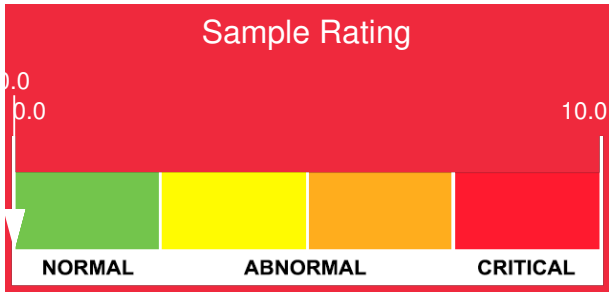
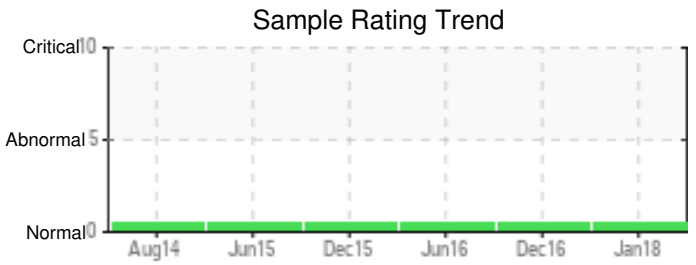




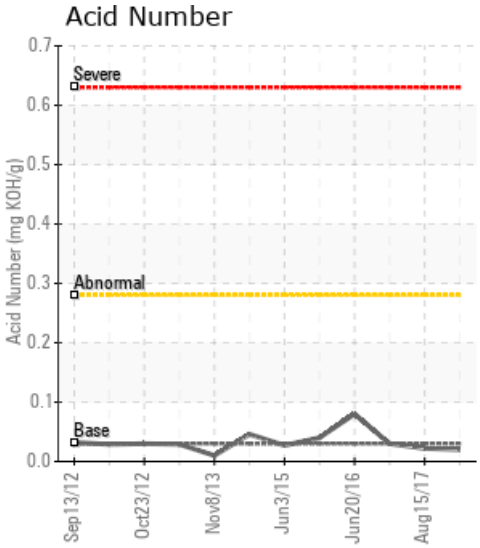
[SARAH] SARAH - THERMAL OIL SYSTEM CIRCULATING OIL

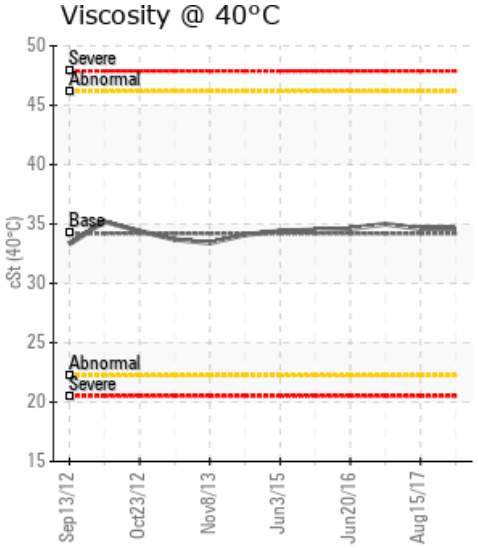
Customer: PTRHTF30015	System Information	Sample Information
Transport Desgagnes Inc. 21 Marche Champlain Suite 100 Quebec City, QC G1K 8Z8 Canada Attn: Sonia Desmarais Tel: (418)692-1000 E-Mail:	System Volume: 4000 ltr Bulk Operating Temp: 536F / 280C Heating Source: Blanket: Fluid: PETRO CANADA PETRO-THERM Make: AALBORG	Lab No: 02197254 Analyst: Claude Bureau Sample Date: 01/26/18 Received Date: 02/07/18 Completed: 02/26/18 To discuss this report contact Claude Bureau at (438)863-7577

