

## [ATHABASCA OIL CORP / 05-27-078-10W4M] L3 (PAD C) LIESMER

**Customer: PTRHTF20133**  
 ATHABASCA OIL CORP.  
 LEISMER DEMONSTRATION PLANT  
 LSD2-79-10-W4M  
 NEAR CONKLIN, AB CA  
 Attn: Ryan Genest  
 Tel:  
 E-Mail: rgenest@atha.com

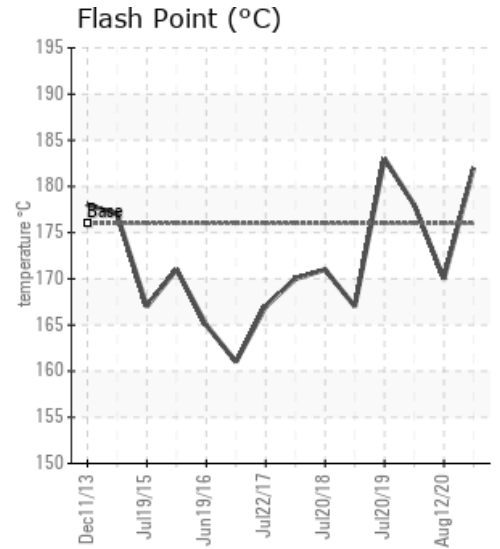
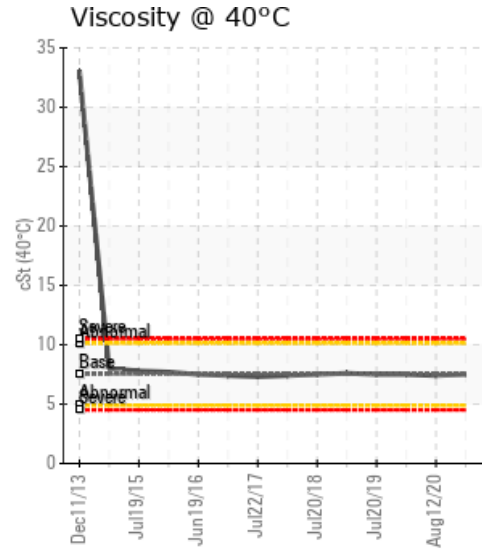
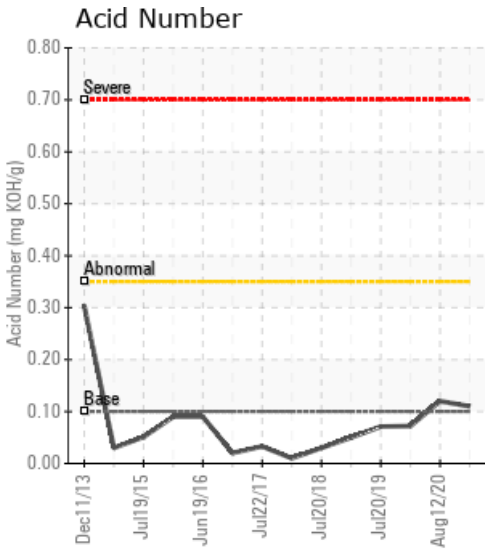
**System Information**  
 System Volume: 8000 ltr  
 Bulk Operating Temp: 212F / 100C  
 Heating Source:  
 Blanket:  
 Fluid: PETRO CANADA CALFLO LT  
 Make: TORNADO TECHNOLOGIES

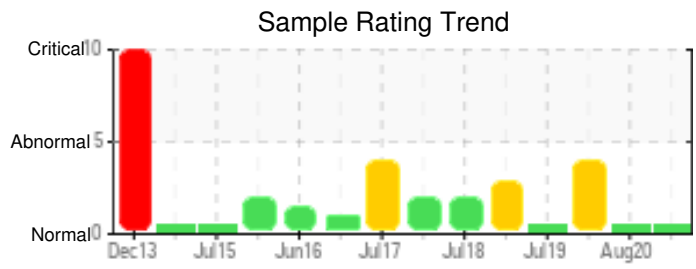
**Sample Information**  
 Lab No: 02405697  
 Analyst: Terry Veenstra  
 Sample Date: 02/03/21  
 Received Date: 02/24/21  
 Completed: 03/01/21  
 Terry Veenstra  
 terry.veenstra@HFSinclair.com

