

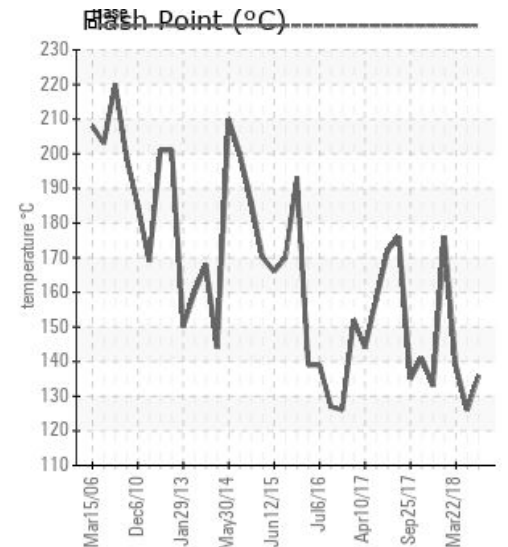
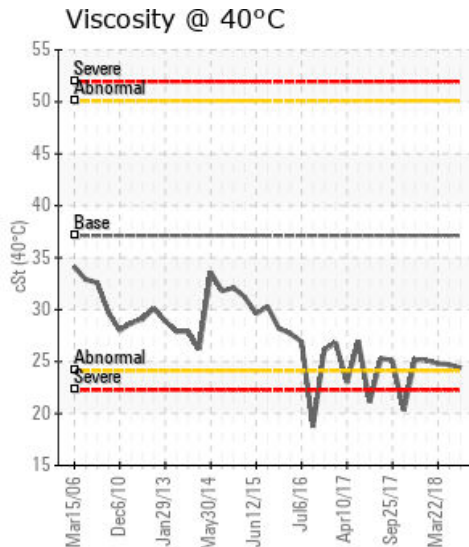
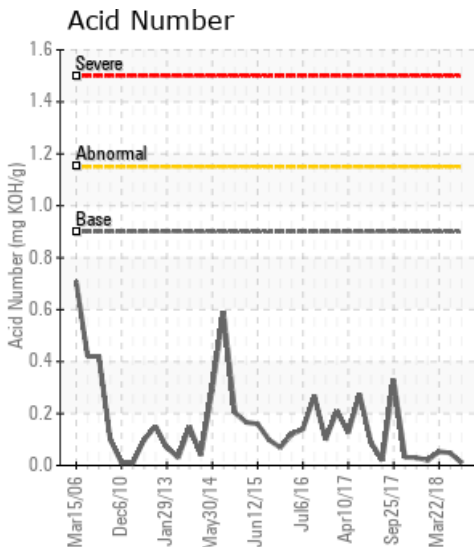
## WEST HOT OIL SYSTEM

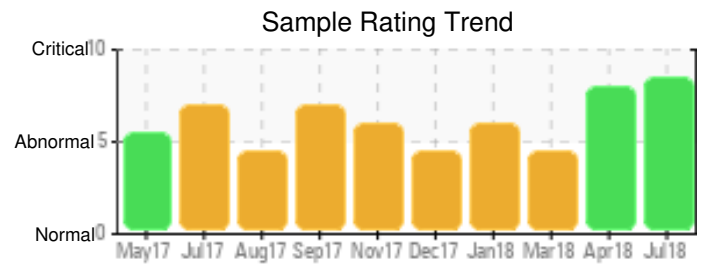
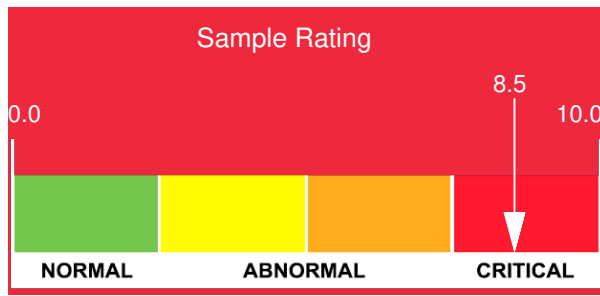
Customer: PTRHTF10004	System Information	Sample Information
ADM VITAMIN E PLANT 3700 EAST DIVISION STREET DECATUR, IL 62526 USA Attn: Rick Cluck Tel: (217)451-7770 E-Mail: ricky.cluck@adm.com	System Volume: 2200 gal Bulk Operating Temp: 550F / 288C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: AMERICAN	Lab No: 02232582 Analyst: Joe Goecke Sample Date: 07/31/18 Received Date: 08/08/18 Completed: 08/21/18 To discuss this report contact Joe Goecke at (859)543-0092

Recommendation: Low boilers continue to rise over 10.5% and flash point is low at 136 C. The viscosity has dropped a slight amount and the 10% Distillation point has dropped to very low temp. Oil should be scheduled for a change within the next 60-90 days.

Comments: (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally high.

