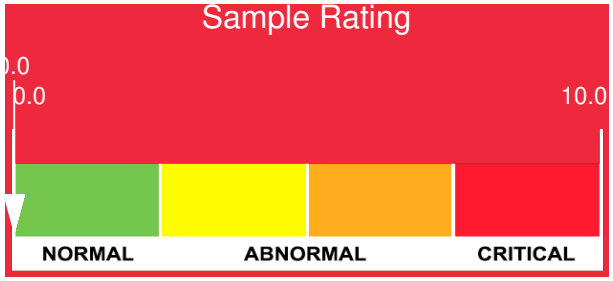
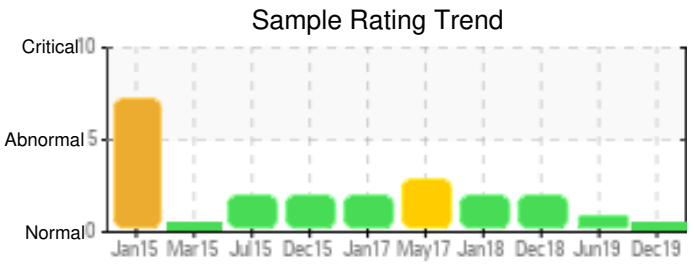




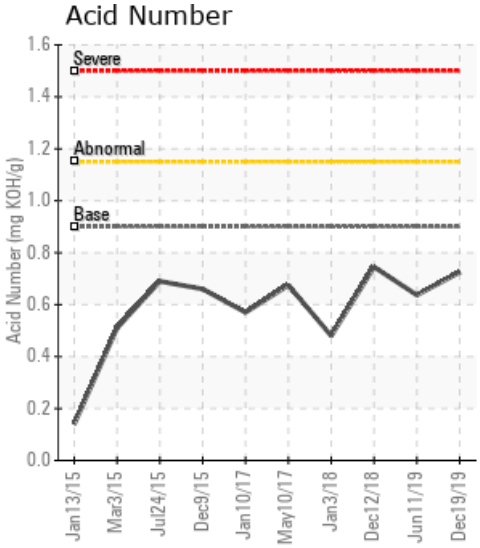
#1 COOKER (I-852-R-0120)

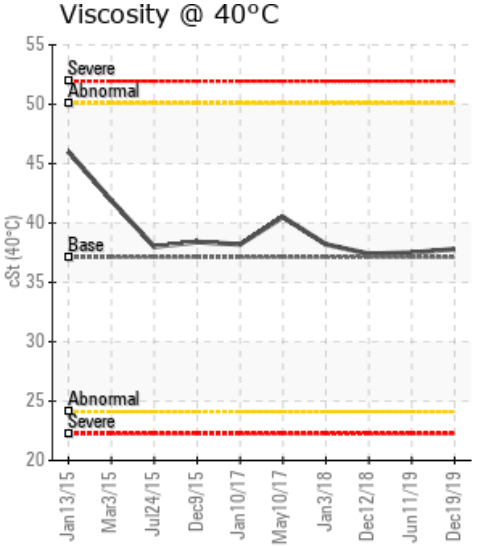
Customer: PTRHTF10156	System Information	Sample Information
INGREDION 1515 SOUTH DROVER ST INDIANAPOLIS, IN 46221 USA Attn: Randy Ward Tel: (317)656-2247 E-Mail: Randy.Ward@ingredion.com	System Volume: 200 gal Bulk Operating Temp: 400F / 204C Heating Source: Blanket: Fluid: PETRO CANADA PURITY FG HEAT TRANSFER FLUID Make: HEAT EXCHANGE/TRAN	Lab No: 02333352 Analyst: Yvette Trzcinski Sample Date: 12/19/19 Received Date: 01/22/20 Completed: 01/30/20 Yvette Trzcinski yvette.trzcinski@petrocanadalsp.com

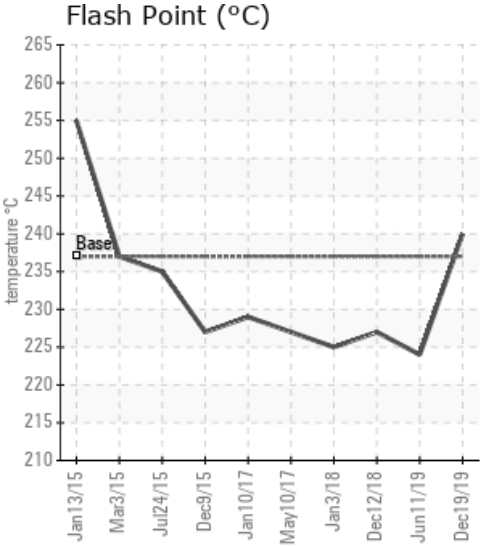
Recommendation: Heat Transfer fluid is within specifications - re sample in 6 months

Comments:

