

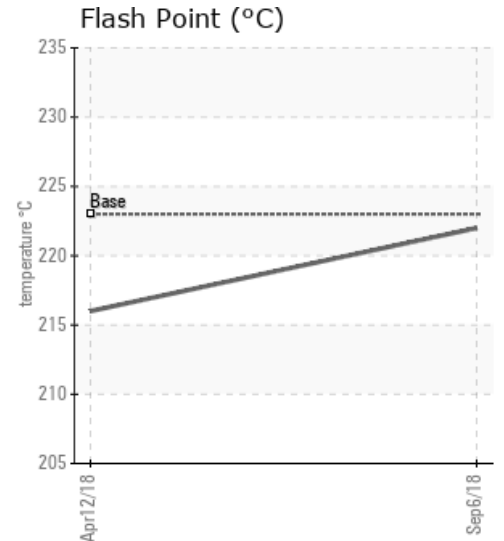
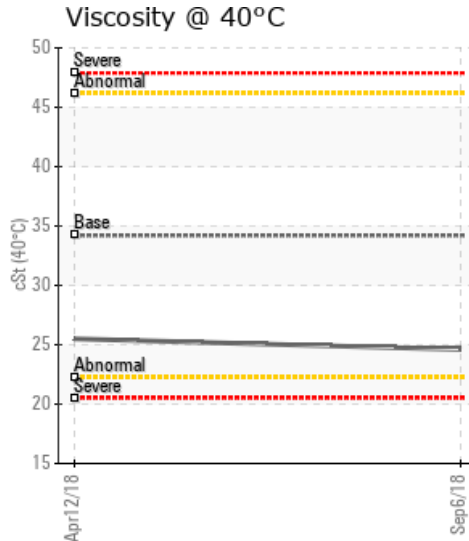
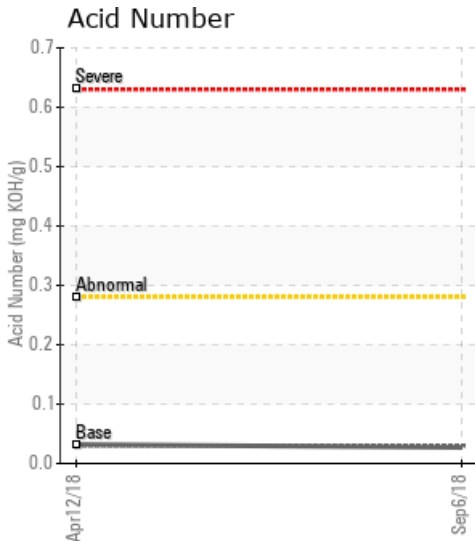
## H-3700/H-3750 LSD^ 14-23-58-26W45

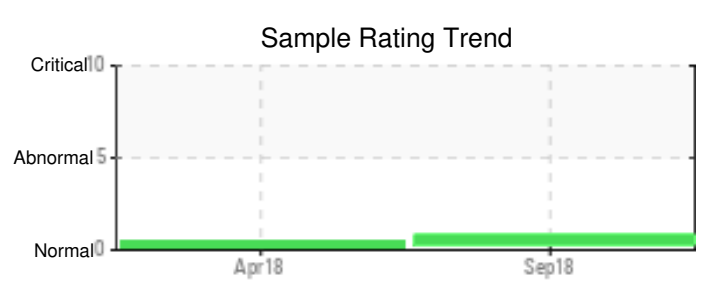
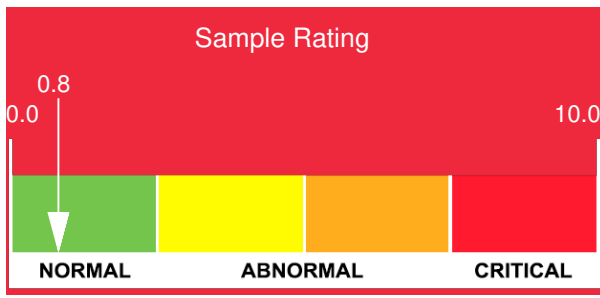
Customer: PTRHTF20103	System Information	Sample Information
CNRL WEST PLANT P.O. BOX 6808 EDSON, AB T7E 1L5 Canada Attn: Rodney Marcichiw Tel: (780)517-3542 E-Mail: rodney.marcichiw@cnrl.com	System Volume: 10000 ltr Bulk Operating Temp: 365F / 185C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: PETRO TECH HEATERS	Lab No: 02238408 Analyst: Peter Harteveld Sample Date: 09/06/18 Received Date: 09/11/18 Completed: 09/14/18 To discuss this report contact Peter Harteveld at (780)967-4234

