

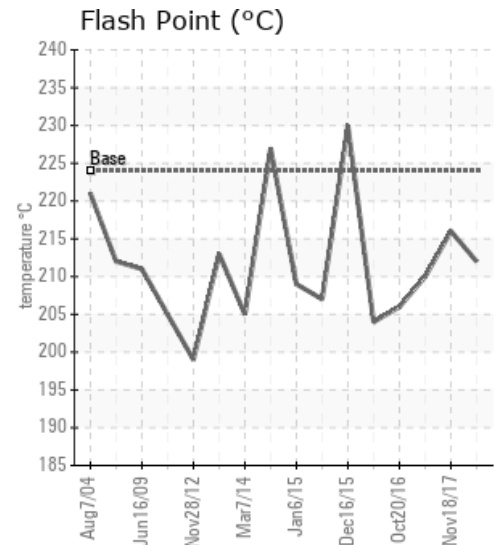
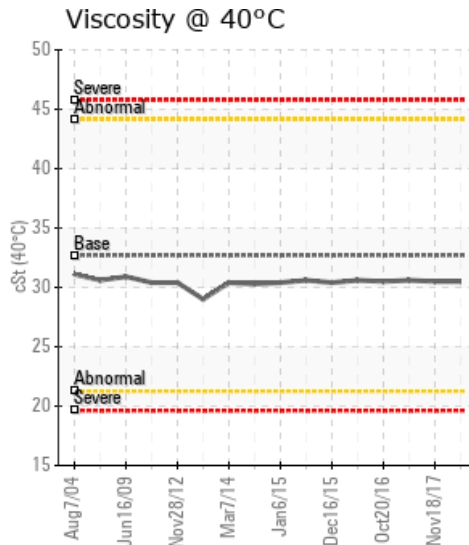
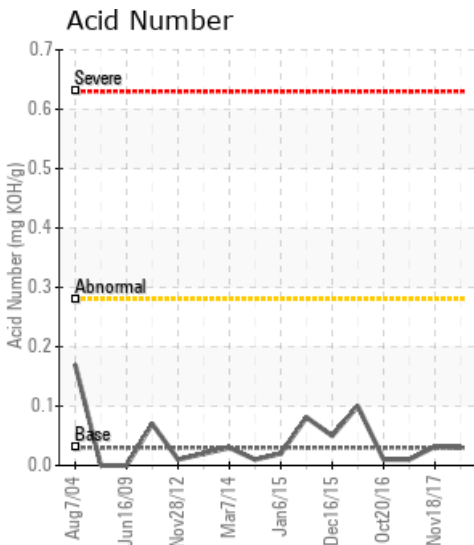
PHASE 1

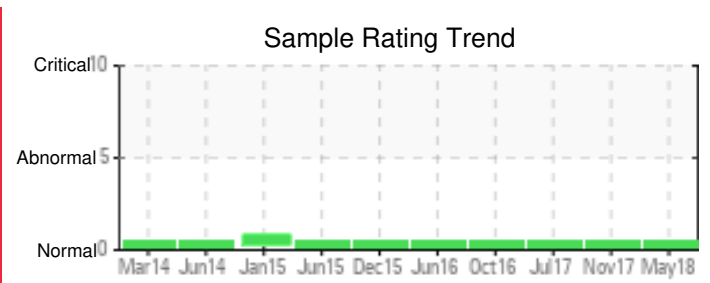
Customer: PTRHTF10092	System Information	Sample Information
REC GROUP 119410 RICK JONES WAY BUTTE (SILVER BOW), MT 59750 USA Attn: ZACK KELLY Tel: (406)496-9717 E-Mail: zack.kelly@recgroup.com	System Volume: 41640 gal Bulk Operating Temp: 425F / 218C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make: EXOTHERM	Lab No: 02218007 Analyst: Ron LeBlanc Sample Date: 05/15/18 Received Date: 05/24/18 Completed: 05/25/18 To discuss this report contact Ron LeBlanc at (541)678-7044

Recommendation: silicon has dropped significantly over last two samples. All other results appear normal. Re-Sample at regular interval.

Comments:

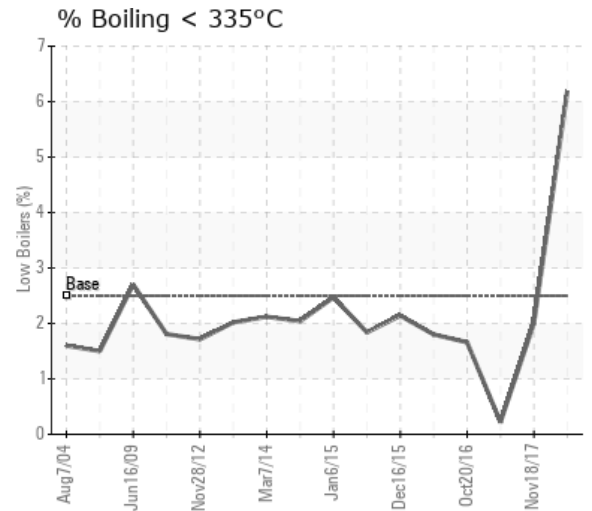
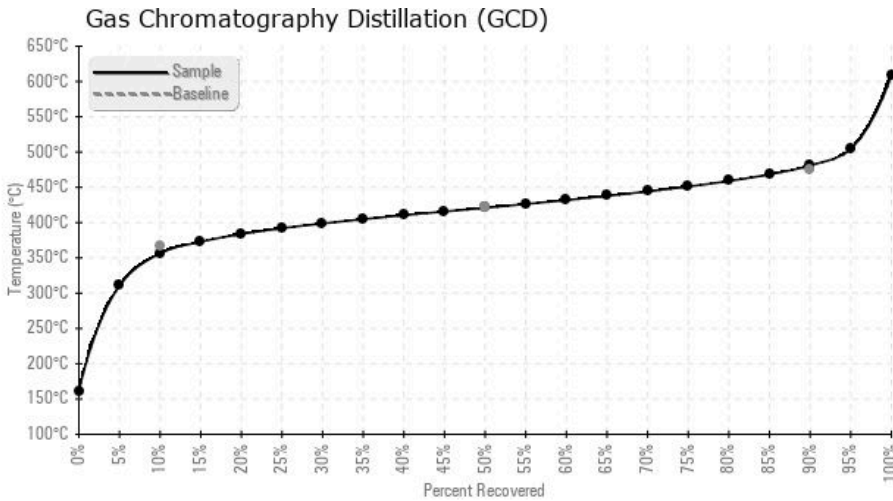
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
05/15/18	05/24/18	14y	PHASE1 HOT OIL SURGE	414 / 212	7.0	30.5	0.03	0.030	674 / 357	790 / 421	898 / 481	6.19
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
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
05/15/18	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
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
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

11/18/17	Sample appears normal. Resample at normal interval.
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

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