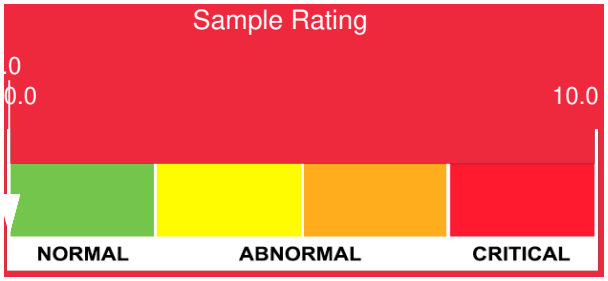
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
12/19/19	01/22/20	0m		464 / 240	21.1	37.8	0.725	0.065	744 / 396	809 / 432	904 / 484	0.00
06/11/19	06/28/19	0m	SAMPLE PORT	435 / 224	33.2	37.5	0.637	0.048	733 / 390	818 / 437	925 / 496	0.00
12/12/18	06/20/19	0m	SAMPLE PORT	441 / 227	27.3	37.4	0.745	0.295	746 / 396	829 / 443	939 / 504	0.00
01/03/18	02/13/18	12m		437 / 225	15.1	38.2	0.48	0.051	744 / 396	829 / 443	935 / 502	0.00
05/10/17	05/16/17	6m	DRAIN PORT	441 / 227	31.8	40.5	0.675	0.045	735 / 391	844 / 451	992 / 533	0.46
Baseline Data				459 / 237		37.12	0.90		721 / 383	807 / 431	892 / 478	1.5

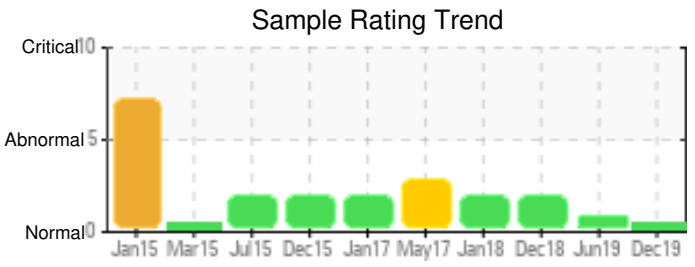






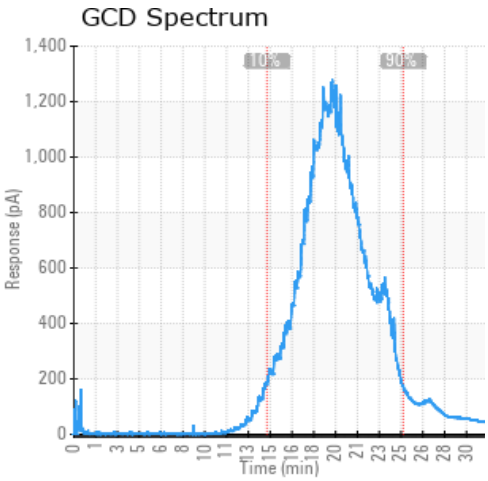
PETRO-CANADA LUBRICANTS

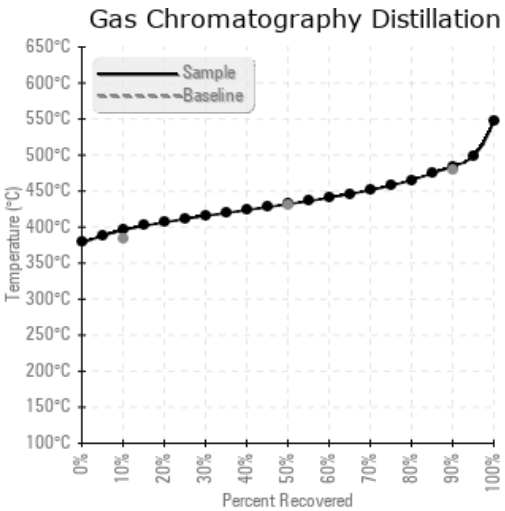


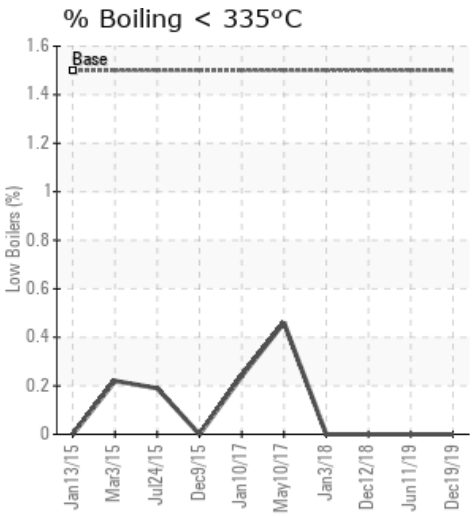


Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
12/19/19	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	4
06/11/19	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146	4
12/12/18	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161	6
01/03/18	20	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	142	0
05/10/17	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150	0
Baseline Data			0	0						0			0	0					0				230	

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







Historical Comments

06/11/19	Oxidation is occurring in the system but total acid number and GCD at 90% are slightly better than the sample results in December 2018. Fluid is acceptable for continued service and re sample in 6 months (GCD) 90% Distillation Point is abnormally high.
12/12/18	Sample is dated December 12, 2018 a new sample should be taken and sent in. Oil is showing signs of oxidation the acid number is increasing as is the 90% boiling point indicating heavier molecules from oxidation occurring. Resample within the next 2-3 months (GCD) 90% Distillation Point is severely high.
01/03/18	Viscosity and Acid number are within acceptable levels and low insoluble levels fluid is acceptable for further service. resample in 4 months
05/10/17	This system has seen little to no addition judging by the results, therefore the condition appears to be similar to the last sample. No action deemed necessary at this time, just re-sample in 6 months for normal monitoring. (GCD) 90% Distillation Point is severely high. (GCD) 50% Distillation Point is marginally high.