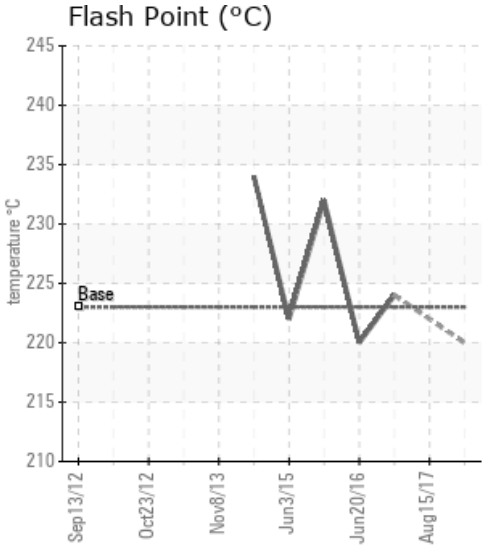
Recommendation: All parameters are normal. The Petro-Therm fluid is in very good condition and can stay in service until nextsampling.We recommend a new sample in 12 months

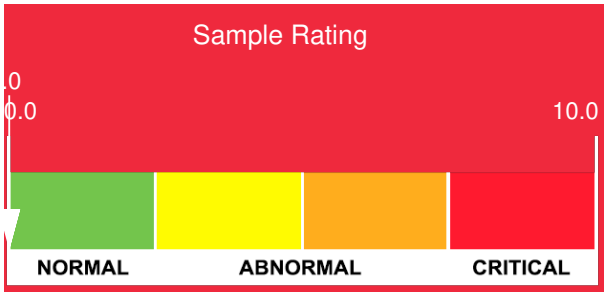
Comments:

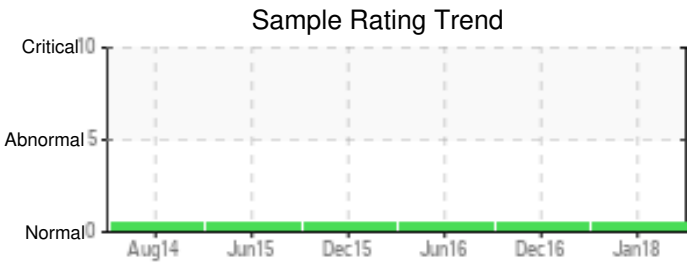
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
01/26/18	02/07/18	10y		428 / 220	31.4	34.6	0.02	0.042	705 / 374	792 / 422	885 / 474	0.13
08/15/17	09/15/17	10y				34.6	0.022					
12/23/16	01/10/17	0y	PUMP DISCHARGE	435 / 224	38.9	35.0	0.03	0.039	721 / 383	816 / 436	910 / 488	0.79
06/20/16	07/14/16	9y	PUMP DISCHARGE	428 / 220	12.9	34.6	0.08	0.119	718 / 381	811 / 433	906 / 485	0.52
12/03/15	01/04/16	8y		450 / 232	34.7	34.5	0.04	0.046	715 / 379	805 / 429	890 / 477	0.84
06/03/15	06/09/15	0y	CIRC PUMP DISCHARGE	432 / 222	34.0	34.4	0.027	0.024	721 / 383	817 / 436	908 / 487	0.73
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





