

[Disto Oil Loop] SILANE 4.0 DISTILLATION

Customer: PTRHTF10093

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 Information

System Volume: 50000 gal

Bulk Operating Temp: 420F / 216C

Heating Source:

Blanket: Fluid:

Make: COEN

Sample Information

Lab No: I-508710

Analyst: Gaston Arseneault Sample Date: 11/13/11 Received Date: 01/03/12 Completed: 01/10/12

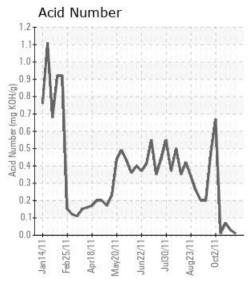
To discuss this report contact Gaston

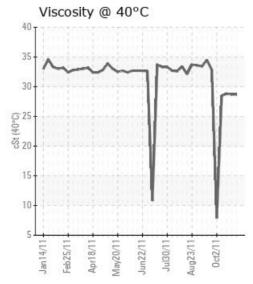
Arseneault at 973-986-6503

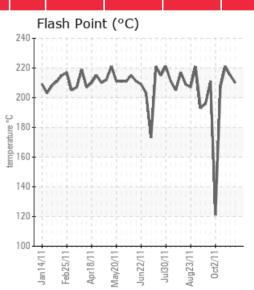
Recommendation: This sample show normal results and no sudden change in Silicon, TAN or solids. Let's keep monitoring the oil in this plant.

Comments: Data indicates no abnormal findings. Resample at normal interval.

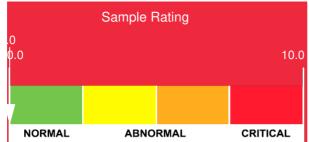
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	300 GCD	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/ g	%wt	°F/°C	°F/°C	°F/°C	%
11/13/11	01/03/12		4.0 TCS VAPORIZEN	410 / 210	11	28.7	0.01	0.010	690 / 366	795 / 424	894 / 479	4.101
11/09/11	11/17/11		4.0 EXPANSION TANK	419 / 215	16	28.7	0.03	0.025	692 / 367	795 / 424	895 / 479	3.592
11/01/11	11/03/11		VAPORIZER	430 / 221	3	28.8	0.07	0.008	690 / 365	794 / 424	893 / 479	4.094
10/18/11	10/20/11		EXPANSION TANK	405 / 207	22	28.5	0.01	0.032	688 / 365	794 / 423	894 / 479	4.311
10/02/11	10/04/11		VENT	250 / 121	75	7.9	0.67	0.022	453 / 234	670 / 354	771 / 411	36.62
09/26/11	09/27/11		TES REBOILER FLOW ME	412 / 211	4	32.8	0.47	0.157	703 / 373	795 / 424	888 / 476	1.468

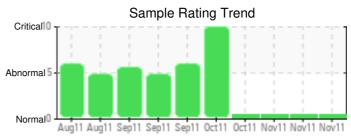






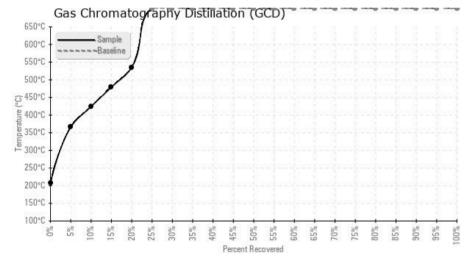


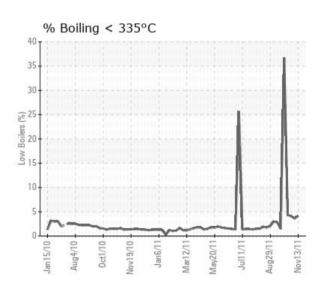




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
11/13/11	7	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	172	0
11/09/11	6	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	185	0
11/01/11	7	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	202	0
10/18/11	8	0	0	0	0	0	1	1	0	0	8	0	0	0	0	0	0	0	4	0	1	0	197	1
10/02/11	17	0	0	0	0	0	1	1	0	0	145	0	0	0	0	0	0	0	5	0	1	0	4	5
09/26/11	8	0	0	0	0	0	1	0	0	0	408	0	0	0	0	0	0	0	0	1	0	0	15	0
Baseline Data																								

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





	Historical Comments
11/09/11	Silicon remains very low _(~6ppm) which is a good thing. All other properties remain constant form the last samples after the cleaning and flushing.
11/01/11	Results look identical to 2 weeks ago. No rise in silicon. Let's keep monitoring the fluid.
10/18/11	The properties look very much like Calflo AF. There is a trace amount of diesel present left from the cleaning as see in the 4.3% low boilers, but overall this baseline sample looks good. Let's see what the R&D analysis shows. Silicon has dropped down to 8 ppm.
10/02/11	
09/26/11	

Petro-Canada makes no representation or warranty of any kind, either express or implied, as to the accuracy or completeness of the analysis and assumes no responsibility and shall have no liability whatsoever with respect to such analysis, or a party's use of it. Petro-Canada is a division of HollyFrontier Corporation.