

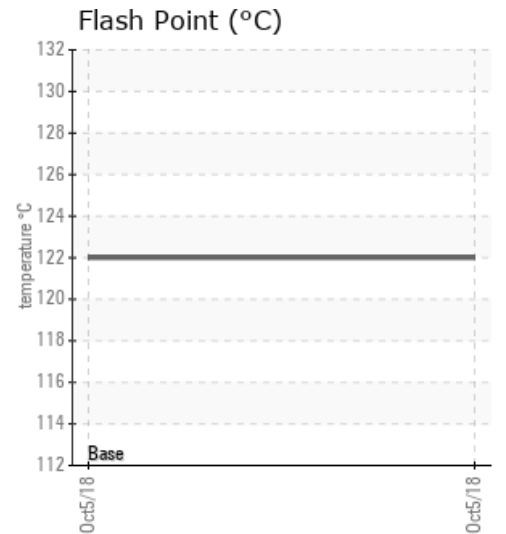
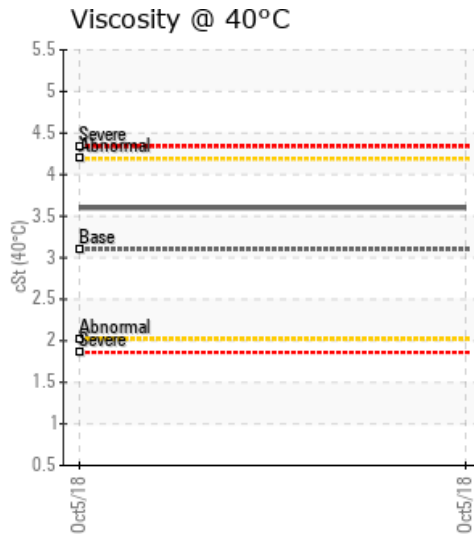
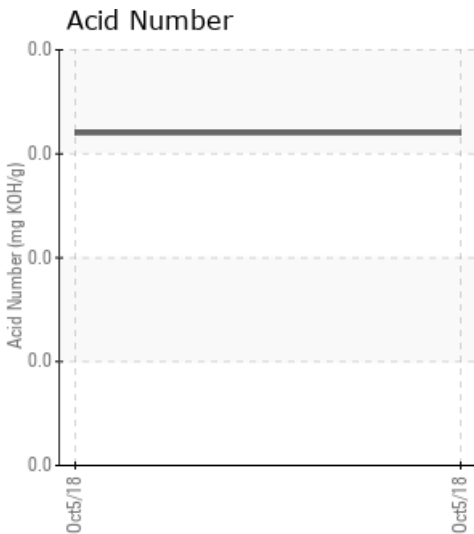
PLAINS MIDSTREAM - EMPRESS BLANC 1-5

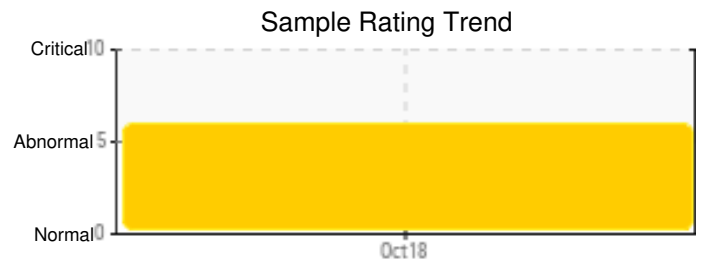
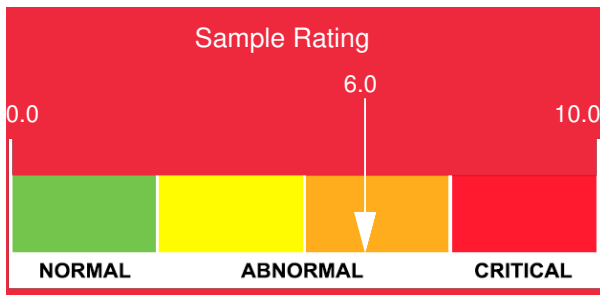
Customer: PTRHTF20038	System Information	Sample Information
UNIVAR CANADA LTD 4220 78 AVE SE CALGARY, AB T2C 2Z5 Canada Attn: ED VARTY/PETER WISSNER Tel: (403)203-6714 E-Mail: peter.wissner@univarcanada.com	System Volume: 0 ltr Bulk Operating Temp: 302F / 150C Heating Source: Blanket: Fluid: ESSO OIL 1156 Make: ESSO	Lab No: 02249081 Analyst: Kevin McDermott Sample Date: 10/05/18 Received Date: 11/02/18 Completed: 01/04/19

Recommendation: The 1156 oil is a very low viscosity fluid with a very low flash point. Running a fluid with flash point below the bulk temp presents a fire risk. An ISO VG 32 HT fluid such as Petro-Therm would be much better in this application.

Comments: .

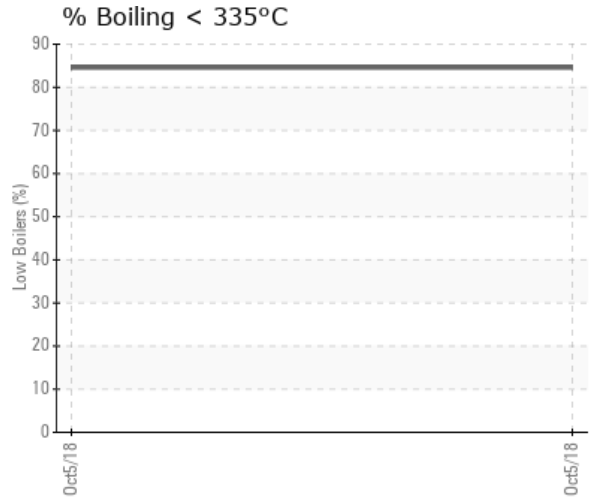
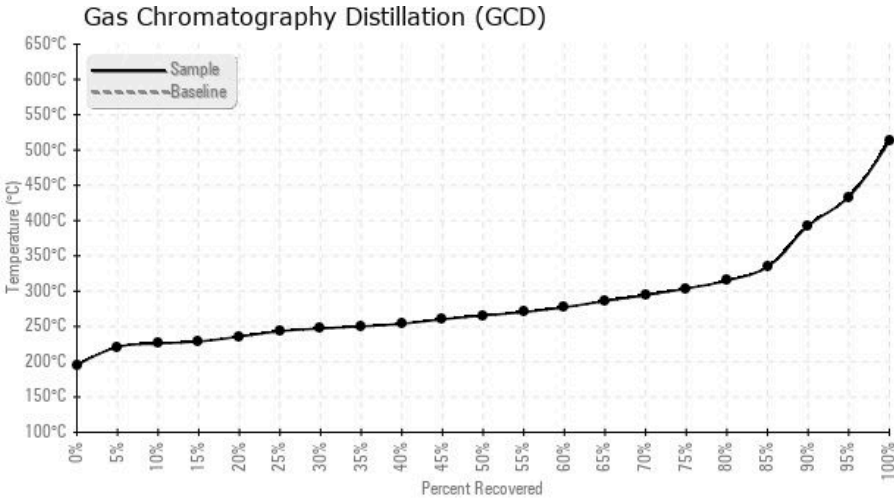
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/05/18	11/02/18	0y		252 / 122	45.9	3.6	0.032	0.277	438 / 226	510 / 265	739 / 393	84.58
Baseline Data				212 / 100		3.1						





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
10/05/18	2	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	

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.