

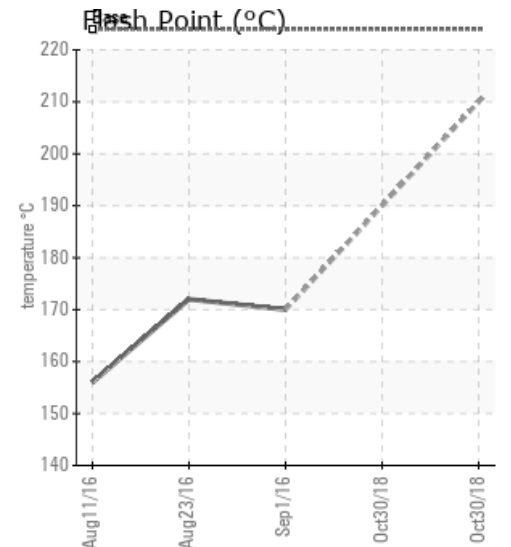
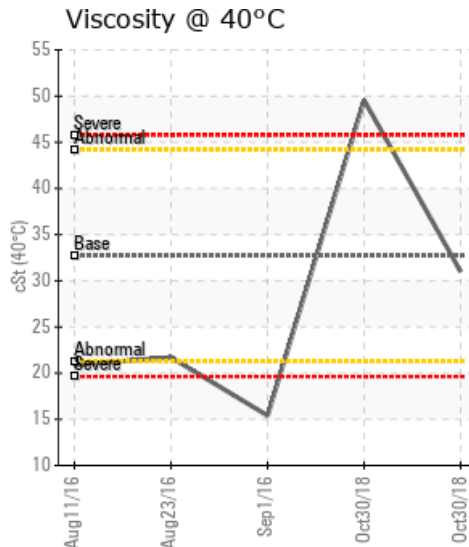
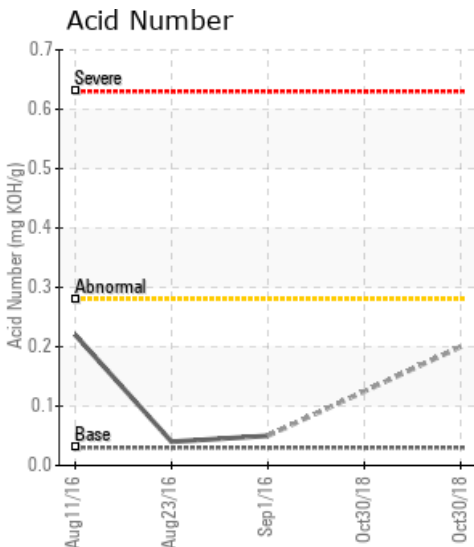
[HOH C Box] SILANE 4.0 DISTILLATION

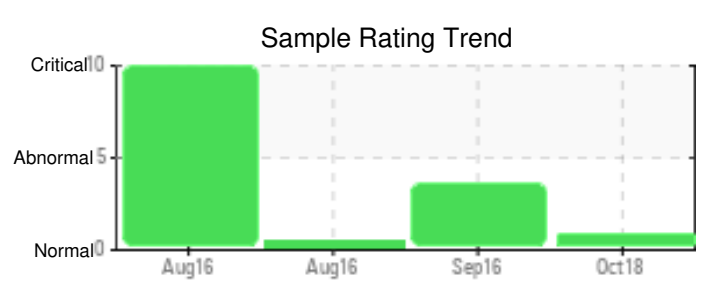
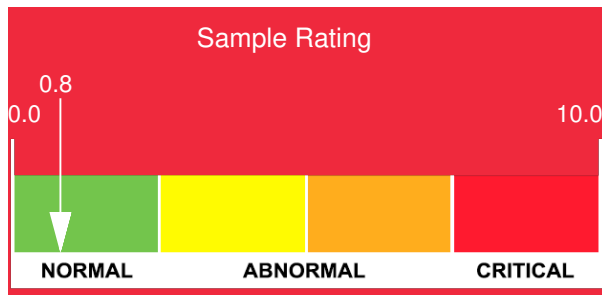
Customer: PTRHTF10093	System Information	Sample Information
REC GROUP 3322 ROAD N.N.E. MOSES LAKE, WA 98837 USA Attn: Sam Bright Tel: (509)766-8902 E-Mail: sam.bright@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: COEN	Lab No: 02249719 Analyst: Ron LeBlanc Sample Date: 10/30/18 Received Date: 11/06/18 Completed: 11/09/18

Recommendation: Pentane insolubles rose a bit. Could be due to sample procedure. Silicon dropped significantly. Re-sample in 3 months.

