

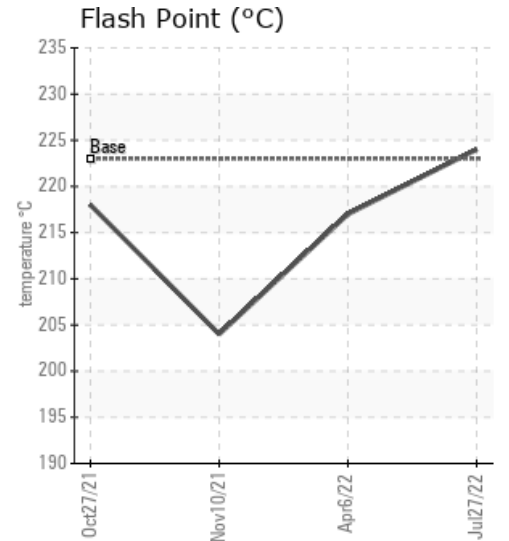
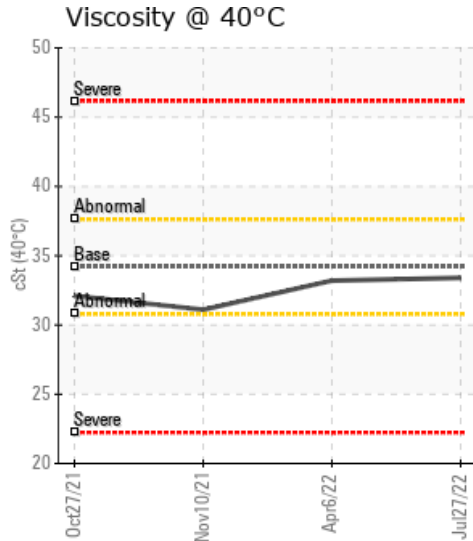
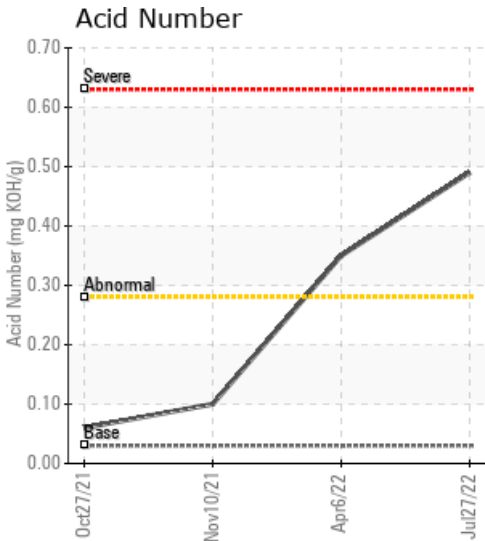
[VESTA SYLVAN LAKE] 6-20-37-1-W5 HEAT MEDIUM #2

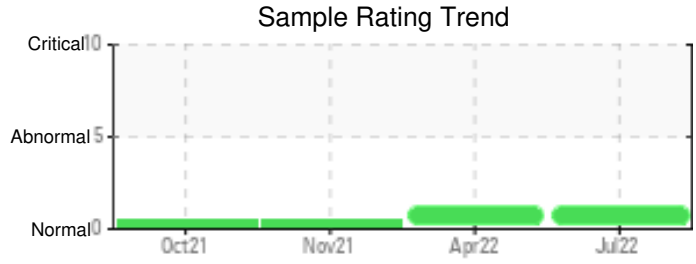
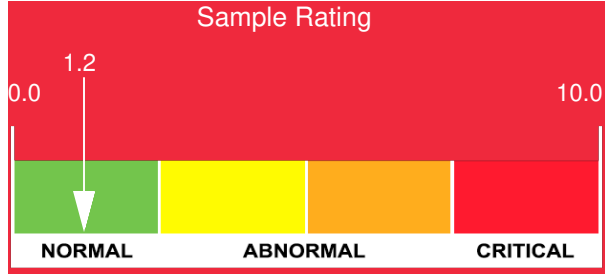
Customer: PTRHTF20261	System Information	Sample Information
VESTA ENERGY 6-20-37-1 W/5 SYLVON LAKE, AB Canada Attn: JASON COFFIN Tel: (403)318-1291 E-Mail: jcoffin@vestaenergy.com	System Volume: 13000 ltr Bulk Operating Temp: 329F / 165C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: ASPIRE MANUFACTURING	Lab No: 02502704 Analyst: Lyle Dach Sample Date: 07/27/22 Received Date: 07/29/22 Completed: 08/18/22 Lyle Dach lyle.dach@HFSinclair.com

Recommendation: Fluid acid number is up slightly higher but the fluid PH is 7.24, fluid PH is neutral and would not be a concern to the system. Ensure the blanket gas is working but overall the fluid is in good condition for continued service. Resample in 6 months.

