808<br>Analyst: Ray Rolston<br>Sample Date: 04/05/24<br>Received Date: 04/22/24<br>Completed: 04/25/24<br>Ray Rolston<br>Ray.Rolston@HFSinclair.com |

Recommendation: System is identified as Wellons, but age and system volume are not recorded. Operating temp is reported as 254 F (123 C). Oil age is reported as 35 years. The viscosity @ 40 C reflects the viscometrics of the previous formulation of Petro-Therm which had a higher fresh oil viscosity (43 cSt @ 40 C) compared with the current formulation (35.8 cSt @ 40 C). Acid Number at 0.15 mgKOH/g, COC Flash Point at 216 C and Pentane Insolubles (solids content) at 0.077 all indicate that the fluid is in good condition. Recommend re-sampling in 12 months to monitor the fluid's condition.

Comments: Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high.

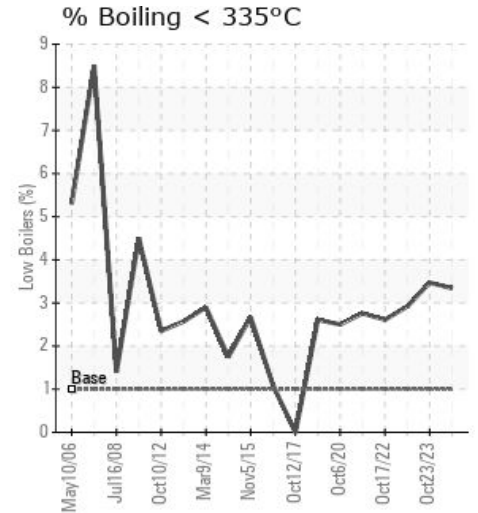
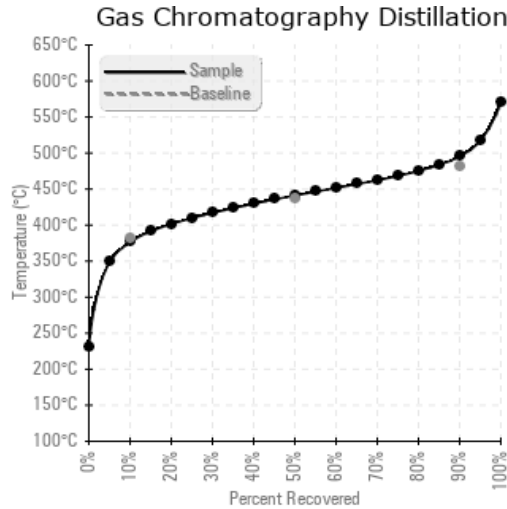
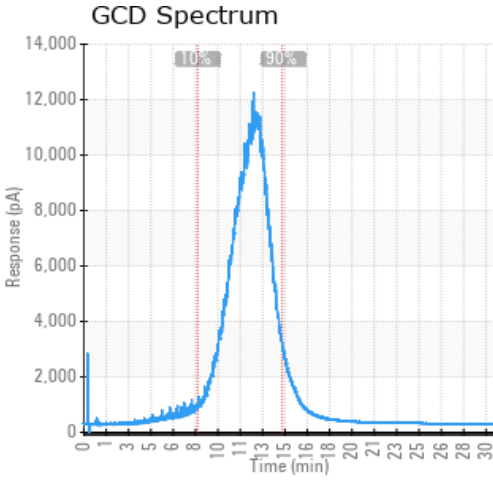
| Sample Date   | Received Date | Fluid Age | Sample Location     | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10%   | GCD 50%   | GCD 90%   | GCD % < 335°C |
|---------------|---------------|-----------|---------------------|-------------------|------------|------------------|-------------|--------|-----------|-----------|-----------|---------------|
|               | mm/dd/yy      |           |                     | °F/°C             | ppm        | cSt              | mg/KOH/g    | %wt    | °F/°C     | °F/°C     | °F/°C     | %             |
| 04/05/24      | 04/22/24      | 35.0y     |                     | 421 / 216         | 11         | 39.0             | 0.15        | 0.077  | 710 / 376 | 826 / 441 | 923 / 495 | 3.34          |
| 10/23/23      | 11/10/23      | 0.0y      | PUMP PRESSURE GAUGE | 460 / 238         | 22.0       | 39.1             | 0.13        | 0.054  | 708 / 376 | 825 / 440 | 922 / 494 | 3.47          |
| 06/13/23      | 06/22/23      | 0.0y      | PRESSURE G          | 417 / 214         | 11.5       | 39.2             | 0.21        | 0.203  | 713 / 378 | 826 / 441 | 921 / 494 | 2.92          |
| 10/17/22      | 11/11/22      | 30.0y     | expansion tank      | 403 / 206         | 0.00       | 39.2             | 0.11        | 0.152  | 717 / 380 | 827 / 442 | 920 / 494 | 2.61          |
| 04/19/22      | 05/16/22      | 30.0y     | circulation pump    | 421 / 216         | 25.1       | 32.2             | 0.19        | 0.103  | 716 / 380 | 828 / 442 | 925 / 496 | 2.76          |
| 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 |
|---------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|
| 04/05/24      | 3    | 0        | 0      | 0        | 2      | 0    | 0   | 0       | 0      | 0        | 0       | 0      | 0         | 0        | 0          | 0        | 0         | 0       | 0     | 0         | 0       | 0      | 0          | 0    |
| 10/23/23      | 5    | 0        | 0      | 0        | 2      | 0    | 0   | 0       | 0      | 0        | 0       | 0      | 0         | 0        | 0          | 0        | 0         | 0       | 0     | 0         | 0       | 0      | 0          | 0    |
| 06/13/23      | 7    | 0        | 0      | 0        | 3      | 0    | 0   | 0       | 0      | 0        | 0       | 0      | 0         | 0        | 0          | 0        | 0         | 0       | 0     | 0         | 0       | 0      | 0          | 1    |
| 10/17/22      | 4    | 0        | 0      | 0        | 2      | 0    | 0   | 0       | 0      | 0        | 0       | 0      | 0         | 0        | 0          | 0        | 0         | 0       | 0     | 0         | 0       | 0      | 0          | 0    |
| 04/19/22      | 11   | 0        | 0      | 0        | 6      | 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

