

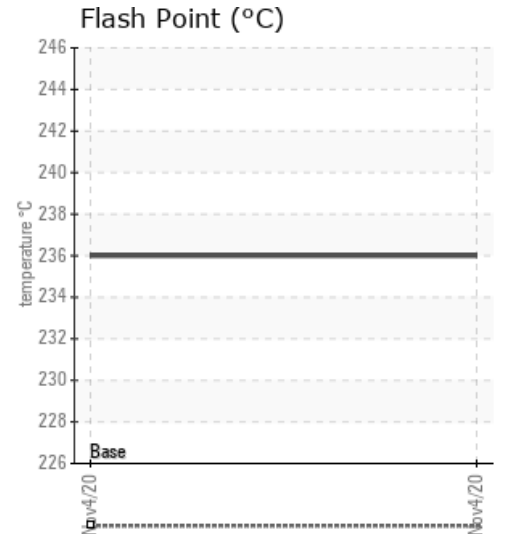
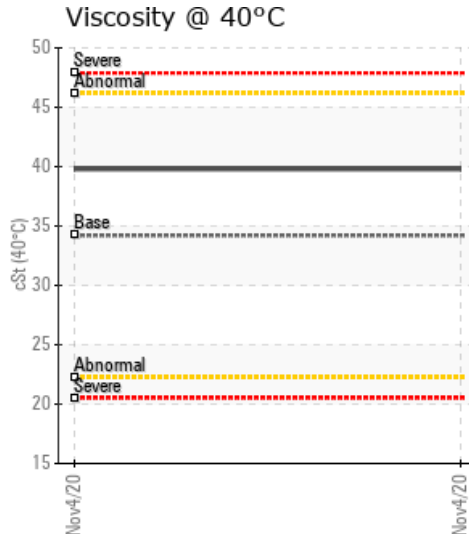
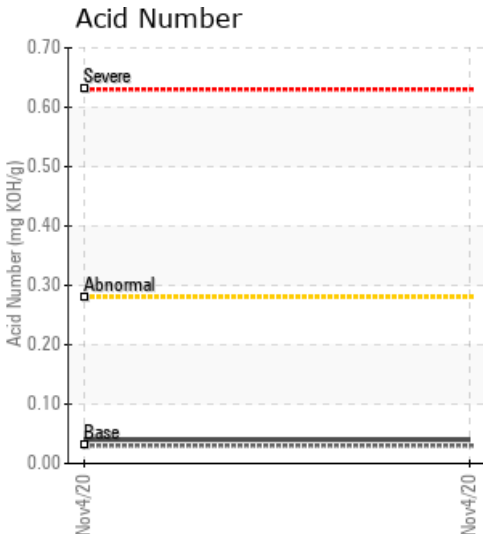
[07-34-034-06W4] TAMARACK VALLEY ENERGY

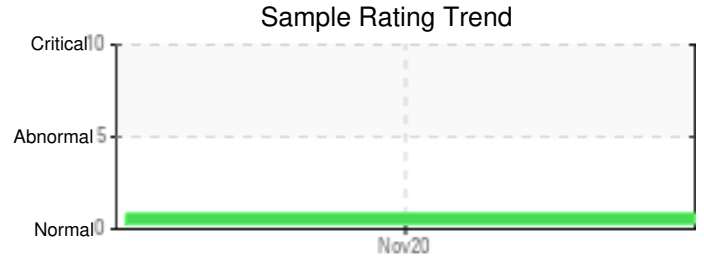
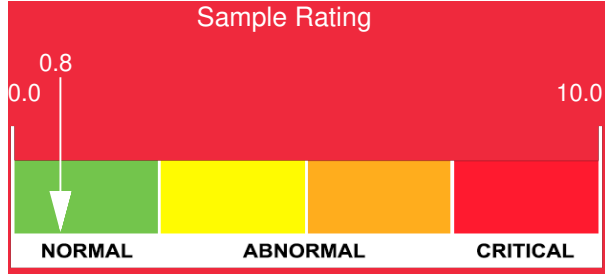
Customer: PTRHTF20247	System Information	Sample Information
TAMARACK VALLEY ENERGY BOX 158 CONSORT, AB T0C 1B0 Canada Attn: Nelson Gramlich Tel: (403)578-8135 E-Mail: nelson.gramlich@tamarackvalley.ca	System Volume: 0 gal Bulk Operating Temp: 302F / 150C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: PROPAK SYSTEMS LTD	Lab No: 02386372 Analyst: Kevin McDermott Sample Date: 11/04/20 Received Date: 11/10/20 Completed: 11/24/20 Kevin McDermott kevin.mcdermott@petrocanadalsp.com

