

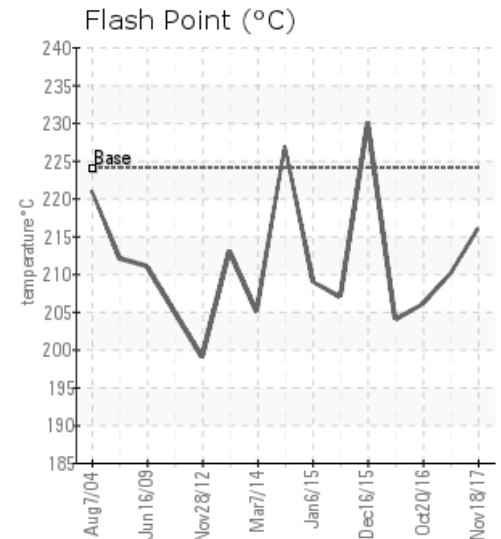
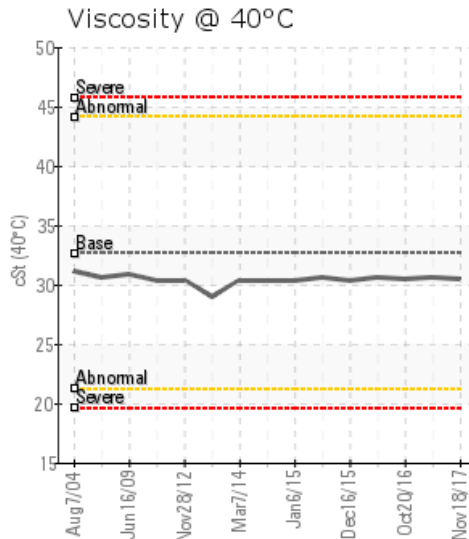
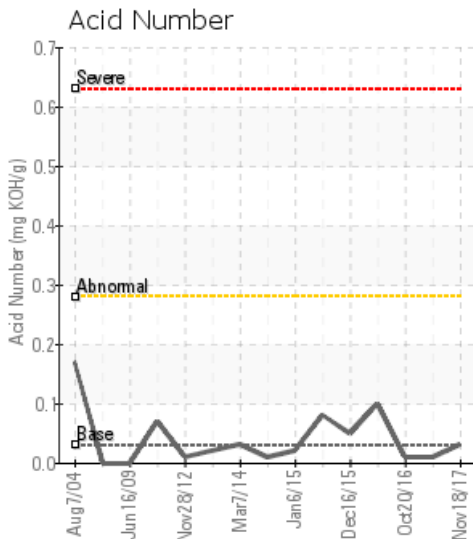
## PHASE 1

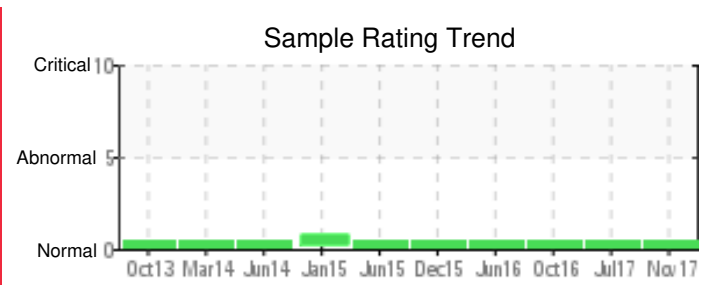
Customer: PTRHTF10092	System Information	Sample Information
<b>REC GROUP</b> 119410 RICK JONES WAY BUTTE (SILVER BOW), MT 59750 USA Attn: Bill Telling Tel: (406)496-9929 E-Mail: bill.telling@recsilicon.com	System Volume: 41640 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: EXOTHERM	Lab No: 02185628 Analyst: Ron LeBlanc Sample Date: 11/18/17 Received Date: 12/04/17 Completed: 12/06/17 To discuss this report contact Ron LeBlanc at (541)967-6499

Recommendation: Sample appears normal. Resample at normal interval.

