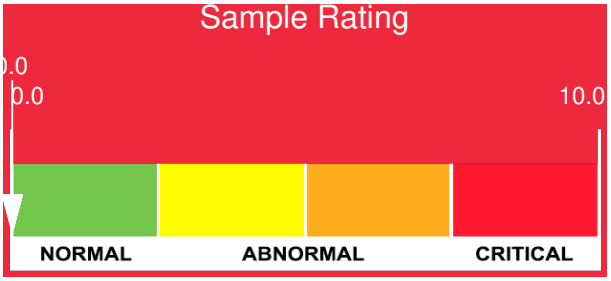
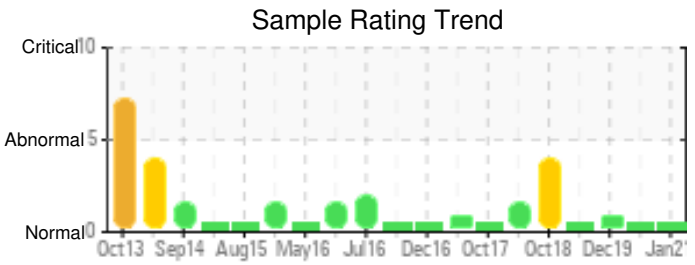




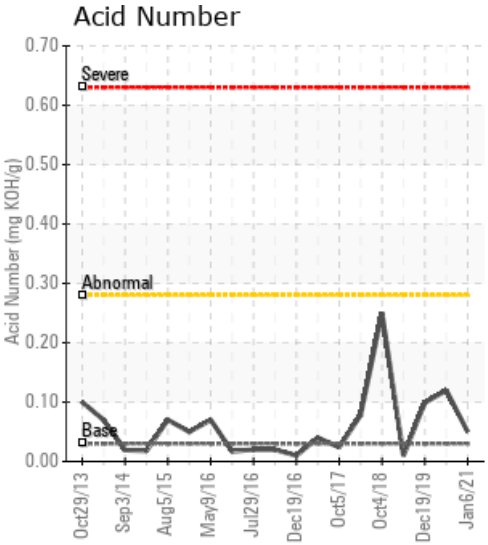
[CENOVUS / LSD 1-8-70-11W6M] WHRU HOT OIL

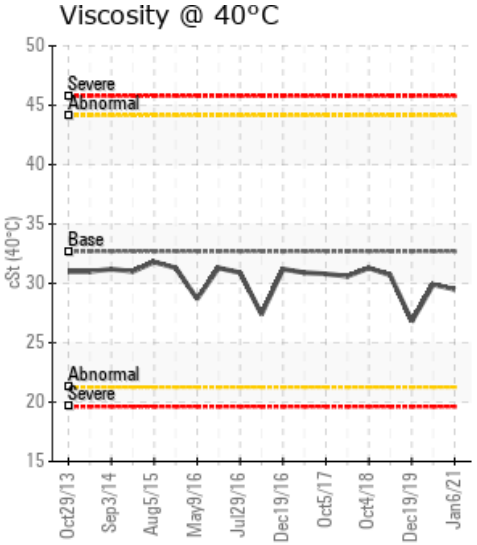
Customer: PTRHTF20131	System Information	Sample Information
CENOVUS 9701 - 116ST 1-8-70-11W6 ELMWORTH, AB T8W 6H6 Canada Attn: Bruce Hawryluk Tel: E-Mail: bruce.hawryluk@cenovus.com	System Volume: 75000 ltr Bulk Operating Temp: 424F / 218C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: OPTIMIZED PROCESS	Lab No: 02399582 Analyst: Clinton Buhler Sample Date: 01/06/21 Received Date: 01/25/21 Completed: 01/27/21 Clinton Buhler Clinton.Buhler@PetroCanadaLSP.com

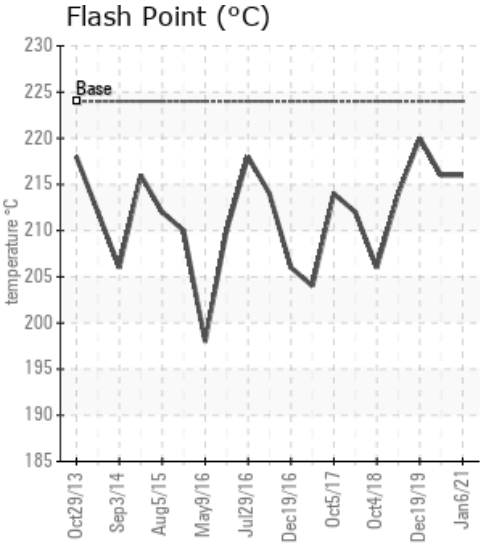
Recommendation: Fluid analysis results indicate that the fluid is in very good condition and suitable for continued service.Please re-sample in one year.

