

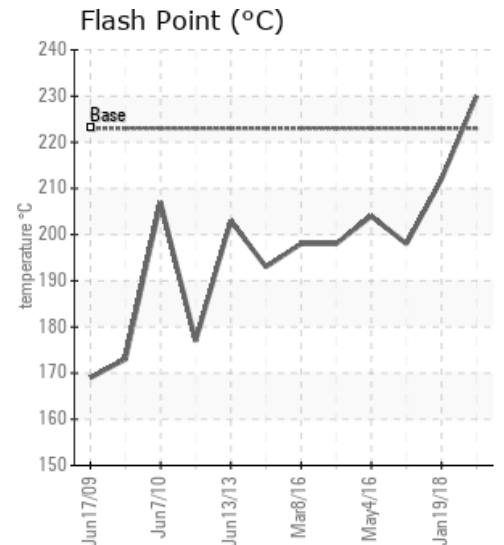
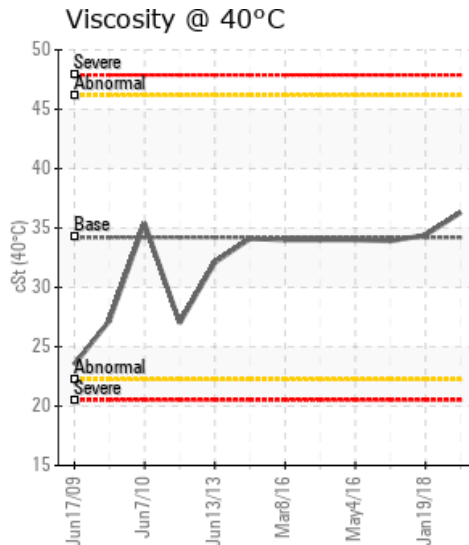
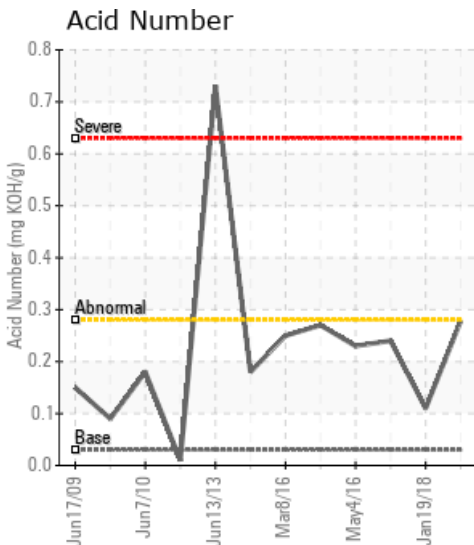
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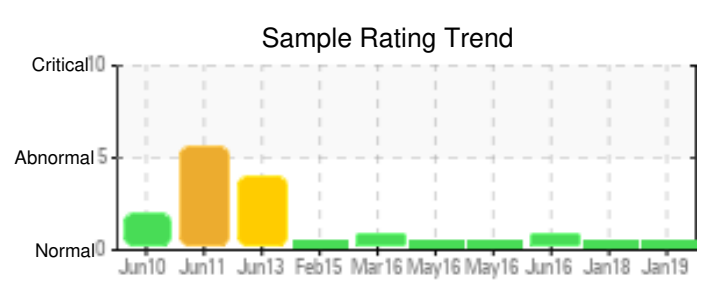
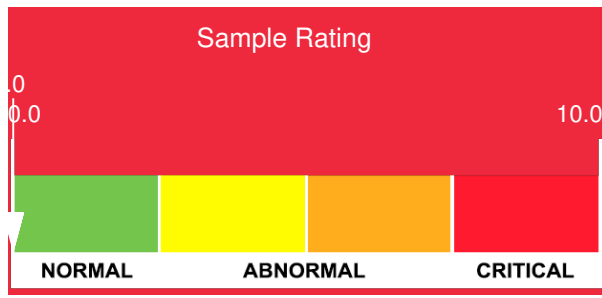
Customer: PTRHTF10017	System Information	Sample Information
LAKESIDE INDUSTRIES 955 SW ARMCO STREET HILLSBORO, OR 97124 USA Attn: Mitch Carlson Tel: E-Mail: mitch.carlson@lakesideind.com	System Volume: 330 gal Bulk Operating Temp: 340F / 171C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: HIWAY HEAT	Lab No: 02262372 Analyst: Ron LeBlanc Sample Date: 01/04/19 Received Date: 01/15/19 Completed: 01/16/19

Recommendation: Sample has elevated sulfur. Suggest sampling again in 1 month to see if a sample draw impacted quality of sample. The sample looks normal except the sulfur content.

