

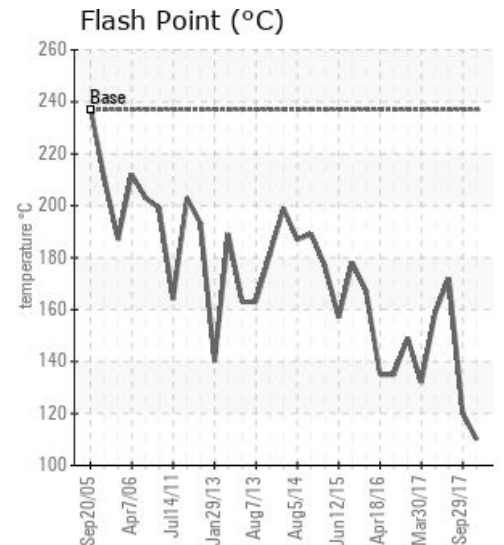
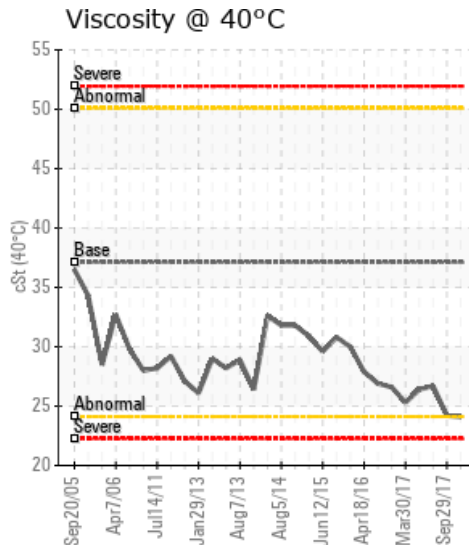
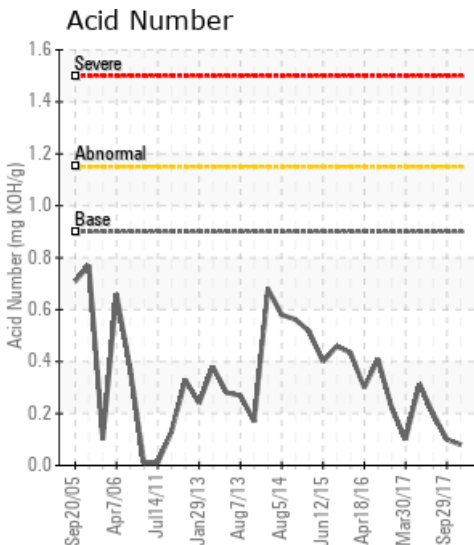
[VIT E 116] EAST

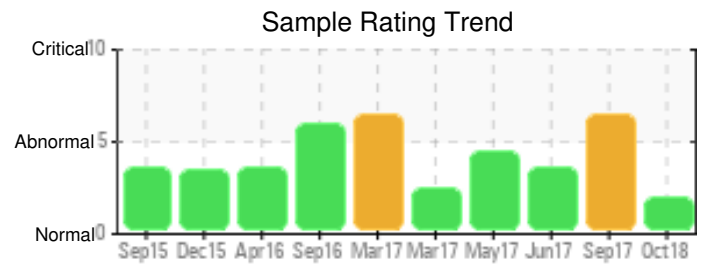
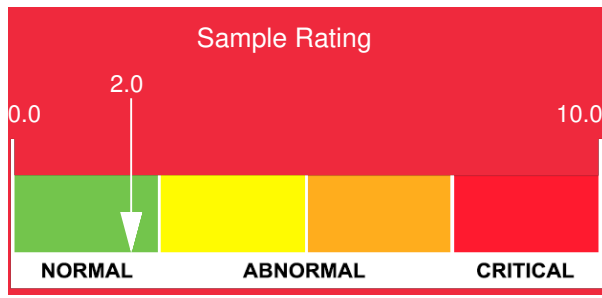
Customer: PTRHTF10004	System Information	Sample Information
ADM VITAMIN E PLANT 3700 EAST DIVISION STREET DECATUR, IL 62526 USA Attn: Rick Cluck Tel: (217)451-7770 E-Mail: ricky.cluck@adm.com	System Volume: 2200 gal Bulk Operating Temp: 550F / 288C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: AMERICAN HEATING	Lab No: 02245909 Analyst: Joe Goecke Sample Date: 10/11/18 Received Date: 10/18/18 Completed: 10/22/18 To discuss this report contact Joe Goecke at (859)543-0092

Recommendation: Flash point and Viscosity remain low, however low boilers are within range. Continue to use and resample in 60 days.

Comments: COC Flash Point is severely low. Visc @ 40°C is abnormally low.

