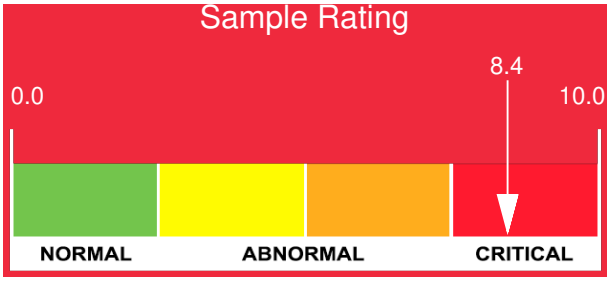
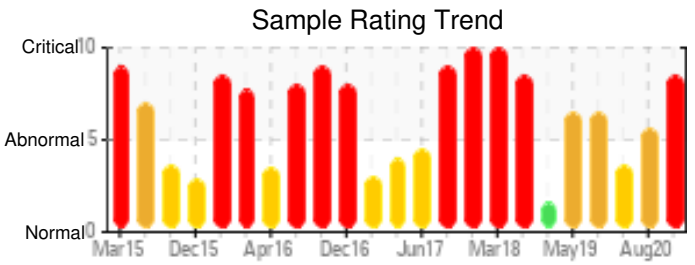




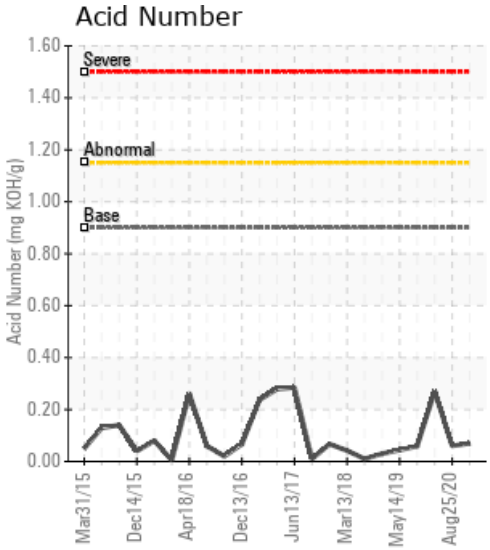
VTA HOT OIL PUMP

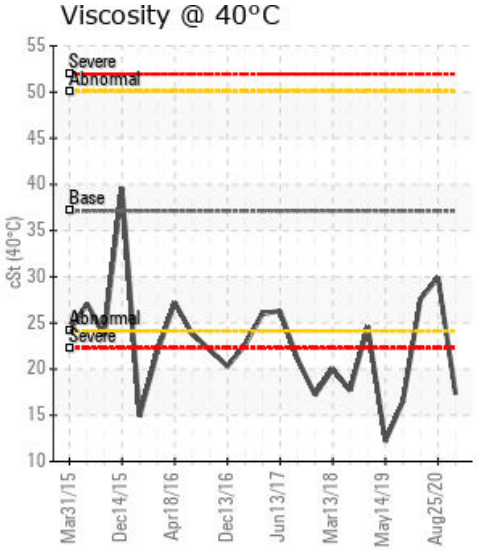
Customer: PTRHTF10004	System Information	Sample Information
ADM VITAMIN E PLANT 3700 EAST DIVISION STREET DECATUR, IL 62526 USA Attn: Rick Cluck Tel: (217)451-7770 E-Mail: ricky.cluck@adm.com	System Volume: 1800 gal Bulk Operating Temp: 650F / 343C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: AMERICAN HEATING	Lab No: 02391631 Analyst: Joe Goecke Sample Date: 11/25/20 Received Date: 12/08/20 Completed: 12/11/20 Joe Goecke Joe.goecke@petrocanadalsp.com

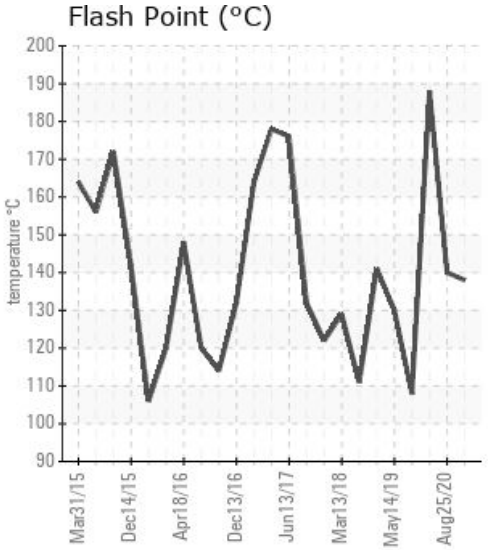
Recommendation: System in critical condition. Flash point very low at 138 C. Viscosity is also very low at 17.3 Cst and will affect heat transfer and lubrication of system. The low boilers have passed the 15% mark at 17.7%. This system should be scheduled to be changed in the next 30 days.

Comments: (GCD) % < 335°C is severely high. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. Visc @ 40°C is severely low.

