

[Orlen Upstream Canada / 16-7-63-5w6] 5510/5610 HEAT MEDIUM

Customer: PTRHTF20175
 QUADRA CHEMICALS
 7802 98 STREET
 CLAIRMONT, AB T0H 0W0 Canada
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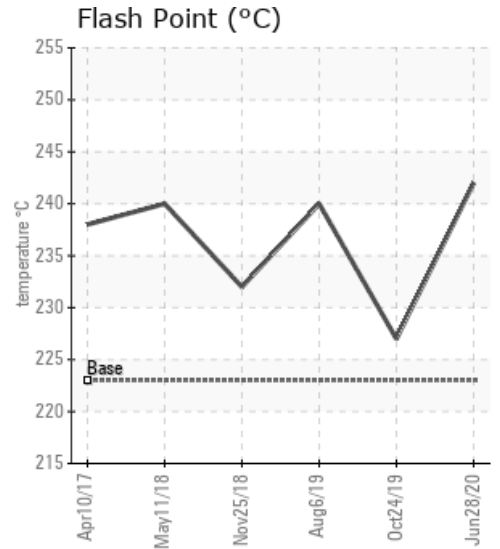
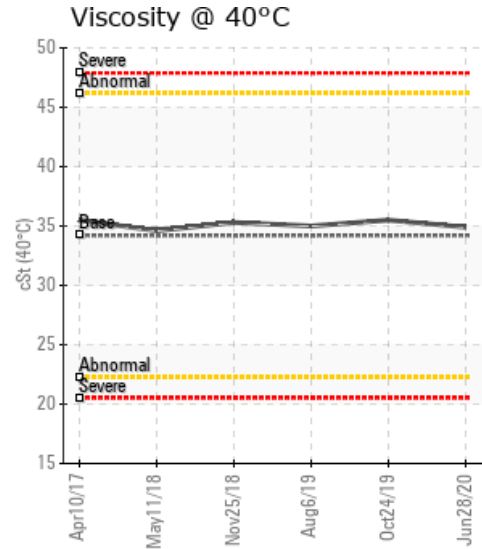
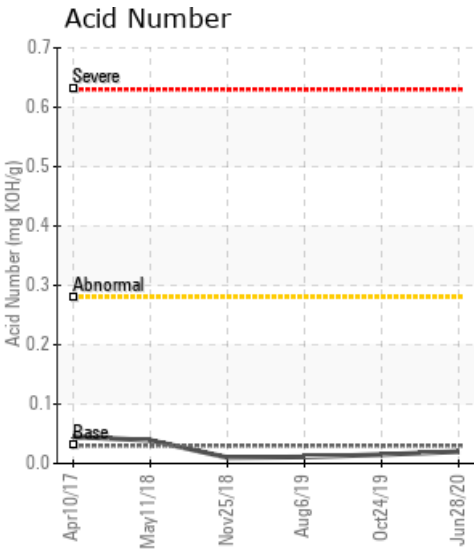
System Information
 System Volume: 10000 ltr
 Bulk Operating Temp: 374F / 190C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: RUSHTON

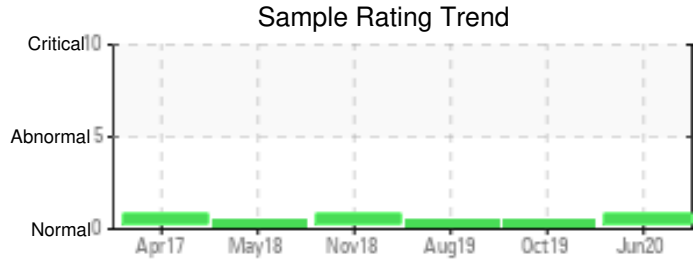
Sample Information
 Lab No: 02364171
 Analyst: Peter Harteveld
 Sample Date: 06/28/20
 Received Date: 07/13/20
 Completed: 07/16/20
 Peter Harteveld
 peter.harteveld@petrocanadalsp.com

Recommendation: The fluid is in a good condition and suitable for further use. 10% and 90% GCD temperatures are slightly high. This is no concern at this time. Please re-sample in 12 months.

