

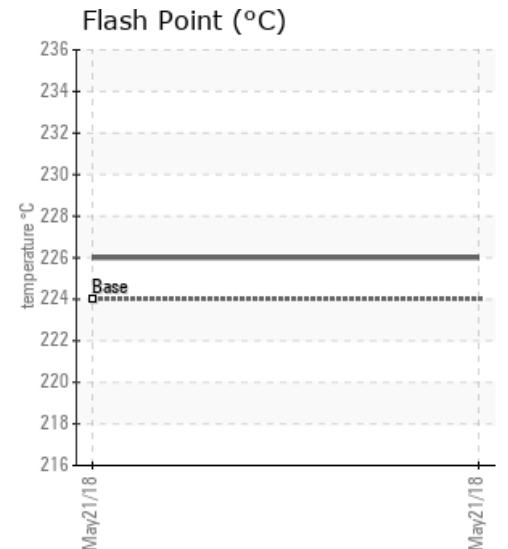
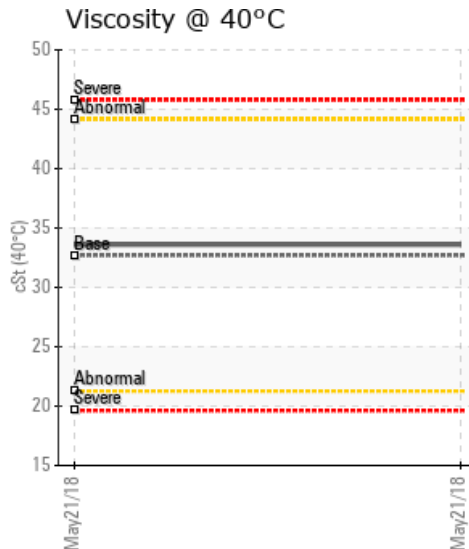
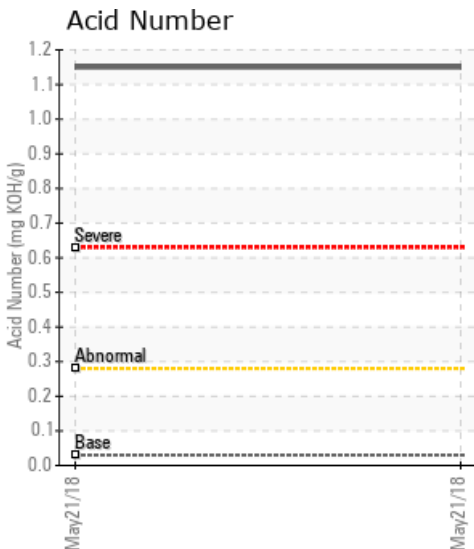
## [TANK DRAIN] HE-102

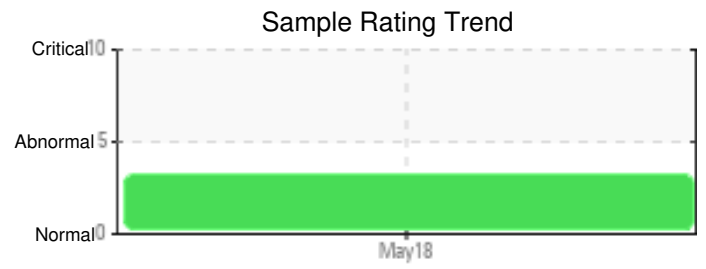
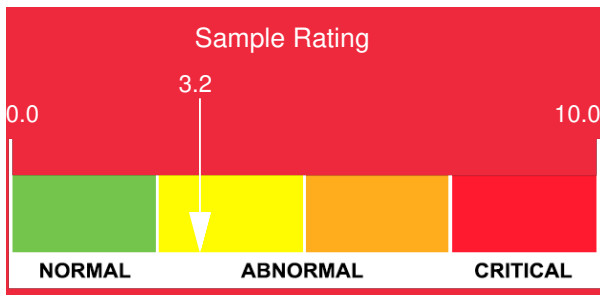
| Customer: PTRHTF10177   | System Information  | Sample Information   |
|---|---|--|
| Materia Inc<br>7629 State Hwy 75 South<br>Huntsville, TX 77340 USA<br>Attn: Kenny Nelson<br>Tel: (936)295-4040<br>E-Mail: knelson@materia-inc.com | System Volume: 0 gal<br>Bulk Operating Temp: 302F / 150C<br>Heating Source:<br>Blanket:<br>Fluid: PETRO CANADA CALFLO AF<br>Make: | Lab No: 02220692<br>Analyst: Frank Hayes<br>Sample Date: 05/21/18<br>Received Date: 06/06/18<br>Completed: 07/23/18<br>To discuss this report contact Frank Hayes at (713)981-6464 |

Recommendation: Total Acid Number is high without any other properties supporting a symptom with the fluid. Look for possible system contamination, change fluid, and resample in 6 months.