Comments: Acid Number (AN) is abnormally high.

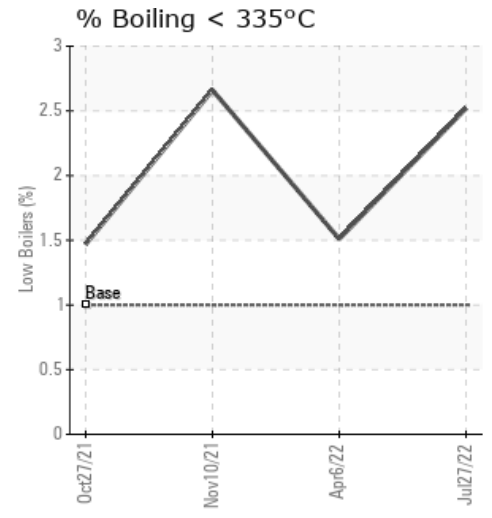
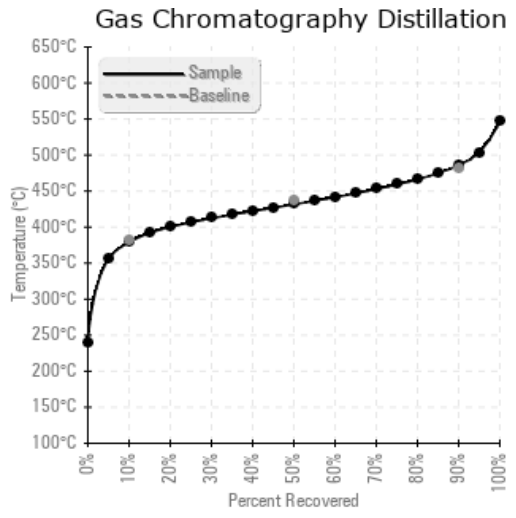
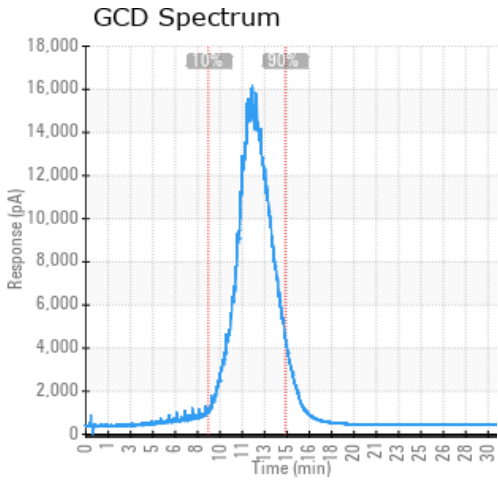
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
07/27/22	07/29/22	0.0m	bottom drain	435 / 224	100.6	33.4	0.49	0.248	714 / 379	809 / 432	907 / 486	2.52
04/06/22	04/07/22	0.0m	death reboiler	423 / 217	9.6	33.2	0.35	0.126	722 / 383	812 / 433	911 / 488	1.51
11/10/21	11/15/21	3.0m	pump disch piping	399 / 204	0.00	31.1	0.10	0.059	715 / 380	807 / 431	905 / 485	2.66
10/27/21	10/28/21	2.5m		424 / 218	44.4	32.1	0.06	0.035	724 / 384	811 / 433	909 / 487	1.47
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
07/27/22	3	0	0	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
04/06/22	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
11/10/21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/27/21	1	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

04/06/22	Acid number increased, check blanket gas system is functioning properly. Fluid oxidation will increase the acidity. All other sample results look to be good for continued service. Resample in 6 months. Acid Number (AN) is abnormally high.
11/10/21	Sample results indicate that the fluid is in suitable condition for continued service. Resample in 12 months.
10/27/21	Sample results indicate that the fluid is in good condition and acceptable for continued service. Metals, contamination, and water are all very low. Viscosity and flash point are in spec and acid number is low. GCD is good and pentane insolubles are low. Resample in 6 months.

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