

## [TOURMALINE, KAKWA / 01-35-60-5-W6] STORAGE TANK

**Customer: PTRHTF20175**  
 QUADRA CHEMICALS  
 7802 98 STREET  
 CLAIRMONT, AB T0H 0W0 Canada  
 Attn: Quadra Samples  
 Tel:  
 E-Mail: quadra\_samples@quadra.ca

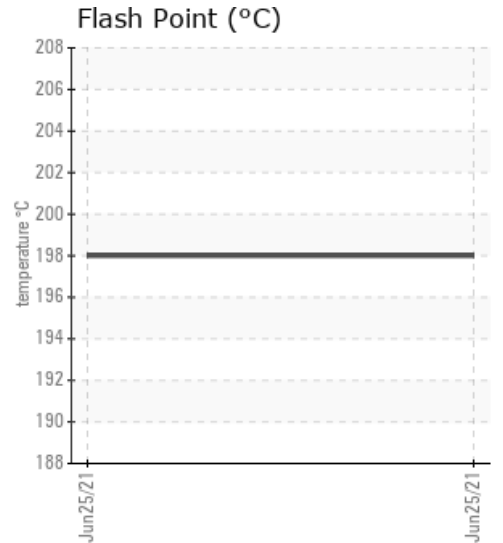
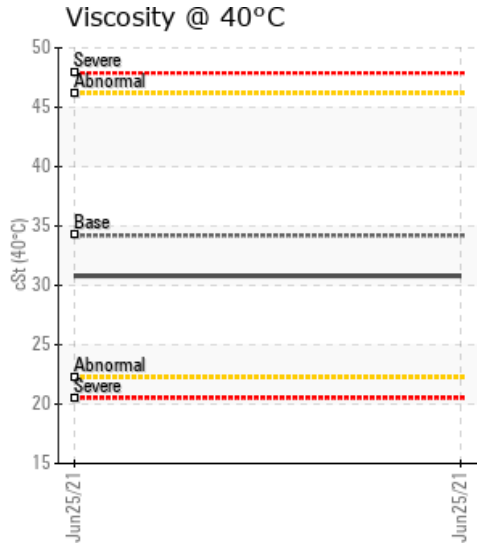
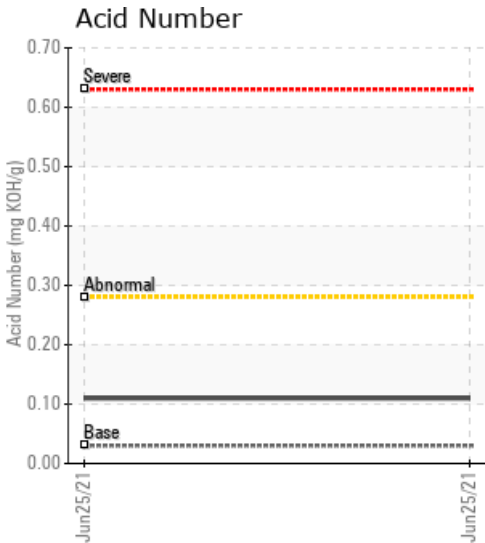
**System Information**  
 System Volume: 720000 ltr  
 Bulk Operating Temp: 338F / 170C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA PETRO-THERM  
 Make:

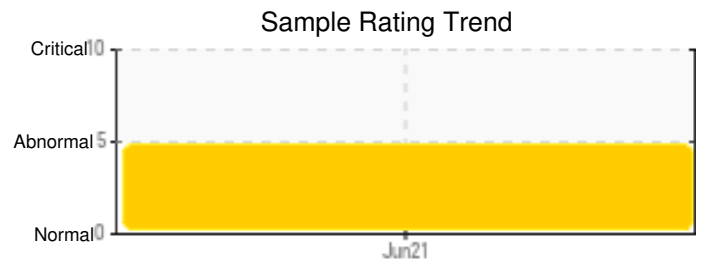
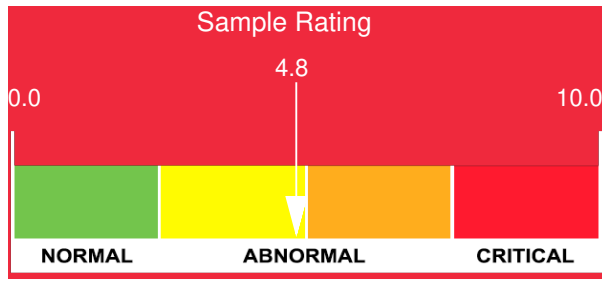
**Sample Information**  
 Lab No: 02430813  
 Analyst: Clinton Buhler  
 Sample Date: 06/25/21  
 Received Date: 07/05/21  
 Completed: 07/09/21  
 Clinton Buhler  
 Clinton.Buhler@HFSinclair.com