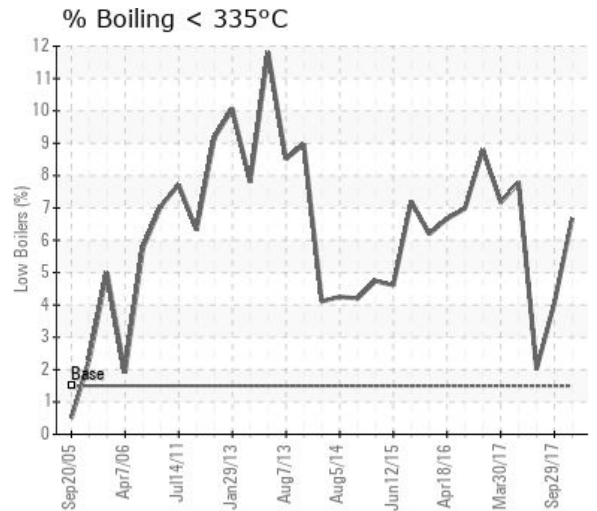
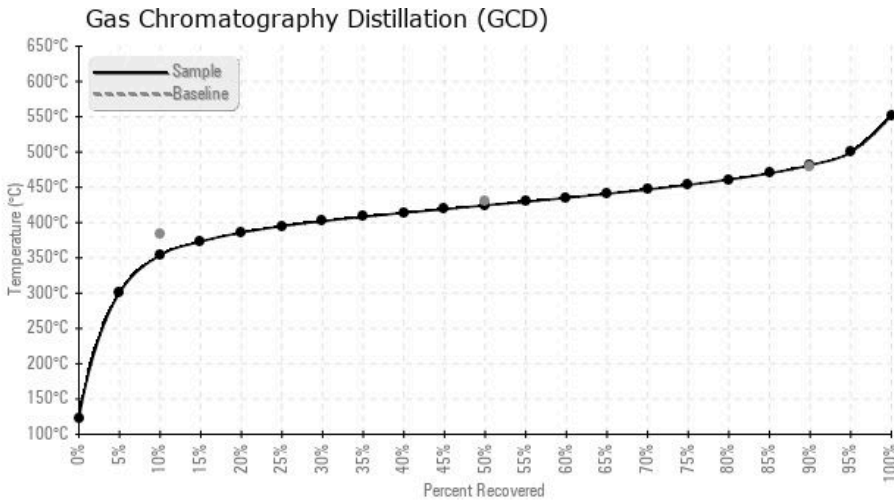
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/11/18	10/18/18	0y		230 / 110	11.1	24.1	0.08	0.018	669 / 354	796 / 424	899 / 481	6.68
09/29/17	10/06/17	0y		248 / 120	14.1	24.2	0.10	0.028	686 / 364	805 / 430	918 / 492	4.06
06/29/17	07/07/17	0y	EAST PUMP - EAST UNT	342 / 172	11.6	26.7	0.20	0.021	710 / 377	819 / 437	942 / 506	2.01
05/22/17	05/26/17	0y	EAST HO PMP EAST	318 / 159	2.9	26.4	0.313	0.033	658 / 348	803 / 429	907 / 486	7.78
03/30/17	07/11/18	1y	WEST PUMP	270 / 132	15.8	25.3	0.10	0.033	663 / 350	801 / 427	910 / 488	7.17
03/30/17	04/04/17	1y	EAST PUMP ON EAST HO	300 / 149	10.3	26.6	0.22	0.022	646 / 341	801 / 427	906 / 485	8.80
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
10/11/18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0
09/29/17	11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	0
06/29/17	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1
05/22/17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0
03/30/17	13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8	0
03/30/17	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	2
Baseline Data			0	0						0		0	0						0				230	

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



Historical Comments	
09/29/17	Flash point is very low on this sample. Although other tests that would normally support this like GCD <335 and viscosity are not too far out of range I would recommend resampling in 30 days to confirm the flash point. If it continues to remain low a complete or partial change should be considered. COC Flash Point is severely low. (GCD) 90% Distillation Point is marginally high.
06/29/17	Flash point is lower than a new sample and viscosity slightly lower but low boilers are low and all other parameters in good shape. Continue to use and resample at normal interval. (GCD) 90% Distillation Point is severely high. COC Flash Point is severely low.
05/22/17	All measurements are the same or better than last sample with the exception of a slight rise in acid number and very slight decrease in viscosity. Flash point higher and low boilers lower. Continue to monitor as normal and resample in 3 months. COC Flash Point is severely low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.
03/30/17	Flash point is low, Sample date says 3/30/2017? low boilers are at an acceptable level and lower than previous sample. System okay to continue and resample in 45-60 days. COC Flash Point is severely low. (GCD) 10% Distillation Point is marginally low.
03/30/17	While the viscosity has only changed slightly the low boiler level is approaching 9% and the flash point is still low around 300 F. We recommend resampling at half the regular cycle to monitor the low boilers and flash point which may indicate a change in the upcoming months since there is no other way to reduce the low boilers. COC Flash Point is severely low. (GCD) 10% Distillation Point is abnormally low. (GCD) % < 335°C is marginally high.

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