

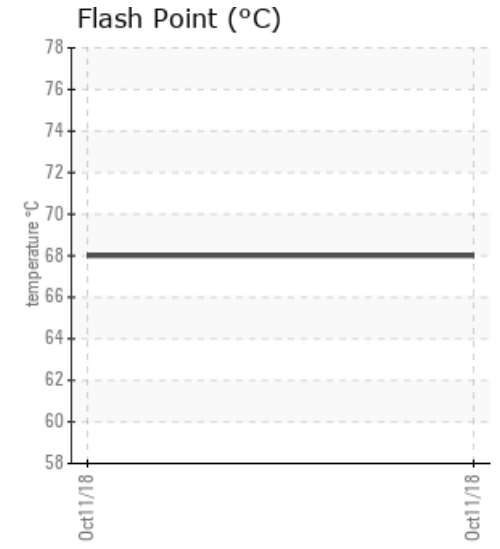
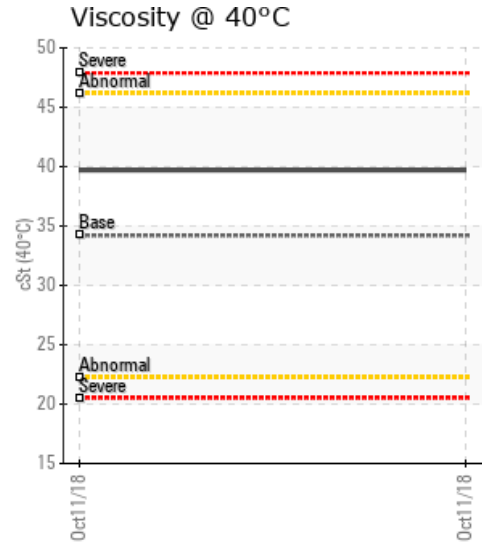
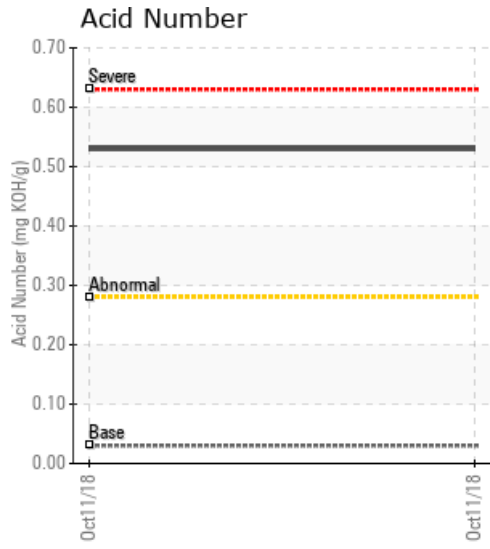
[KEYERA PARTNERSHIP / 3-12-46-14W5M] TOTE B

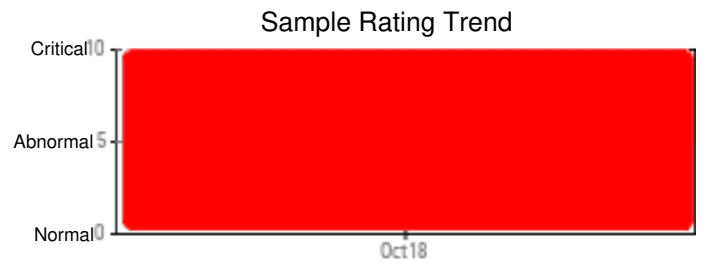
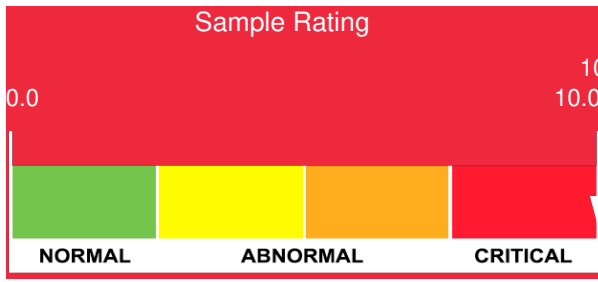
Customer: PTRHTF30084	System Information	Sample Information
Keyera Partnership Brazeau River Ga... Box 7318 Drayton Valley, AB T7A 1S5 Canada Attn: Don Renner Tel: (780)894-3601 E-Mail: don_renner@keyera.com	System Volume: 0 ltr Bulk Operating Temp: Not Specified Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make:	Lab No: 02245901 Analyst: Kevin McDermott Sample Date: 10/11/18 Received Date: 10/18/18 Completed: 10/22/18 Kevin McDermott kevin.mcdermott@hollyfrontier.com