Recommendation: Fluid is in good condition overall. Ensure blanket gas is always maintained to prevent oxidation. Suggest submitting samples annually to proactively monitor fluid condition.

Comments: (GCD) 90% Distillation Point is abnormally high and there is a small increase in viscosity. Although neither are severe, these are symptoms of oxidation that has occurred.

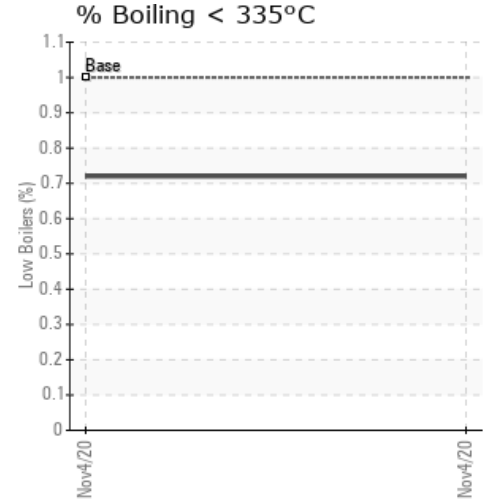
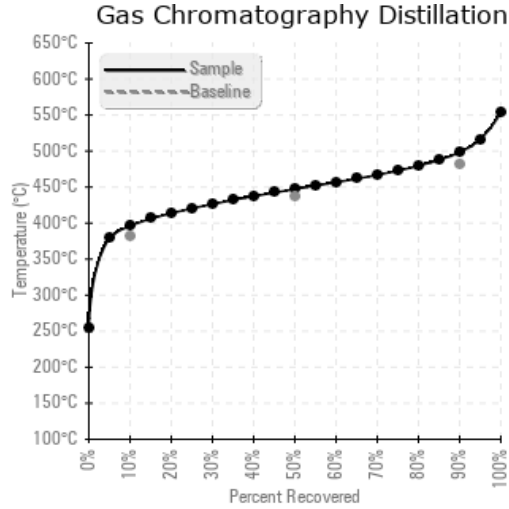
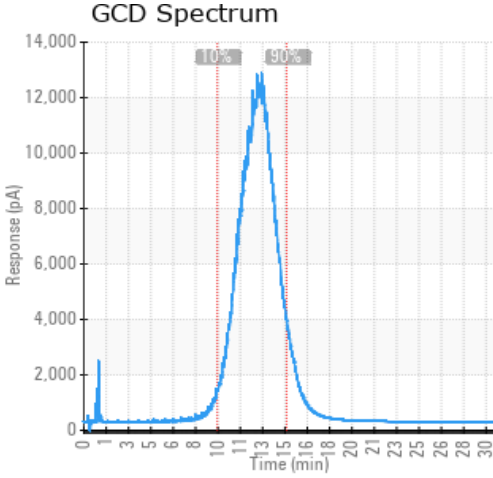
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/04/20	11/10/20	10y	De-ethanizer tower	457 / 236	0.00	39.8	0.04	0.093	745 / 396	837 / 447	929 / 498	0.72
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
11/04/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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

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