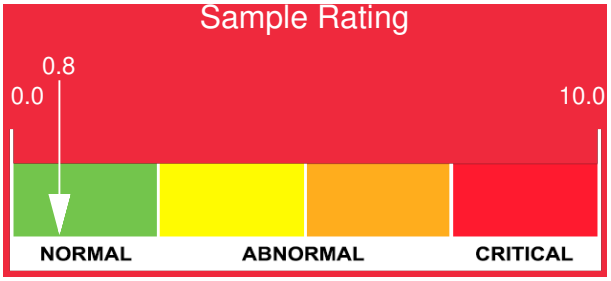
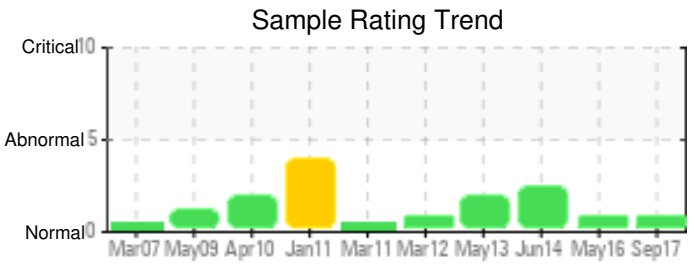




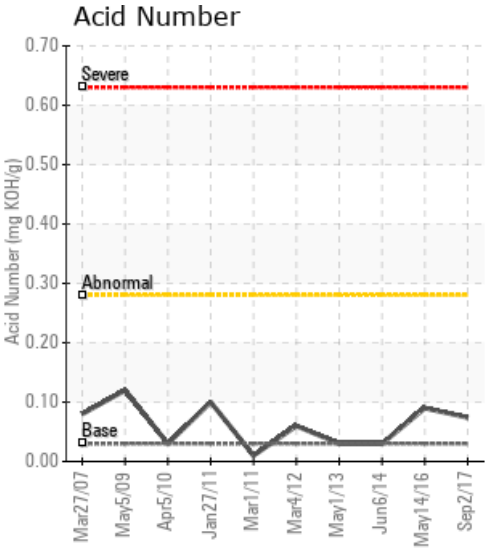
LINE 1 FILLER HEATER SYSTEM

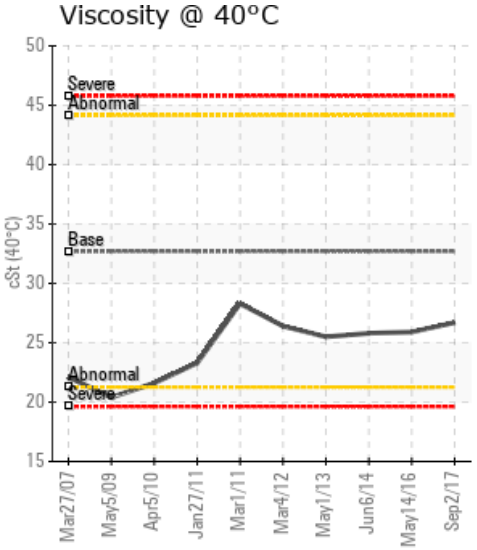
Customer: PTRHTF10069	System Information	Sample Information
CERTAINTEED - SAINT GOBAIN 3303 EAST 4TH AVENUE SHAKOPEE, MN 55379 USA Attn: Patrick Wallace Tel: E-Mail: patrick.wallace@saint-gobain.com	System Volume: 5670 gal Bulk Operating Temp: 428F / 220C Heating Source: Blanket: Fluid: PETRO CANADA CALFLO AF Make:	Lab No: 02168853 Analyst: Gaston Arseneault Sample Date: 09/02/17 Received Date: 09/12/17 Completed: 09/13/17 Gaston Arseneault gaston.arseneault@hollyfrontier.com

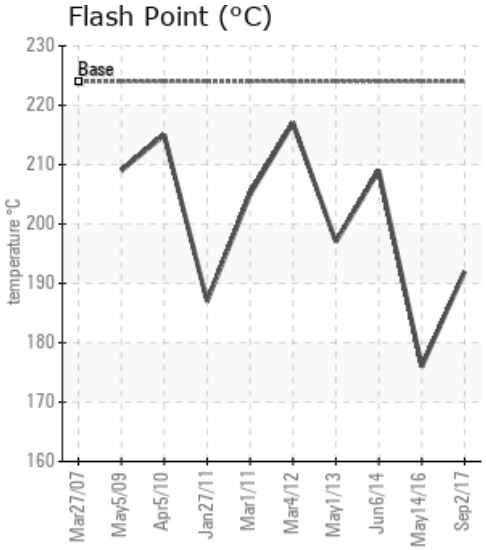
Recommendation: The oil condition is consistent with previous samples. The viscosity remains a little bit low. No immediate action is required at this time but you can vent the low boilers out and replace the lost volume with fresh oil as preventative measure. Re-sample at next normal interval.

Comments: COC Flash Point is marginally low.