Recommendation: Fluid is not suitable for use and should be disposed of - suspected contamination.

Comments: Water contamination levels are marginally high. (GCD) % < 335°C is severely high. (GCD) 90% Distillation Point is severely high. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. Calcium ppm levels are severely high. Zinc and phosphorus and sulfur ppm levels are severely high. Acid Number (AN) is abnormally high. (GCD) 50% 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	%
10/11/18	10/18/18	0.0y		154 / 68	517.1	39.7	0.53	0.031	229 / 110	870 / 465	982 / 528	32.07
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00

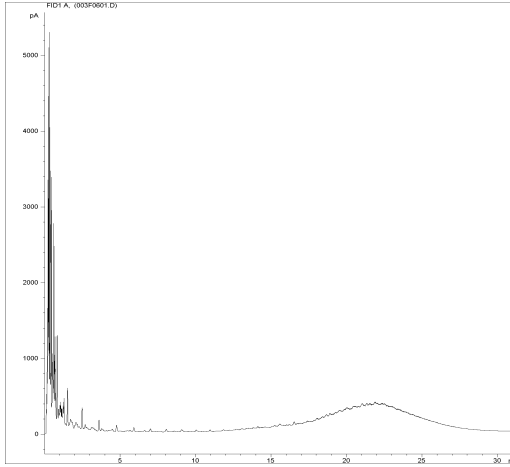




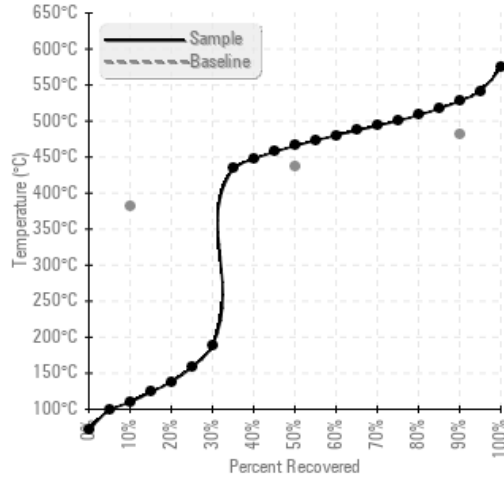
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
10/11/18	21	0	0	1	1	1	0	0	0	0	2	1	10	0	9	0	0	0	3	1	77	18	509	121
Baseline Data			0	0						0			0	0					0				0	

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

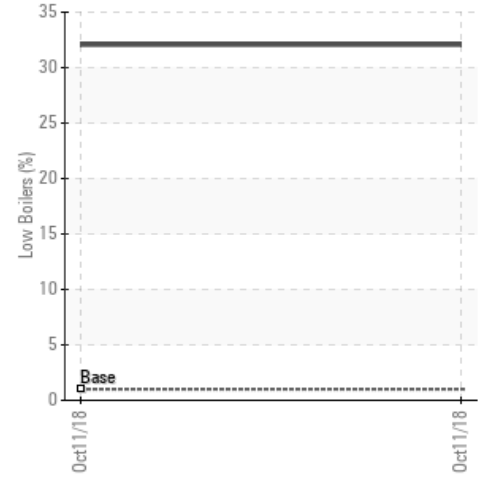
GCD Spectrum



Gas Chromatography Distillation



% Boiling < 335°C



Historical Comments

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