Comments:

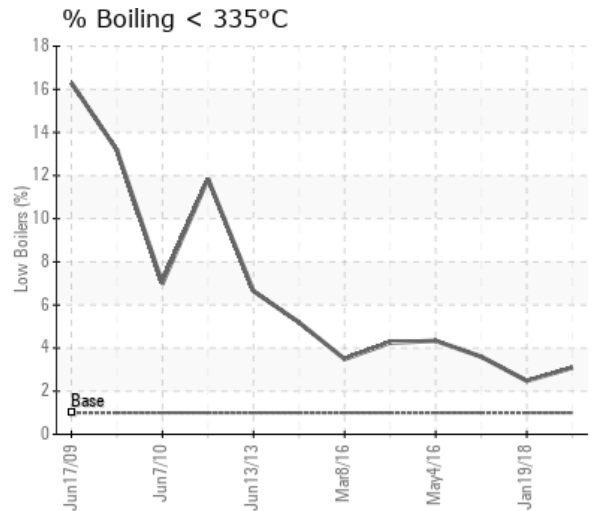
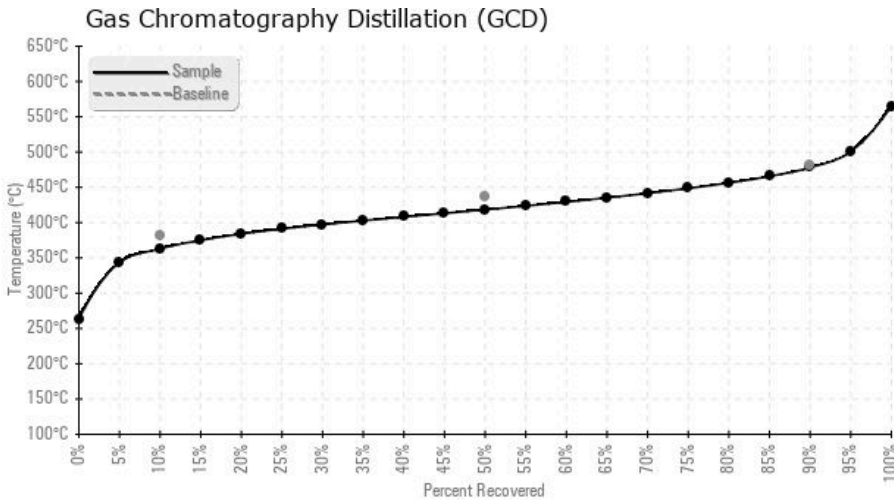
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/04/19	01/15/19	9y		446 / 230	6.2	36.3	0.278	0.016	685 / 363	785 / 418	892 / 478	3.09
01/19/18	01/31/18	14y		414 / 212	88.7	34.4	0.11	0.249	707 / 375	809 / 432	910 / 488	2.48
06/23/16	07/11/16	8y	RETURN B4 FILTER	388 / 198	63.5	33.9	0.24	0.132	693 / 367	806 / 430	925 / 496	3.60
05/04/16	05/16/16	8y	AFTER FILTER	399 / 204	134.2	34.0	0.23	0.105	690 / 366	807 / 431	915 / 490	4.34
05/03/16	05/16/16	8y	FILTER DISCHARGE	388 / 198	89.5	34.0	0.27	0.081	692 / 367	812 / 433	917 / 491	4.25
03/08/16	03/16/16	108y	AFTER FILTER	388 / 198	588.5	34.0	0.25	0.173	692 / 367	804 / 429	931 / 499	3.49
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





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
01/04/19	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
01/19/18	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
06/23/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/04/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
05/03/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
03/08/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseline Data			0	0						0			0	0					0				0	

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



Historical Comments	
01/19/18	Sample appears normal . Resample in 2 months.
06/23/16	Sample appears normal. Resample in 2 months. (GCD) 90% Distillation Point is marginally high.
05/04/16	Sample appears normal. Resample in 3 months.
05/03/16	Sample appears to be normal. Water has dropped significantly from last sample. Resample in 3 months.
03/08/16	(GCD) 90% distillation point is high. Water has increased from 104.3 ppm to 588.5 ppm. Remove water from system if possible and resample in 3 months. (GCD) 90% Distillation Point is abnormally high.

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