Recommendation: The fluid is in a good condition and suitable for further use. Viscosity and 90% GCD temperature are low and not representative for Petro-Therm. The % boil-off <335C. (low boiler vapor and blanket gas content of the fluid) is increasing. 5.4% is not yet a problem but it is recommended to start venting the low boiler vapors to atmosphere. Pump cavitation problems and flow stagnation may be observed when the low boiler vapor content exceeds 7%.

Comments: (GCD) 90% Distillation Point is abnormally low.

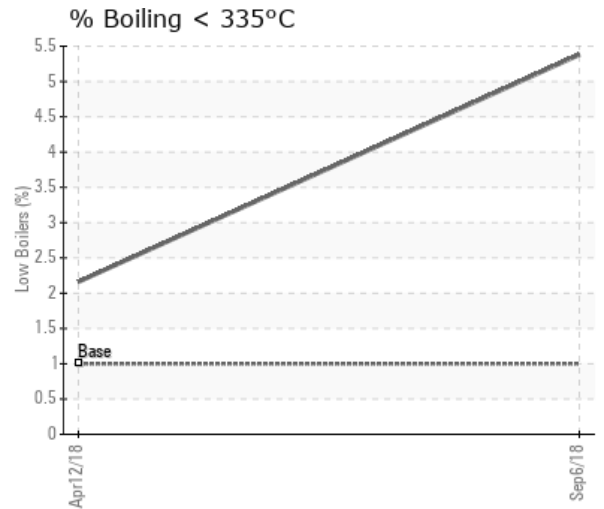
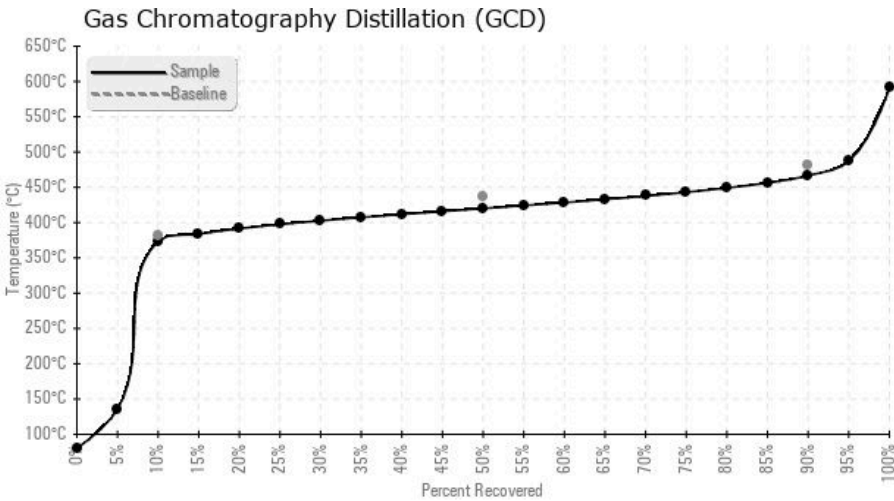
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/06/18	09/11/18	11y		432 / 222	43.0	24.6	0.027	0.050	704 / 373	788 / 420	872 / 467	5.38
04/12/18	04/19/18	10y		421 / 216	48.8	25.5	0.032	0.024	716 / 380	818 / 436	909 / 487	2.16
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	
09/06/18	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
04/12/18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	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

04/12/18	The fluid is in a good condition and suitable for further use but the viscosity is very low and not representative for Petro-Therm. Please resample in 6 months.