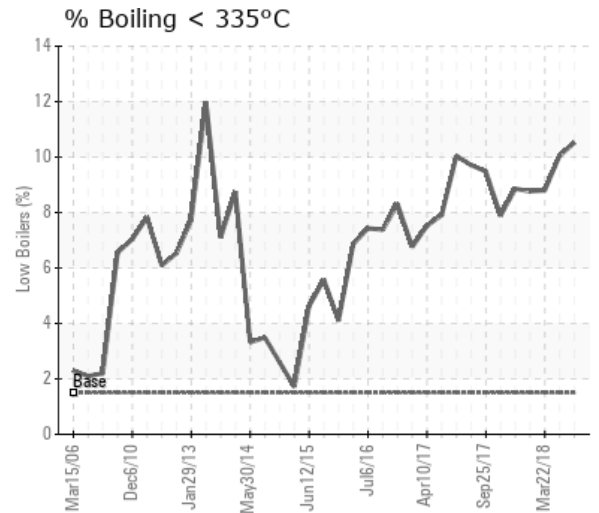
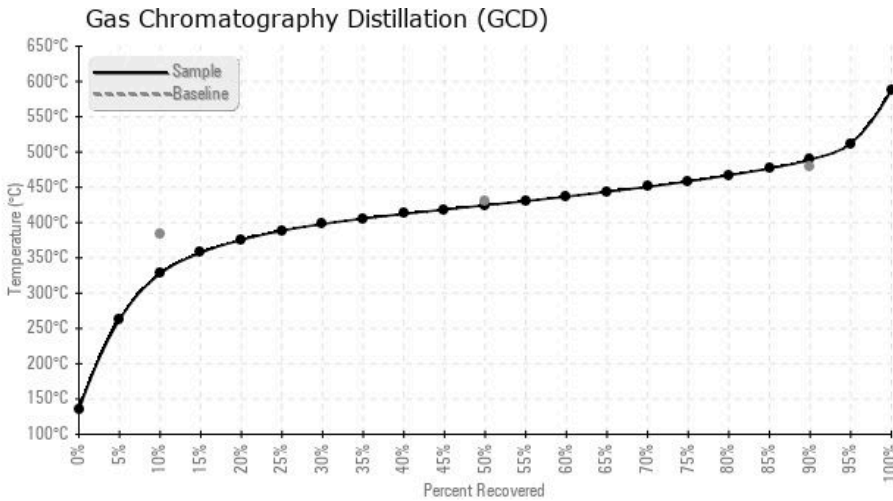
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/31/18	08/08/18	0y	B24 HOT OIL PUMP	277 / 136	2.2	24.4	0.01	0.075	621 / 327	796 / 425	913 / 489	10.52
04/26/18	05/04/18	0y		259 / 126	0.00	24.7	0.048	0.050	628 / 331	798 / 426	912 / 489	10.05
03/22/18	03/29/18	0y		282 / 139	7.1	24.8	0.053	0.007	645 / 341	805 / 430	908 / 487	8.80
01/30/18	02/05/18	0y		349 / 176	4.2	25.1	0.02	0.035	646 / 341	803 / 429	920 / 493	8.76
12/18/17	12/27/17	0y		271 / 133	9.1	25.2	0.03	0.040	644 / 340	798 / 425	907 / 486	8.86
11/21/17	11/22/17	2y		286 / 141	7.3	20.3	0.031	0.036	656 / 347	798 / 425	907 / 486	7.89
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5





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
07/31/18	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
04/26/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0
03/22/18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
01/30/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0
12/18/17	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	16	0
11/21/17	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	28	0
<b>Baseline Data</b>			0	0						0			0	0					0				230	

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



Historical Comments	
04/26/18	Flash point continues to drop into a very low level. Low boilers have crossed the 10% level. The system should be changed in the 60-90 days. Viscosity remains low as well. (GCD) 10% Distillation Point is severely low. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally high.
03/22/18	Flash point dropped again to critical level. Light ends have held steady with no increase and viscosity has remained steady although on the lower end. With all parameters except flash staying steady continue to use and resample in 60 days. Possible change later this year on 3 rd or 4 th Quarter. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.
01/30/18	Low boilers and viscosity have remained steady with no major changes. Flash point has seen a significant increase and although this is still low much better than previous sample. Suitable for continued use resample at next scheduled interval. COC Flash Point is severely low. (GCD) 90% Distillation Point is abnormally high. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.
12/18/17	Sample remained very stable from last report. A slight drop in Flash point but a rise in viscosity indicates some stability. Low boilers had slight rise but less than 10. Continue to use and sample at next regular interval. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.
11/21/17	Drop in viscosity from last sample of 5 cSt, Flash point relatively the same slight decrease in low boilers indicate a fairly stable sample from last sample. Should consider a planned change out during next quarter due to the repeated low viscosity and high flash point. Resample in 45 days to confirm trend. COC Flash Point is severely low. Visc @ 40°C is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.

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