|          |   |
|----------|---|
| 10/23/23 | The viscosity @ 40 C reflects the viscometrics of the previous formulation of Petro-Therm which had a higher fresh oil viscosity (43 cSt @ 40 C) compared with the current formulation (35.8 cSt @ 40 C). The Gas Chromatography Distillation (GCD) values % < 335 C and Initial Boiling Point reflect the presence of low boilers due to thermal cracking. All other inspections indicate that the Petro-Therm is suitable for continued use including low Acid Number and Pentane Insolubles (solids content). Recommend re-sampling in 6 months to monitor the fluid's condition. Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high. |
| 06/13/23 | The viscosity of the oil is 39.2 cSt @ 40 C, the same as the previous sample. In April 2022, it was reported as 32.2 cSt @ 40 C, and in 2020 it was 40.0 cSt, so I'd consider the April 2022 viscosity an anomaly. The GCD distillation results are good, but the AN (Acid Number) has increased to 0.21, and the Pentane Insolubles (solids content) has increased to 0.203 wt%. The fluid is suitable for continued use, but it is starting to show signs of aging and deterioration. Recommend sampling in 6 months to monitor. Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high.   |
| 10/17/22 | Viscosity at 39.2 cSt @ 40 C is slightly low but reflects a blend of the previous ISO VG 32 Petro-Therm formulation with the current ISO VG 46 formulation. The COC Flash Point at 206 C is showing a dropping trend, but it is still above the 150 C condemning guideline. Pentane Insolubles (solids) content of 0.152 wt% is below the condemning limit of > 0.5 wt%. All other inspections are normal. The oil is suitable for continued use and should be re-sampled in one year. Visc @ 40°C is abnormally high. (GCD) 90% Distillation Point is marginally high.   |
| 04/19/22 | Water content and Acid Number remain low and within an acceptable range. Viscosity at 40 C at 32.2 cSt is closer to fresh oil typical of 35.8 cSt vs. historic values. GCD 90% and FBP Distillation Points indicate the presence of high boilers. Pentane insolubles (sludge) content remains low at 0.103 wt%. Petro-Therm is suitable for continued use; re-sample in one year to monitor the oil's condition. (GCD) 90% Distillation Point is marginally high.   |

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