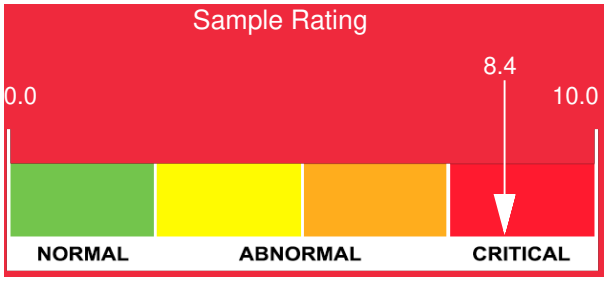
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/25/20	12/08/20	0y	Pump	280 / 138	10.1	17.3	0.07	0.082	514 / 268	780 / 416	892 / 478	17.70
08/25/20	09/03/20	0y		284 / 140	10.4	29.9	0.06	0.036	586 / 308	795 / 424	902 / 483	12.35
05/08/20	05/13/20	0y		370 / 188	13.3	27.6	0.27	0.074	666 / 352	802 / 428	901 / 483	7.59
11/13/19	11/21/19	0y	B4 HOT OIL PUMP	226 / 108	4.0	16.5	0.059	0.046	600 / 315	780 / 415	898 / 481	12.03
05/14/19	05/22/19	0y	B3	266 / 130	9.5	12.2	0.044	0.050	567 / 297	783 / 417	904 / 485	14.36
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5

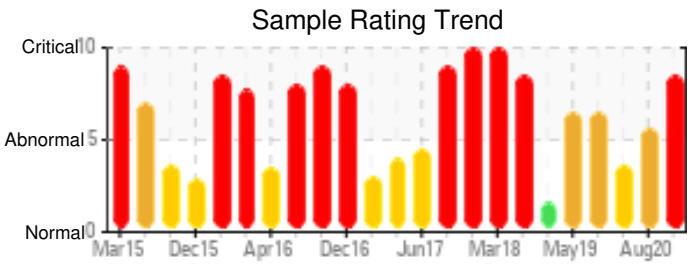






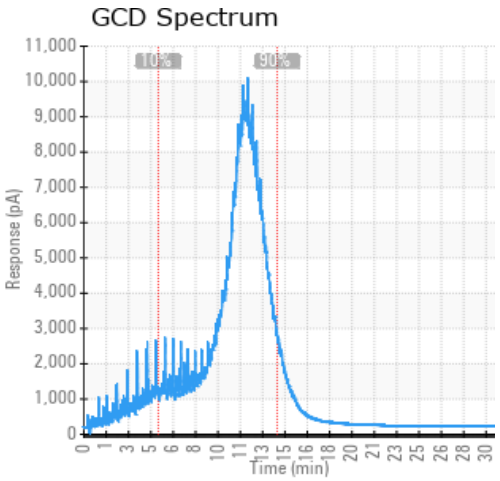
PETRO-CANADA LUBRICANTS

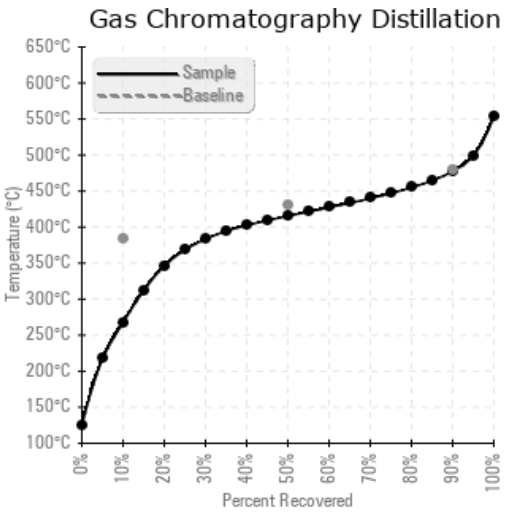


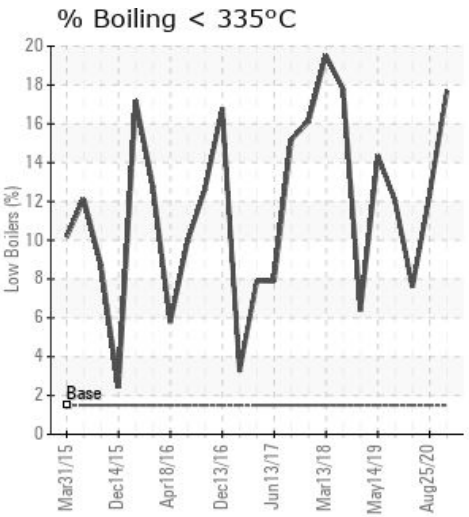


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
11/25/20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0
08/25/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0
05/08/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0
11/13/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	0
05/14/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0
Baseline Data			0	0						0			0	0				0	0				230	

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







Historical Comments

08/25/20	We are starting to see signs of significant cracking with low boilers passing the 12% mark and flash point at 140 C. Once the GCD <335 exceed 15% we recommend changing. I would shorten the sampling cycle by half to see what the oil looks like in mid October. Should look to change by November or do a partial exchange. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is abnormally high.
05/08/20	Viscosity is good, and although the flash point is lower than new it is still in an acceptable range for operating and the low boilers are less than 10%. Continue to operate and resample in 60-90 days. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.
11/13/19	Viscosity is still low and flash point has decreased I suggest planning a change or partial change to get the system in better condition within the next 45 days. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. Visc @ 40°C is severely low. (GCD) % < 335°C is abnormally high.
05/14/19	This system is extremely low on viscosity at 12.2 cSt. Flash point is over 100 degrees C less than a fresh charge and the low boilers are over 14%. I recommend planning a change of this oil soon since venting is currently not an option. Heat transfer ability and safety are main concerns. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. Visc @ 40°C is severely low. (GCD) % < 335°C is abnormally high.