Comments: Pentane Insolubles levels are abnormally high.

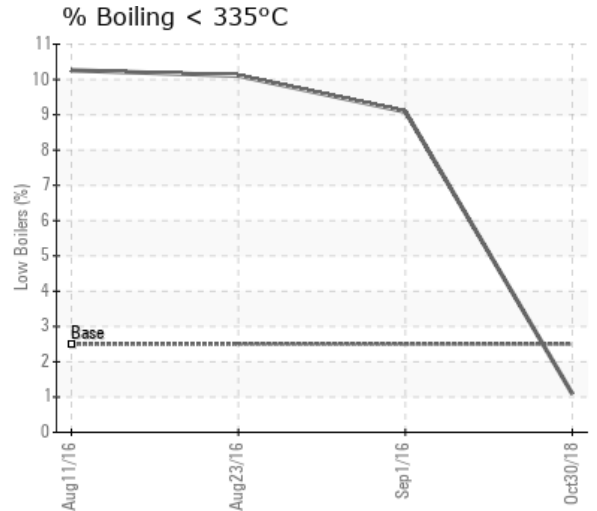
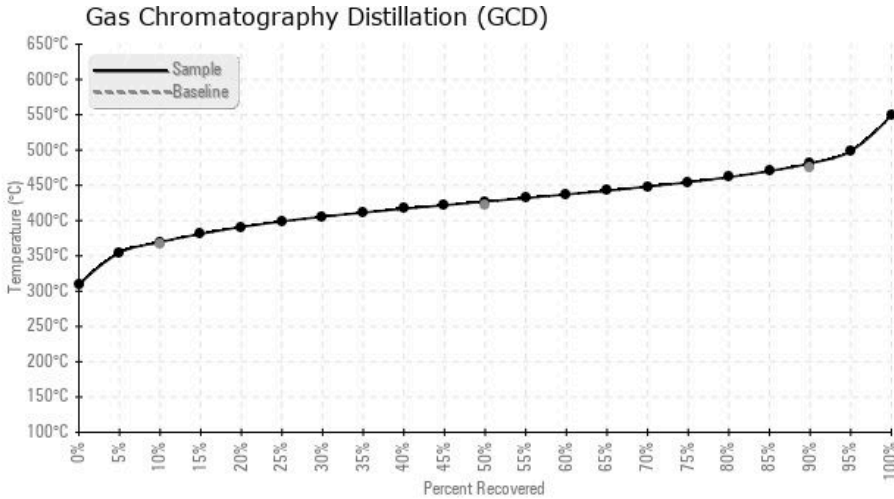
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
10/30/18	11/06/18	25m		410 / 210	23.1	31.0	0.20	0.470	697 / 370	800 / 427	898 / 481	1.09
10/30/18	09/17/08	25m				49.56						
09/01/16	09/06/16	58m	PRV VENT NR TCS VAP	338 / 170	0.00	15.4	0.05	0.133	642 / 339	787 / 420	888 / 476	9.09
08/23/16	08/24/16	58m	PRV VENT NR TCS VAP	342 / 172	0.00	21.7	0.040	0.080	625 / 330	786 / 419	889 / 476	10.11
08/11/16	08/15/16	58m	DISTO HOT OIL	313 / 156	38.8	20.9	0.22	0.517	622 / 328	787 / 420	890 / 477	10.26
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5





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
10/30/18	112	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	226	0
10/30/18	128	1	0	4	6	2	2	0	0	0	36	4	2	0	0	0	0	100	28	4353	0	1329	1568	
09/01/16	40	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	62	0
08/23/16	51	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	64	0
08/11/16	220	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	2	0	0	0	0	0	135	0
Baseline Data			0	0						0			0	0					0				270	

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



Historical Comments	
10/30/18	We suspect abnormal contamination may be due to sampling method. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. High concentration of visible dirt/debris present in the oil. The condition of the oil is acceptable for the time in service.
09/01/16	*** NOTE: Viscosity was run two times 15.4, 15.4 cSt *** Visc @ 40°C is severely low. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. Results have remained consistent post fire. COC FLASH POINT REMAINS ABNORMALLY LOW. Visc @ 40°C is severely low. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high.
08/23/16	COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low. Si has dropped significantly and Viscosity improved slightly. COC flash point has come up slightly since last sample. Pentane has reduced as well. COC Flash Point is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.
08/11/16	See notes below. PQ levels are abnormal. Iron ppm levels are abnormal. Silicon ppm levels are abnormally high. Pentane Insolubles levels are abnormally high. COC Flash Point is severely low. Visc @ 40°C is abnormally low. (GCD) % < 335°C is marginally high. (GCD) 10% Distillation Point is marginally low.

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