Comments:

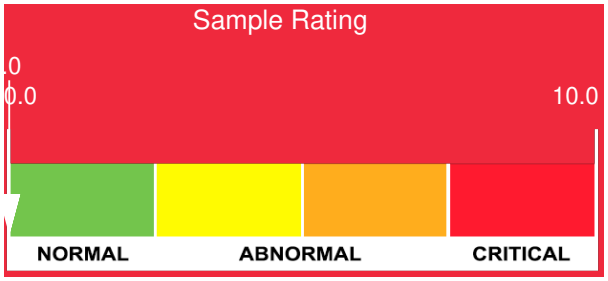
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/06/21	01/25/21	10y		421 / 216	112.8	29.5	0.05	0.094	706 / 375	800 / 427	890 / 477	1.08
08/24/20	09/23/20	9y	MAIN INLET TO DRUM	421 / 216	245.2	29.9	0.12	0.163	706 / 374	801 / 427	890 / 477	1.45
12/19/19	02/04/20	9y	SURGE TANK	428 / 220	243.1	26.8	0.099	0.088	734 / 390	797 / 425	874 / 468	0.00
11/19/18	11/27/18	8y		417 / 214	116.4	30.7	0.01	0.025	700 / 371	797 / 425	887 / 475	1.41
10/04/18	10/10/18	8y		403 / 206	3150.4	31.3	0.25	0.049	714 / 379	784 / 418	866 / 463	0.00
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

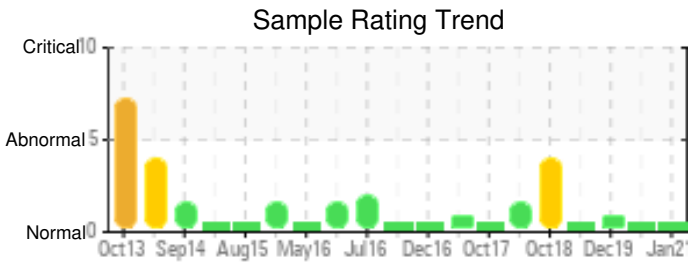






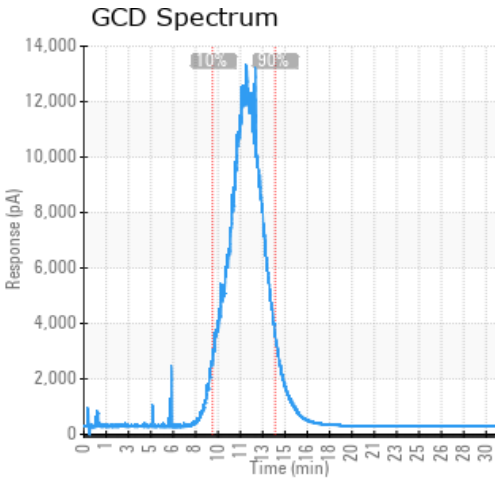
PETRO-CANADA LUBRICANTS

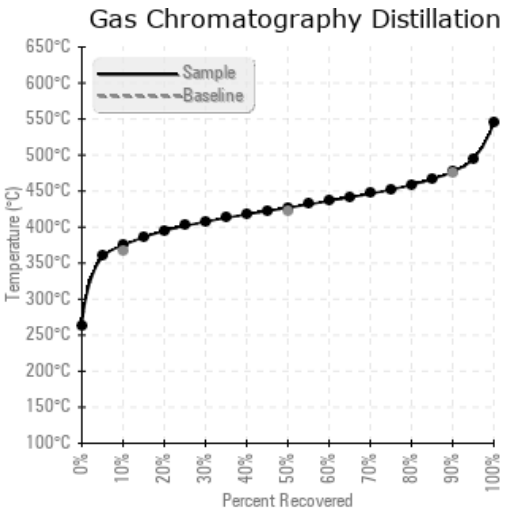


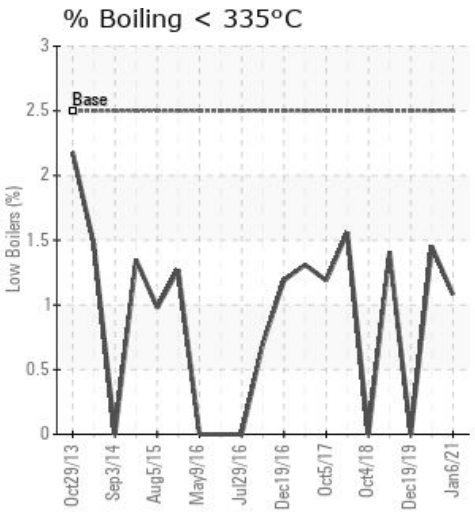


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
01/06/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0
08/24/20	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0
12/19/19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0
11/19/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0
10/04/18	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0
Baseline Data			0	0						0			0	0					0				270	

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







Historical Comments

08/24/20	Sample results indicate that the heat transfer fluid is suitable for continued service. Please re-sample in 12 months and please ensure sample valve and piping is thoroughly purged prior to taking the sample
12/19/19	Sample results indicate that the fluid is suitable for continued service. (GCD) 10% Distillation Point is marginally high but within acceptable range.Please re-sample within 12 months.
11/19/18	Sample results indicate that the fluid is suitable for continued service. please re-sample in 12 months
10/04/18	Water contamination is present. This presents a safety risk as fluid could experience boil-over. Please ensure system is sealed off from exposure to outside water and that all fluid transfer devices and hoses are free from water. Ensure that all Petro-Therm added to the system is free from water contamination. Take measures to remove water from system safely.Aside from boil-over, water can accelerate oxidation of the fluid which can also promote corrosion of metal surfaces. Please note that Acid Number has increased from 0.078 last sample to 0.25 this sample. Also note that Iron has increased from <1 ppm to 7 ppm in this sample.Aside from the water, the fluid health is acceptable for continued service. 90% distillation is lower than normal but shouldn't affect system performance.Re-sample once water has been removed and measures to prevent water contamination have been put in place. Water contamination levels are severely high. (GCD) 90% Distillation Point is marginally low.