

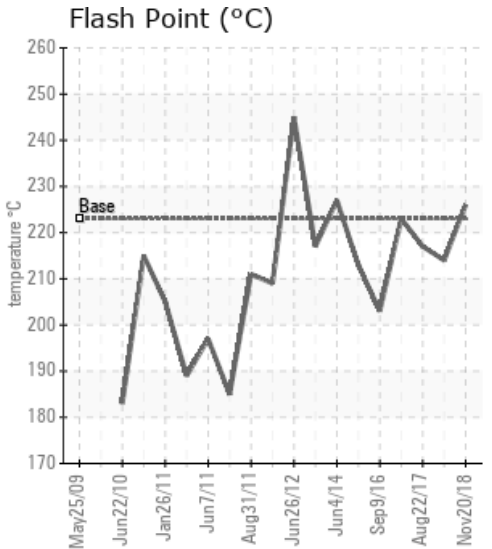
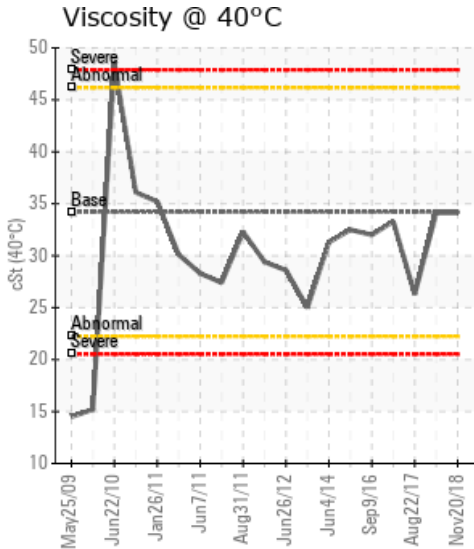
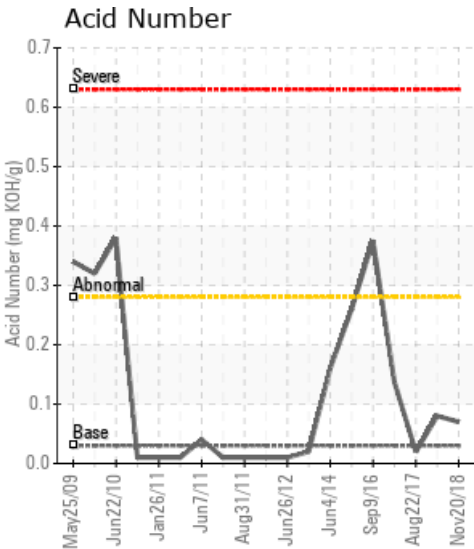
[TIDEWATER MIDSTREAM LSD / 11-33-45-8W5M] TRAIN A

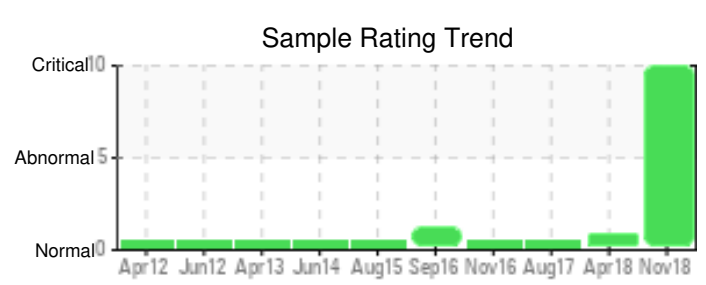
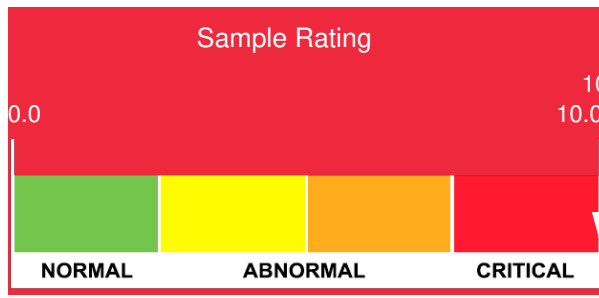
| Customer: PTRHTF20006 | System Information | Sample Information |
|---|--|--|
| Tidewater 21 Oxford Pl. Alder Flats, AB T0C 0A0 Canada Attn: Travis Smith Tel: (780)679-2498 E-Mail: tsmith@tidewatermidstream.com | System Volume: 6000 ltr Bulk Operating Temp: 266F / 130C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: | Lab No: 02253876 Analyst: Terry Veenstra Sample Date: 11/20/18 Received Date: 11/27/18 Completed: 12/10/18 |

Recommendation: This sample shows severe water contamination. GCD @ 10%, 50% and 90% are also severely low indicating possible contamination with process fluids. Vent off moisture in high point vent or in expansion tank.

Comments: Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. (GCD) 90% Distillation Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) 50% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.

