

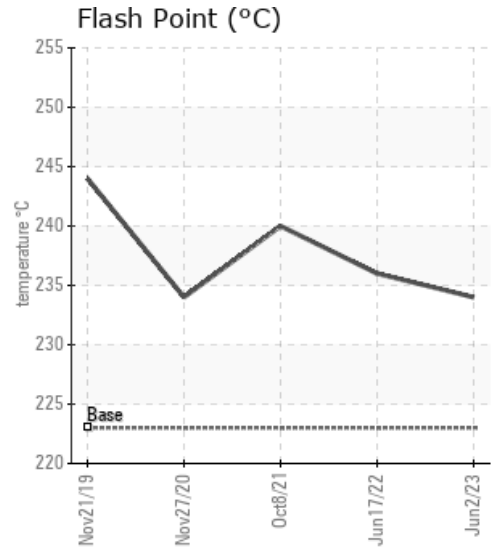
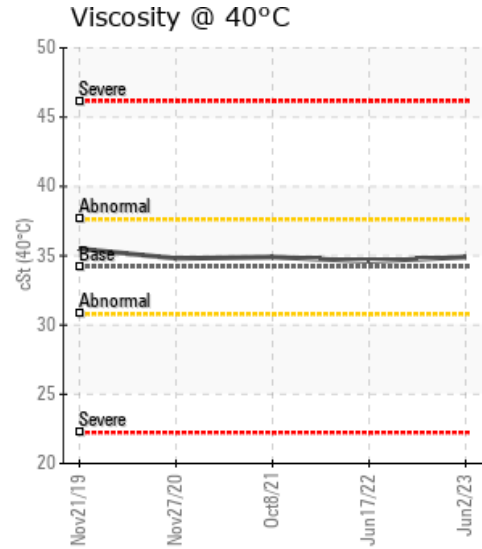
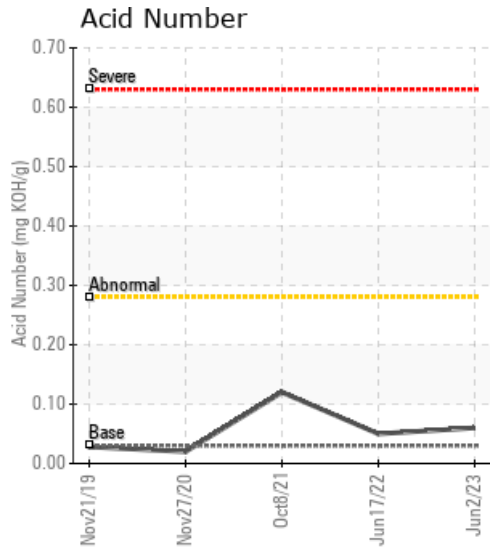
[Cenovus / LSD 6-20-49-18W5] H55001

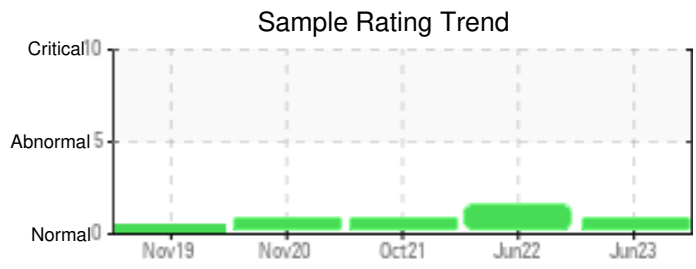
| Customer: PTRHTF20039 | System Information | Sample Information |
|---|--|--|
| BRENNTAG CANADA INC 3124-54TH AVENUE SE CALGARY, AB T2C 0A8 CA Attn: Matthew Kryska Tel: E-Mail: mkryska@brenntag.ca | System Volume: 37000 ltr Bulk Operating Temp: 417F / 214C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: ALCO | Lab No: 02570784 Analyst: Lyle Dach Sample Date: 06/02/23 Received Date: 07/18/23 Completed: 07/24/23 Lyle Dach lyle.dach@HFSinclair.com |

Recommendation: Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.

Comments: (GCD) 90% Distillation Point is marginally high.

