

WANSON COMBI 1900

Customer: PTRHTF40035
 GEBR HAKVOORT BV
 ZUIDOOSTRAK 2
 FLEVOLAND
 URK, FLE NETHERLANDS
 Attn: Maintenance Manager
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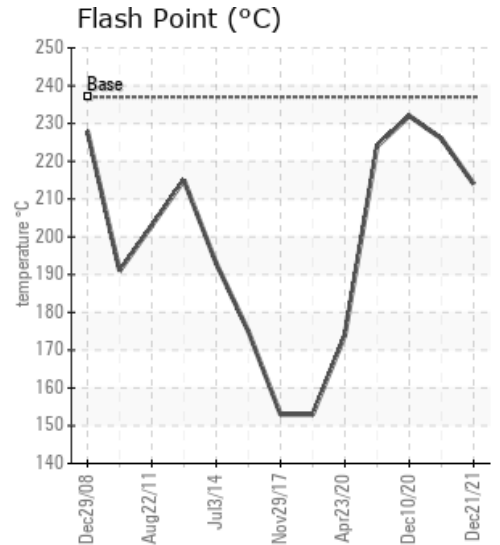
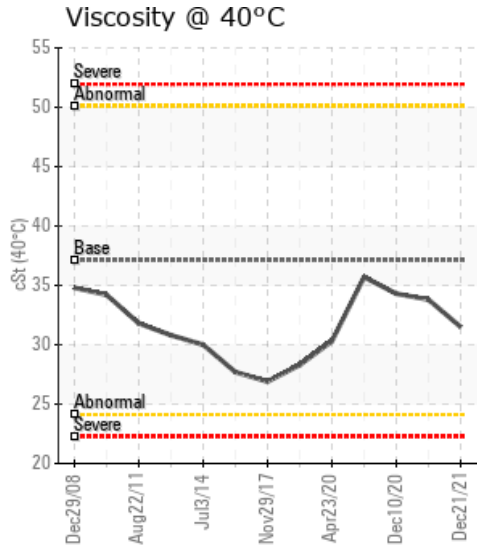
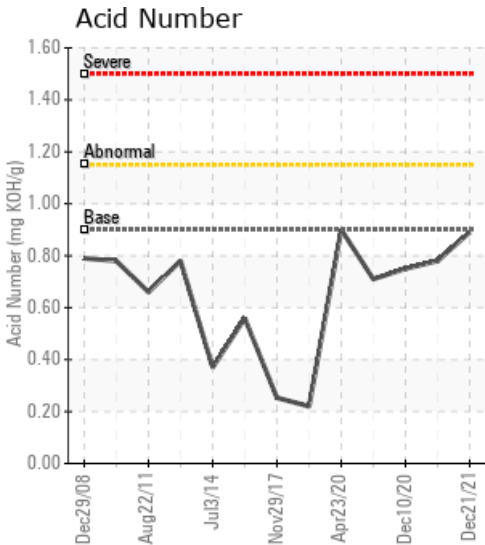
System Information
 System Volume: 1600 ltr
 Bulk Operating Temp: 300F / 149C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID
 Make: WANSON

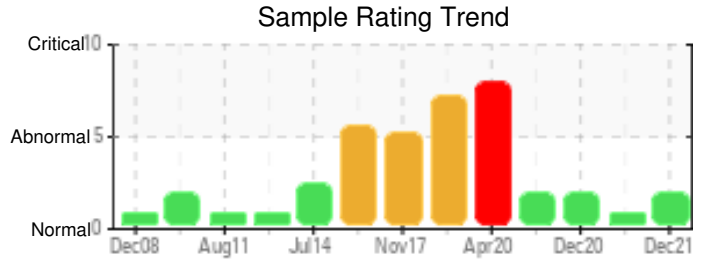
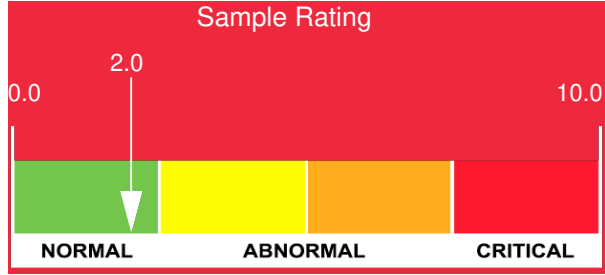
Sample Information
 Lab No: 02464315
 Analyst: Luis Rodriguez
 Sample Date: 12/21/21
 Received Date: 12/29/21
 Completed: 01/20/22
 Luis Rodriguez
 luis.rodriguez@hollyfrontier.com

Recommendation: Oil is fit for further use. Slowly raising low boilers and lower flash point could indicate early start of thermal cracking. GCD 90 high since the beginning of the last oil change but stable.

