

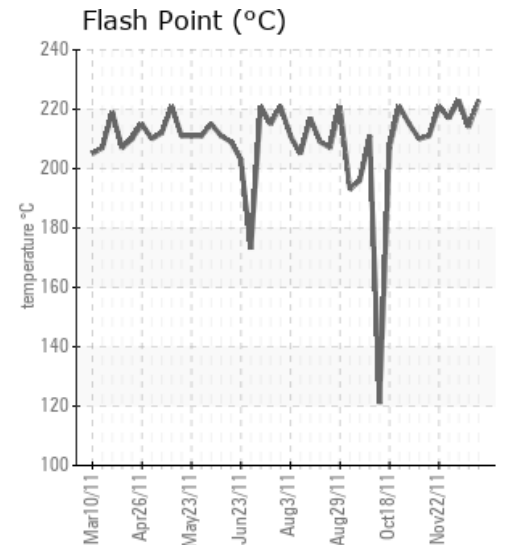
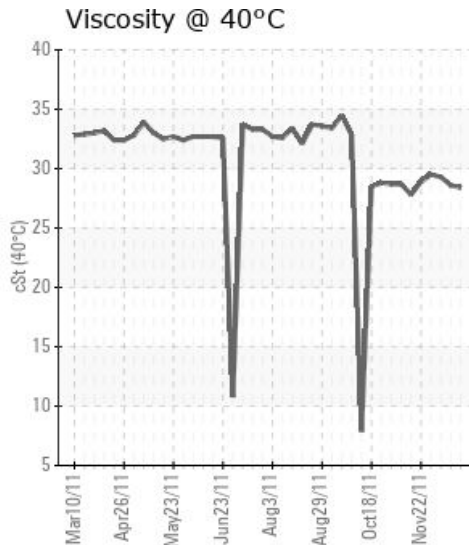
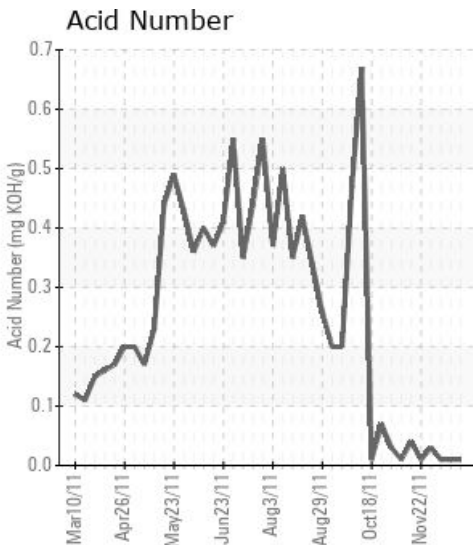
## [Disto Oil Loop] SILANE 4.0 DISTILLATION

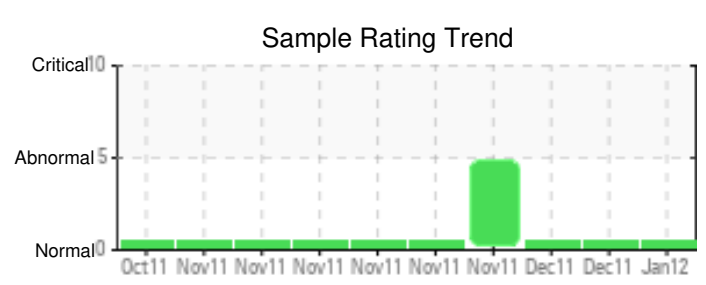
Customer: PTRHTF10093	System Information	Sample Information
<b>REC GROUP</b> 3322 ROAD N N.E. MOSES LAKE, WA 98837 USA Attn: Sam Bright Tel: (509)766-8902 E-Mail: sam.bright@recsilicon.com	System Volume: 50000 gal Bulk Operating Temp: 420F / 216C Heating Source: Blanket: Fluid: Make: COEN	Lab No: I-526539 Analyst: Gaston Arseneault Sample Date: 01/09/12 Received Date: 01/13/12 Completed: 01/17/12 To discuss this report contact Gaston Arseneault at 973-986-6503

Recommendation: Results look very much like previous sample. Silicon is stable around 4-5ppm.