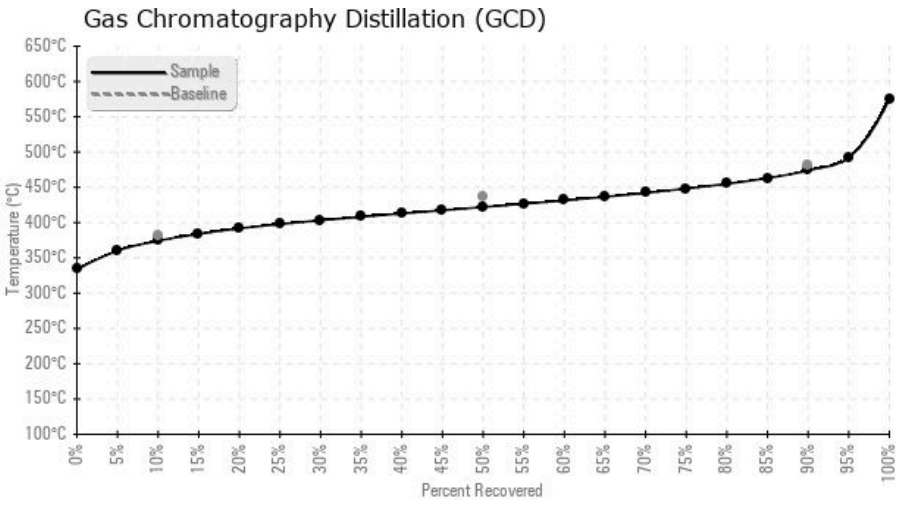


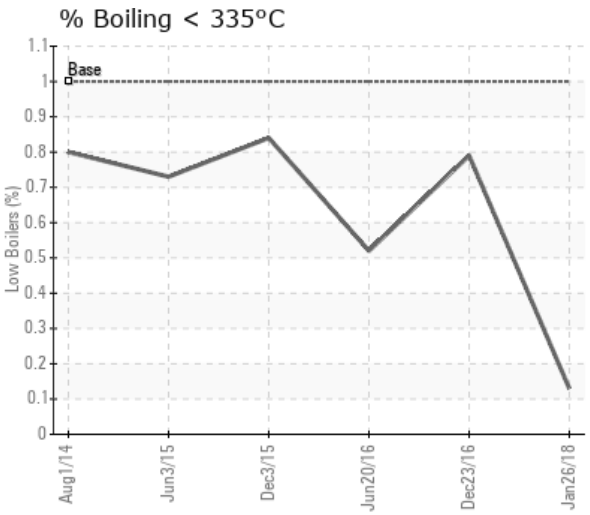




Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
01/26/18	16	0	0	0	5	0	0	32	0	0	0	2	0	0	0	0	0	0	1	0	32	0	7	6
08/15/17	6	0	0	0	2	0	0	24	0	0	0	2	0	0	0	0	0	0	0	0	24	0	6	3
12/23/16	10	0	0	0	3	0	1	29	0	0	0	2	0	0	0	0	0	0	1	0	29	0	7	5
06/20/16	8	0	0	0	2	0	1	25	0	0	0	2	0	0	0	0	0	0	0	0	25	0	8	5
12/03/15	16	0	0	0	3	0	1	19	0	0	1	2	0	0	0	0	1	0	0	0	19	0	8	6
06/03/15	18	0	0	0	3	0	1	23	0	0	1	2	0	0	0	1	1	0	0	0	23	0	9	7
Baseline Data			0	0						0			0	0					0				0	

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





Historical Comments

08/15/17	Resample at the next service interval to monitor. Lubritest recommends using HTTFL sample kits for heat transfer fluids. Please contact us at 1-800-268-2131 and provide a purchase order for $245 + HST in order to conduct additional testing (boiling points @ 10%, 50%, and 90%, percent boiling < 335°C, and solids) to determine the suitability for continued use.All component wear rates are normal. ISO Cleanliness Code (ISO 4406:1999): 24/20/13; Cumulative particle counts >4µm = 116043, >6µm = 8805, >14µm = 67, >21µm = 10, >38µm = 0, >71µm = 0. There is no indication of any contamination in the component(unconfirmed). The AN level is acceptable for this fluid. The condition of the fluid is acceptable for the time in service.
12/23/16	All parameters are normal. The Petro-Therm fluid is in very good condition and can stay in service until nextsampling.We recommend a new sample in 12 months
06/20/16	All parameters are normal. The Petro-Therm fluid is in very good condition and can stay in service until next sampling. We recommend a new sample in 12 months.
12/03/15	Tous les paramètres sont normaux. Le fluide Petro-Therm est en bon état et peut demeurer en service jusqu'au prochain échantillonnage. Nous recommandons d'échantilloner à nouveau dans 1 an.
06/03/15	All parameters are normal. The Petro-Therm fluid is in very good condition and can stay in service until next sampling. We recommend a new sample in 12 months.