Comments: (GCD) 90% Distillation Point is severely high.

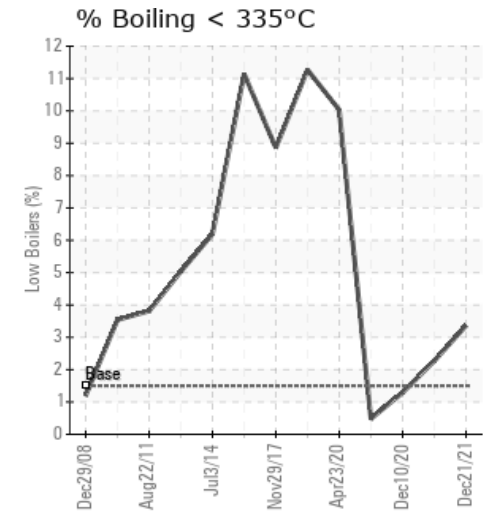
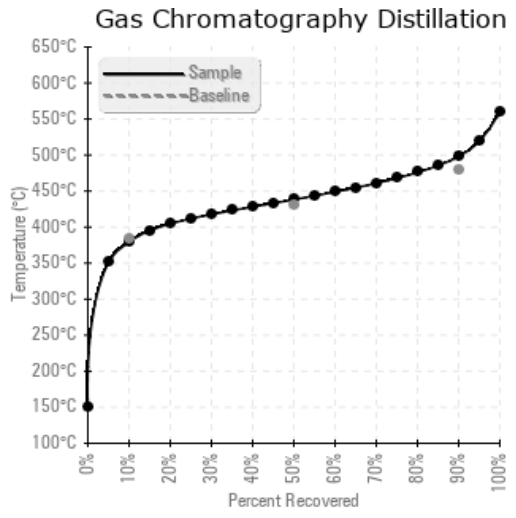
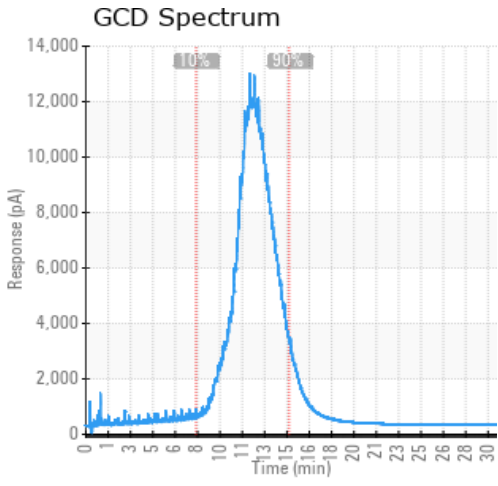
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/21/21	12/29/21	1.3y		417 / 214	35.3	31.5	0.89	0.293	715 / 380	821 / 438	929 / 498	3.36
03/11/21	03/16/21	0.5y		439 / 226	33.9	33.8	0.78	0.209	712 / 378	814 / 435	928 / 498	2.27
12/10/20	01/04/21	0.0y		450 / 232	19.2	34.3	0.75	0.069	732 / 389	825 / 441	930 / 499	1.29
09/29/20	10/06/20	1.0y		435 / 224	64.5	35.7	0.71	0.147	738 / 392	826 / 441	931 / 499	0.48
04/23/20	04/30/20	11.5y		345 / 174	189.7	30.3	0.90	0.760	628 / 331	801 / 427	912 / 489	10.03
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
12/21/21	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	31	2
03/11/21	16	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	25	2
12/10/20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	16	0
09/29/20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	34	0
04/23/20	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	1
Baseline Data			0	0						0			0	0				0	0				230	

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



Historical Comments	
03/11/21	Oil is fit for further use. (GCD) 90% Distillation Point is abnormally high.
12/10/20	Fluid fit for further use. Send in sample at next scheduled interval. (GCD) 90% Distillation Point is severely high.
09/29/20	Fluid fit for further use. Send in sample at next scheduled interval. (GCD) 90% Distillation Point is severely high.
04/23/20	Although Flash Pt (COC) and GCD have improved since the last analysis, recommendation to change oil remains. The overall sample rating has got worse, insoluble have increased and this supports further fluid degradation. GCD plot shows strong evidence of cracking Pentane Insolubles levels are severely high. (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.

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