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

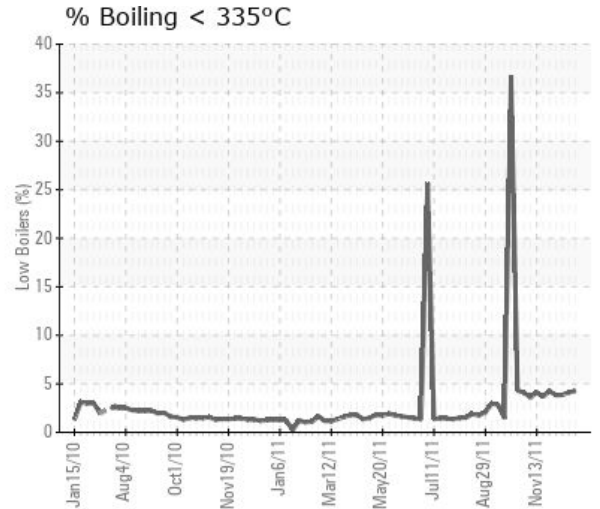
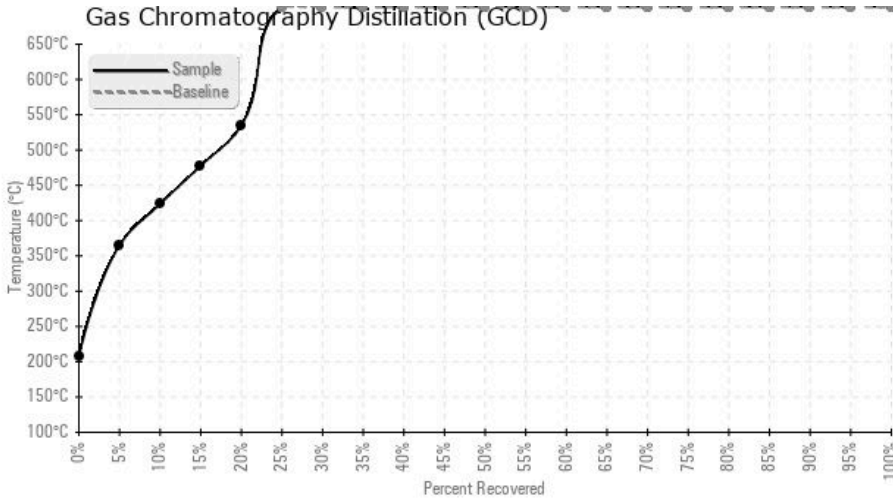
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/09/12	01/13/12		TCS VAPORIZER 4.0 SI	433 / 223	13	28.4	0.01	0.012	689 / 365	794 / 424	892 / 478	4.278
12/27/11	01/03/12		4.0 TCS VAPORIZEN	417 / 214	10	28.6	0.01	0.015	691 / 366	795 / 424	894 / 479	4.113
12/13/11	12/15/11		TCS COLUMBIA REBOILE	433 / 223	15	29.3	0.01	0.032	691 / 366	793 / 423	893 / 478	3.857
11/29/11	12/01/11		REBOILER	423 / 217	6	29.5	0.03	0.063	693 / 367	795 / 424	894 / 479	3.828
11/22/11	12/01/11		REBOILER NORTH	430 / 221	9	28.9	0.01	0.019	690 / 366	796 / 424	895 / 479	4.233
11/16/11	11/17/11		4.0 EXPANSION TANK	412 / 211	10	27.8	0.04	0.018	693 / 367	794 / 424	894 / 479	3.678
Baseline Data												





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
01/09/12	7	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	2	1	3	0	179	4
12/27/11	7	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	169	0
12/13/11	7	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	2	0	0	0	169	0
11/29/11	9	0	0	0	0	0	1	0	0	0	42	0	1	0	0	0	0	0	0	0	0	0	170	0
11/22/11	7	0	0	0	0	0	1	6	0	0	6	0	0	0	0	1	0	0	0	0	6	0	204	1
11/16/11	7	0	0	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	189	1
<b>Baseline Data</b>																								

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



**Historical Comments**

12/27/11	This sample show normal results and no sudden change in Silicon, TAN or solids. Let's keep monitoring the oil in this plant.
12/13/11	The previous sample had Silicon jump from 6 ppm to 42 ppm, taken from a location described as "Reboiler". This sample was taken from "TCH Columbia Reboiler RRV" is now back down to 6 ppm Silicon. Please verify with operating parameters to see if indeed a leak occurred or not.
11/29/11	It's unclear if this sample was taken from the same reboiler as the last sample but the Silicon jumped from 6 to 42 ppm, which is very significant in just 1 week. Please analyze the data gathered from your process and vent detection to assist in the diagnosis of a possible major leak.
11/22/11	Results look slightly different (better) in this Reboiler North vs the traditional expansion tank or vaporizer samples. Silicon remains at 6 ppm and consistent with recent samples.
11/16/11	Silicon remains very low (~6ppm) which is a good thing. All other properties remain constant form the last samples after the cleaning and flushing.

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