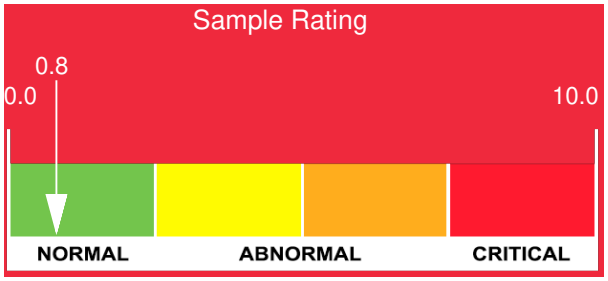
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
09/02/17	09/12/17	4.0y	MAIN SYSTEM FLOW	378 / 192	9.6	26.7	0.074	0.035	685 / 363	788 / 420	889 / 476	3.31
05/14/16	05/24/16	0.0y	MAIN SYSTEM FLOW	349 / 176	1.8	25.9	0.090	0.046	682 / 361	787 / 419	880 / 471	3.93
06/06/14	06/17/14	0.0y	MAIN FLOW NEAR PUMP	408 / 209	74.8	25.8	0.03	0.054	662 / 350	761 / 405	861 / 460	5.50
05/01/13	05/15/13	0.0y	MAIN SYSTEM FLOW	387 / 197	53.0	25.5	0.030	0.036	714 / 379	783 / 417	831 / 444	0.00
03/04/12	03/14/12		MAIN SYSTEM FLOW	423 / 217	64	26.4	0.06	0.019	688 / 365	779 / 415	877 / 469	2.123
Baseline Data				435 / 224		32.7	0.03		693 / 367	790 / 421	887 / 475	2.5

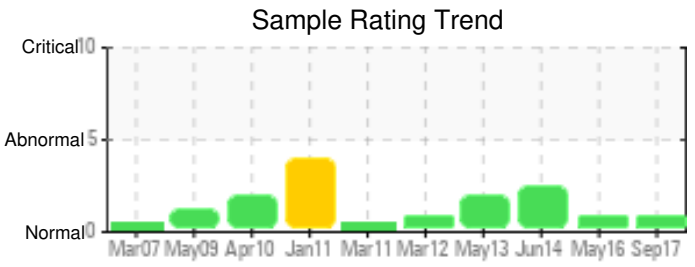






PETRO-CANADA LUBRICANTS

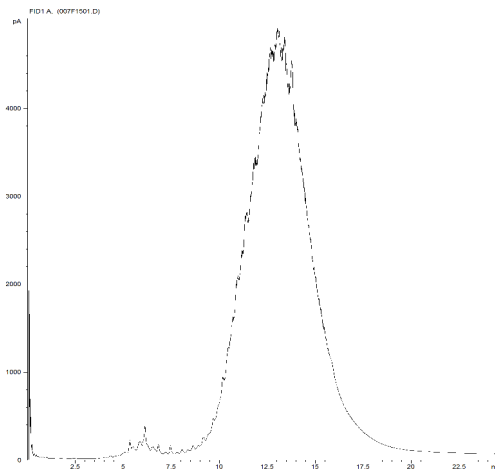


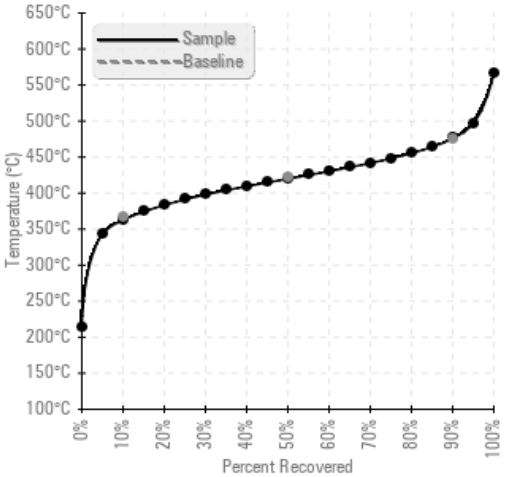


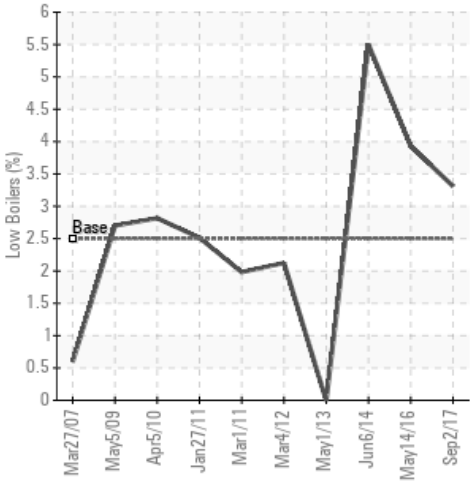
Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
09/02/17	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0
05/14/16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0
06/06/14	33	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0	60	1
05/01/13	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	52	0
03/04/12	178	0	0	1	1	0	1	0	0	0	6	0	0	0	0	0	1	0	4	2	7	1	35	2
Baseline Data			0	0						0			0	0					0				270	

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

GCD Spectrum







Historical Comments

05/14/16	COC Flash Point is abnormally low. Some low boiler formation is evident in the GCD. Other properties look good. Resample next interval to monitor. COC Flash Point is abnormally low.
06/06/14	Results appear normal sine the last sample and we do not see any concerning trend. Re-sample same time next year. (GCD) 90% Distillation Point is marginally low.
05/01/13	Fluid is in good condition and suitable for further use. Please continue to sample the system at the regular interval (9-12 months). The computer continues to flag some of the properties as it compares the oil against the Calflo AF reference in the database. (GCD) 90% Distillation Point is severely low.
03/04/12	The reason why some data is flagged and color coded this time and it did not in the past is because the lab previously compared results against Mobiltherm, while now they probably changed it to Calflo AF based on what was indicated on the paperwork. The oil condition looks excellent at this time. We will remind you when the next round of sampling is due.