Recommendation: Sample results indicate the fluid is contaminated with water. This needs to be removed from the fluid before use and before extended storage as it will degrade the fluid. Protect the fluid from further water contamination by using desiccant breathers. Solids content is also high and would require filtering before use. Low boiling vapor content of 6.2% would suggest the need for venting of these vapors once the fluid was put into service

Comments: Water contamination levels are severely high. Water contamination levels are severely high.. ppm Water contamination levels are severely high. Pentane Insolubles levels are abnormally high. (GCD) 90% Distillation Point is abnormally high.

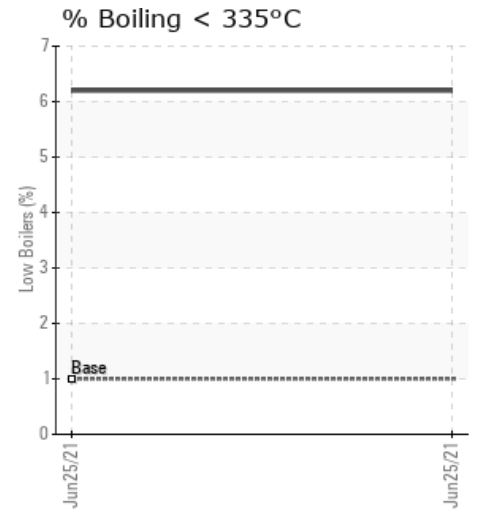
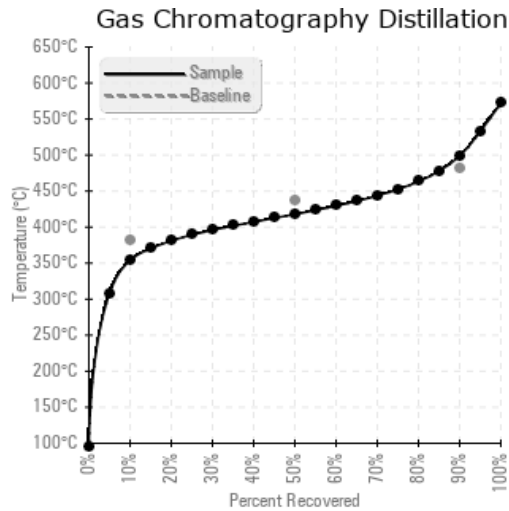
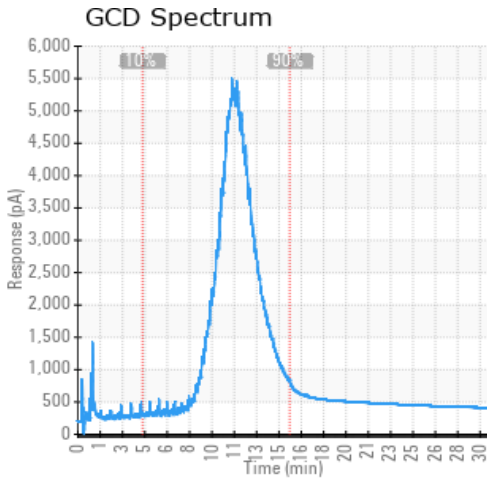
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/25/21	07/05/21	0.0y	Sample from storage	388 / 198	6252.3	30.8	0.11	0.436	670 / 355	784 / 418	930 / 499	6.20
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
06/25/21	23	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0
<b>Baseline Data</b>			0	0						0			0	0					0				0	

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



### Historical Comments


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