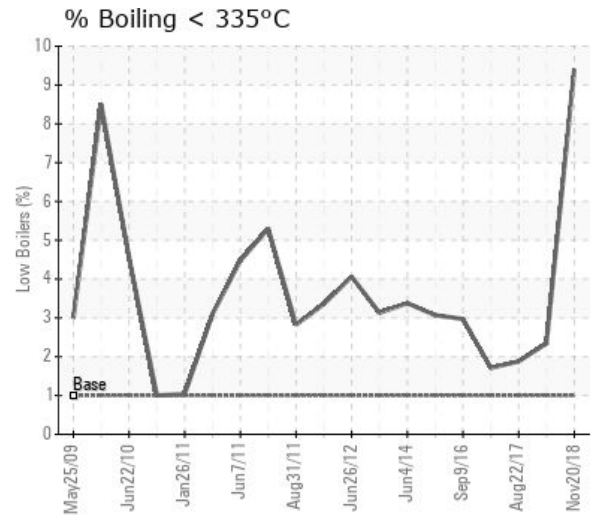
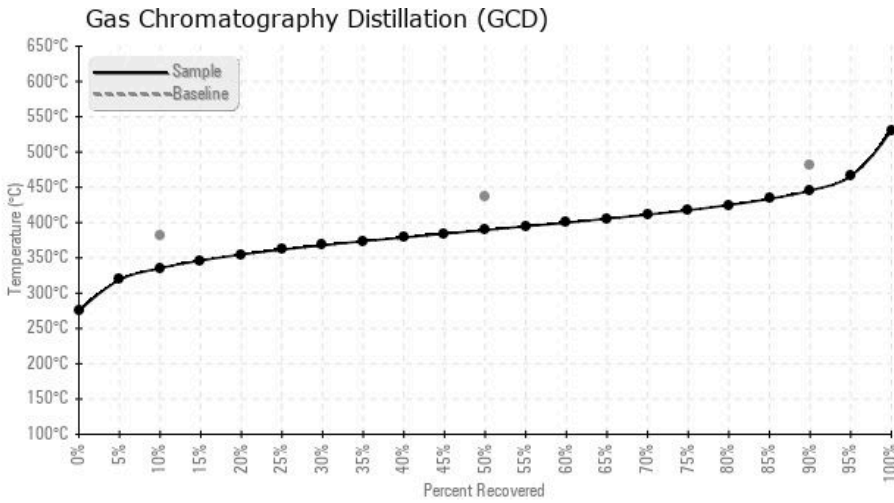
| Sample Date | Received Date | Fluid Age | Sample Location | Flash Point (COC) | Water (KF) | Viscosity (40°C) | Acid Number | Solids | GCD 10% | GCD 50% | GCD 90% | GCD % < 335°C |
|---------------|---------------|-----------|-----------------|-------------------|------------|------------------|-------------|--------|-----------|-----------|-----------|---------------|
| | mm/dd/yy | | | °F/°C | ppm | cSt | mg/KOH/g | %wt | °F/°C | °F/°C | °F/°C | % |
| 11/20/18 | 11/27/18 | 8y | | 439 / 226 | 6172.4 | 34.1 | 0.07 | 0.064 | 636 / 335 | 733 / 389 | 834 / 445 | 9.40 |
| 04/10/18 | 04/18/18 | 7y | | 417 / 214 | 8.1 | 34.1 | 0.08 | 0.251 | 705 / 374 | 813 / 434 | 928 / 498 | 2.34 |
| 08/22/17 | 08/28/17 | 7y | HEATER BATH | 423 / 217 | 16.7 | 26.3 | 0.02 | 0.250 | 707 / 375 | 809 / 432 | 904 / 485 | 1.88 |
| 11/01/16 | 11/08/16 | 6y | | 433 / 223 | 184.4 | 33.3 | 0.137 | 0.107 | 708 / 376 | 811 / 433 | 909 / 487 | 1.71 |
| 09/09/16 | 09/14/16 | 6y | HEATER BATH | 397 / 203 | 34.2 | 32.0 | 0.375 | 0.217 | 697 / 370 | 803 / 428 | 894 / 479 | 2.97 |
| 08/25/15 | 09/02/15 | 5y | HEATER BATH | 415 / 213 | 54.6 | 32.5 | 0.26 | 0.138 | 696 / 369 | 806 / 430 | 902 / 484 | 3.07 |
| 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 |
|----------------------|------|----------|--------|----------|--------|------|-----|---------|--------|----------|---------|--------|-----------|----------|------------|----------|-----------|---------|-------|-----------|---------|--------|------------|------|
| 11/20/18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04/10/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08/22/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11/01/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09/09/16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08/25/15 | 3 | 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

| | |
|----------|--|
| 04/10/18 | GCD @ 90% is high indicating some heavier ends in sample likely caused by overheating of fluid. Otherwise oil is still in good shape. Continue to operate and resample in 6 - 8 months. (GCD) 90% Distillation Point is abnormally high. |
| 08/22/17 | Fluid condition continues to be very good. Very little change from the last sample Nov 2016. Continue to sample annually to proactively monitor fluid condition. |
| 11/01/16 | This oil sample look good. The oil is suitable for further use. |
| 09/09/16 | Acid number is higher than it should be however oil is good for continued use. Resample in 3 months. Acid Number (AN) is abnormally high. |
| 08/25/15 | Fluid condition remains very good. Continue with annual sample submissions to monitor fluid condition. |