Comments:

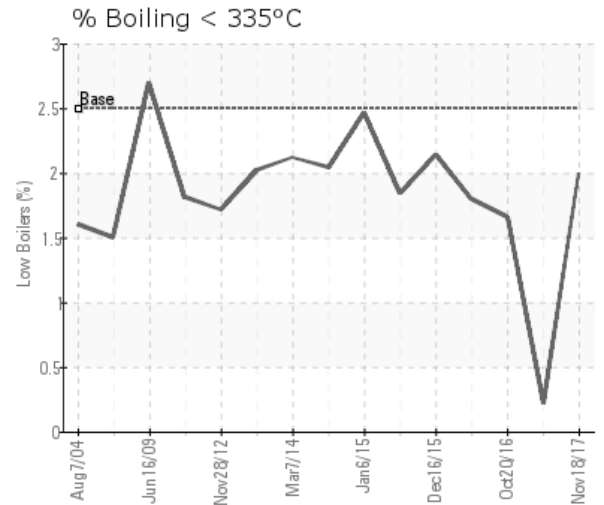
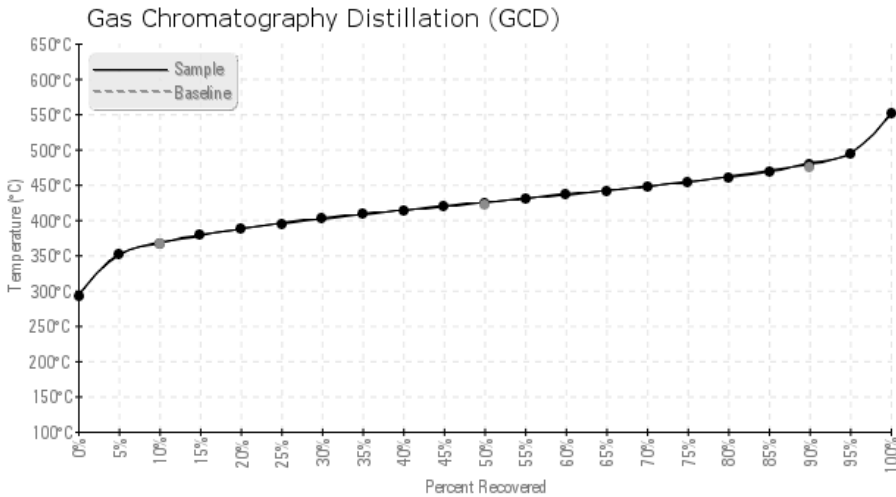
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
11/18/17	12/04/17	13y		421 / 216	8.7	30.5	0.032	0.035	693 / 367	796 / 425	895 / 480	2.00
07/19/17	08/03/17	13y	PH1 HOT OIL	410 / 210	18.8	30.6	0.01	0.042	704 / 373	794 / 424	888 / 476	0.22
10/20/16	11/03/16	18y	HOT OIL RETURN	403 / 206	5.9	30.5	0.01	0.077	690 / 366	789 / 421	883 / 473	1.66
06/20/16	06/29/16	18y	UPSTRM EXPNSN DRUM	399 / 204	23.1	30.6	0.100	0.099	695 / 368	801 / 427	896 / 480	1.80
12/16/15	12/30/15	18y	UPSTREAM EXPAN DRUM	446 / 230	19.7	30.4	0.05	0.046	689 / 365	788 / 420	881 / 472	2.14
06/11/15	06/26/15	18y	UPSTREAM EXPANSION D	405 / 207	28.3	30.6	0.081	0.151	692 / 367	794 / 423	891 / 477	1.84
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
11/18/17	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	10	0
07/19/17	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	12	0
10/20/16	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	11	0
06/20/16	10	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	16	0
12/16/15	7	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	12	0
06/11/15	11	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	15	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

07/19/17	Sample is normal. No issues detected.
10/20/16	Sample appears normal. Sample in 4-6 months.
06/20/16	Sample appears normal. Resample in 6 months.
12/16/15	Sample is normal
06/11/15	Sample appears normal. Resample at regular interval.

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