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

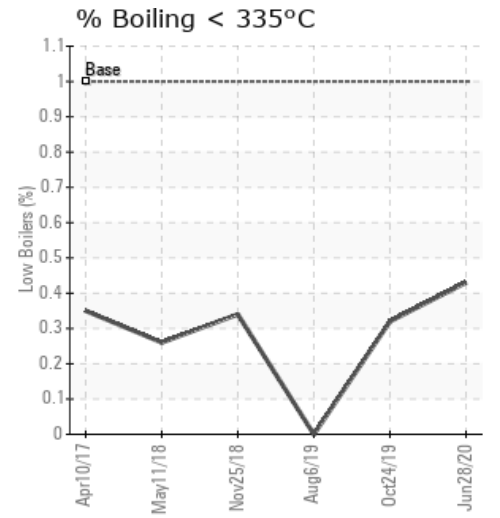
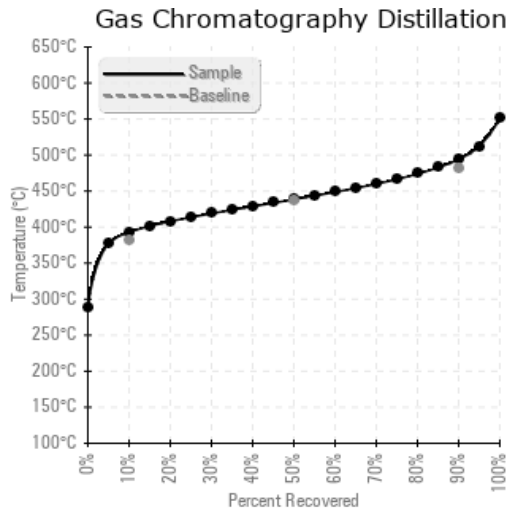
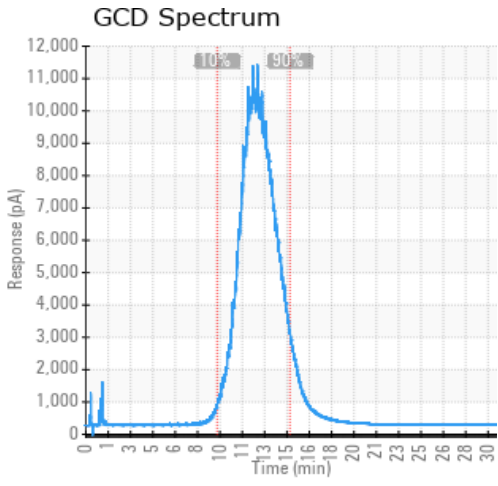
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
06/28/20	07/13/20	24m		468 / 242	36.0	34.9	0.02	0.042	739 / 393	821 / 438	921 / 494	0.43
10/24/19	11/11/19	30m	FLOAT COLUMN	441 / 227	0.6	35.5	0.015	0.130	715 / 380	802 / 428	908 / 487	0.32
08/06/19	08/30/19	28m	SIGHTGLASS	464 / 240	8.6	35.0	0.011	0.160	722 / 383	794 / 423	886 / 475	0.00
11/25/18	12/14/18	18m		450 / 232	14.9	35.3	0.01	0.055	728 / 386	815 / 435	920 / 493	0.34
05/11/18	05/30/18	12m	ORLEN UPSTREAM	464 / 240	11.5	34.6	0.039	0.030	726 / 385	814 / 435	903 / 484	0.26
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
06/28/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/24/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/06/19	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11/25/18	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/11/18	0	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

10/24/19	This was the re-sample after one of the initial August 2019 samples indicated excess water. Sample results indicate that the heat transfer fluid is suitable for continued service. Please re-sample in 12 months
08/06/19	Sample results indicate that the heat transfer fluid is suitable for continued service. Please re-sample in 12 months
11/25/18	sample results indicate that the fluid is suitable for continued service. Please re-sample in 12 months (GCD) 90% Distillation Point is marginally high.
05/11/18	Sample results indicate that fluid is suitable for continued service. Re-sample in 12 months.

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