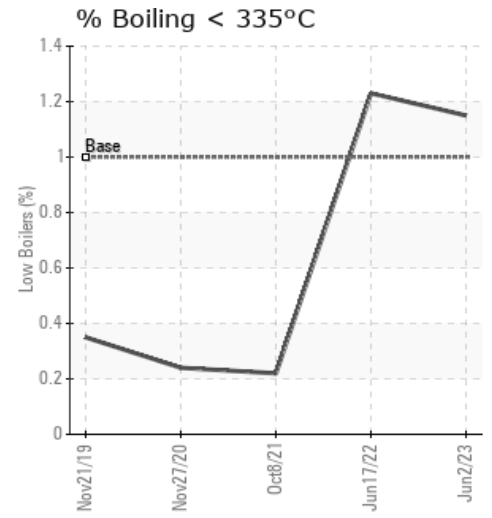
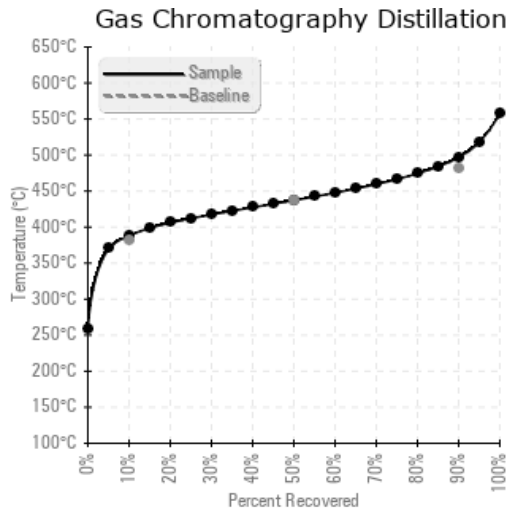
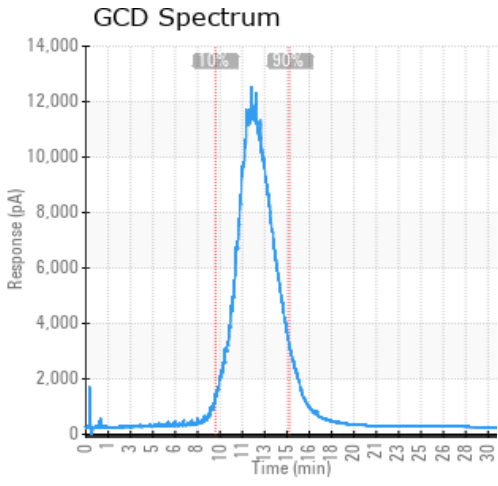
| Sample Date | Received Date | Fluid Age | Sample Location | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10% | GCD 50% | GCD 90% | GCD % < 335°C |
|---------------|---------------|-----------|----------------------|-------------------|------------|------------------|-------------|--------|-----------|-----------|-----------|---------------|
| | mm/dd/yy | | | °F/°C | ppm | cSt | mg/KOH/g | %wt | °F/°C | °F/°C | °F/°C | % |
| 06/02/23 | 07/18/23 | 48.0m | bef.slip stream fltr | 453 / 234 | 35.2 | 34.9 | 0.06 | 0.016 | 730 / 388 | 819 / 437 | 926 / 497 | 1.15 |
| 06/17/22 | 07/12/22 | 26.0m | Return line | 457 / 236 | 14.4 | 34.6 | 0.05 | 0.393 | 728 / 387 | 816 / 435 | 920 / 494 | 1.23 |
| 10/08/21 | 11/12/21 | 24.0m | F-5530-1 | 464 / 240 | 0.00 | 34.9 | 0.12 | 0.071 | 735 / 391 | 819 / 437 | 926 / 497 | 0.22 |
| 11/27/20 | 12/18/20 | 14.0m | Heat medium return | 453 / 234 | 78.8 | 34.8 | 0.02 | 0.019 | 734 / 390 | 819 / 437 | 927 / 497 | 0.24 |
| 11/21/19 | 12/03/19 | 30.0m | SIGHT GLASS BLEED | 471 / 244 | 285.0 | 35.5 | 0.028 | 0.085 | 706 / 374 | 793 / 423 | 904 / 485 | 0.35 |
| 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 |
|---------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|
| 06/02/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06/17/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10/08/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11/27/20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11/21/19 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 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

| | |
|----------|---|
| 06/17/22 | Pentane insolubles are increased, 90% distillation is still slightly raised but is down from last sample. Ensure sample piping is purged and avoid external contaminants when collecting samples. Resample in 6 months. Pentane Insolubles levels are abnormally high. (GCD) 90% Distillation Point is marginally high. |
| 10/08/21 | Sample results indicate that the fluid is in suitable condition for continued service. 90% distillation point is slightly high ensure blanket gas is on and functioning properly. Resample in 12 months. (GCD) 90% Distillation Point is marginally high. |
| 11/27/20 | Fluid is in very good condition overall. The GCD 90% is a little higher than normal which is likely caused by some oxidation that has taken place - not severe. Continue to submit annual samples to proactively monitor fluid condition. |
| 11/21/19 | This sample is in good condition. Resample in 6 months |

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