Comments: Acid Number (AN) is severely 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     | %             |
| 05/21/18      | 06/06/18      | 0m        |                 | 439 / 226         | 16.2       | 33.6             | 1.15        | 0.089  | 711 / 377 | 785 / 419 | 870 / 466 | 0.00          |
| Baseline Data |               |           |                 | 435 / 224         |            | 32.7             | 0.03        |        | 693 / 367 | 790 / 421 | 887 / 475 | 2.5           |

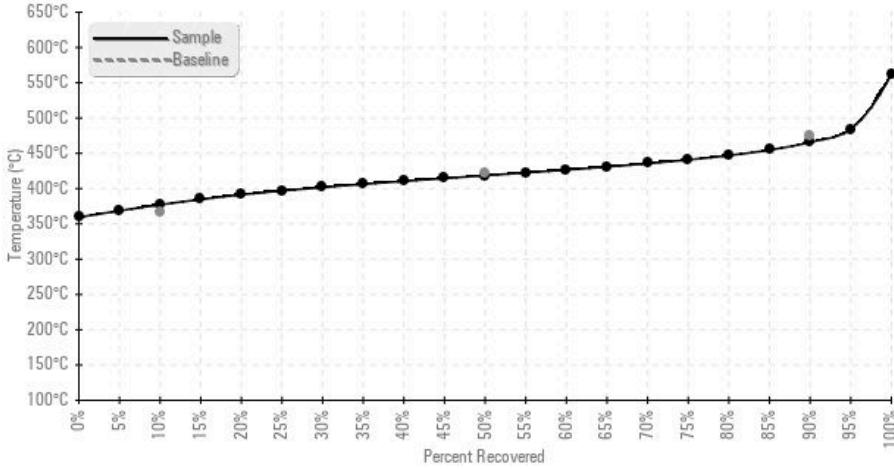




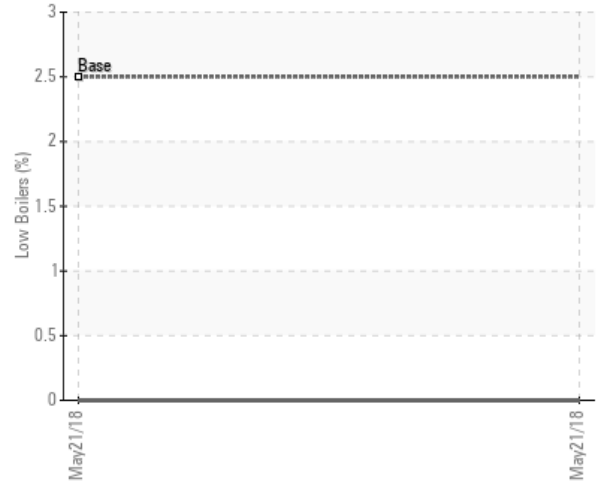
| Sample Date   | Iron | Chromium | Nickel | Aluminum | Copper | Lead | Tin | Cadmium | Silver | Vanadium | Silicon | Sodium | Potassium | Titanium | Molybdenum | Antimony | Manganese | Lithium | Boron | Magnesium | Calcium | Barium | Phosphorus | Zinc |   |
|---------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|---|
| 05/21/18      | 1    | 0        | 0      | 0        | 0      | 0    | 1   | 0       | 0      | 0        | 1       | 0      | 1         | 0        | 0          | 0        | 0         | 0       | 0     | 1         | 0       | 0      | 0          | 226  | 0 |
| Baseline Data |      |          |        | 0        | 0      |      |     |         |        | 0        |         |        | 0         | 0        |            |          |           |         | 0     |           |         |        |            | 270  |   |

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

#### Gas Chromatography Distillation (GCD)



#### % Boiling < 335°C



#### Historical Comments