Recommendation: Fluid is in good condition and good for continued use. Resample in 6 months

Comments:

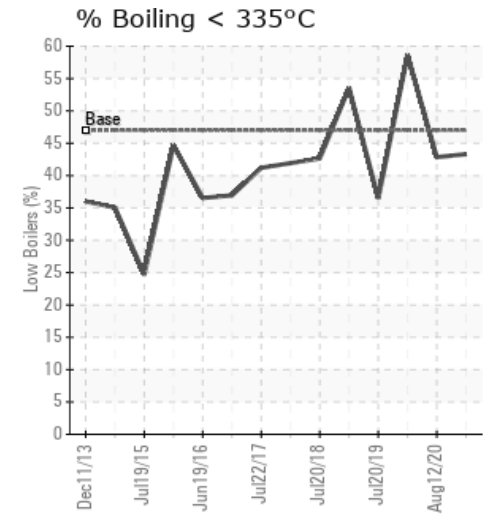
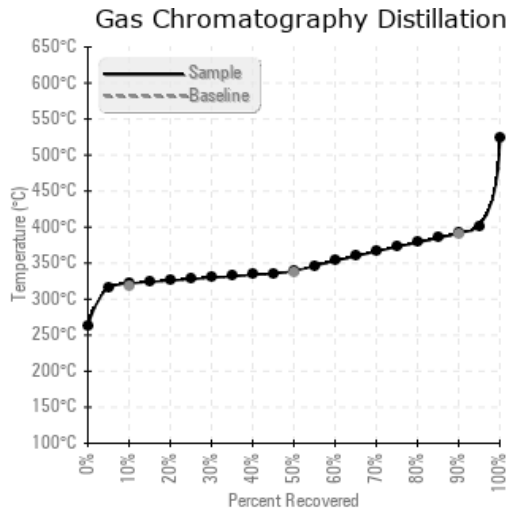
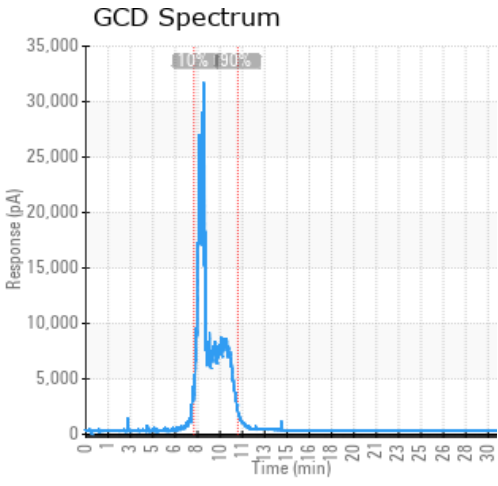
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
02/03/21	02/24/21	0.0y	bottom of tracer tre	360 / 182	27.0	7.5	0.11	0.125	611 / 322	643 / 339	737 / 391	43.31
08/12/20	08/31/20	0.0y	OT0285	338 / 170	6.3	7.4	0.12	0.043	612 / 322	643 / 340	735 / 391	42.84
01/16/20	02/10/20	0.0y	HORM-12C-0001-001	352 / 178	6.6	7.5	0.072	0.092	582 / 306	616 / 324	700 / 371	58.64
07/20/19	08/09/19	0.0y		361 / 183	7.5	7.5	0.071	0.082	610 / 321	650 / 344	736 / 391	36.50
01/20/19	02/08/19	0.0y		333 / 167	14.6	7.6	0.050	0.011	591 / 311	626 / 330	716 / 380	53.55
Baseline Data				349 / 176		7.52	0.1		604 / 318	640 / 338	734 / 390	47.0





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	
02/03/21	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	82	0	
08/12/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	0
01/16/20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	0
07/20/19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	0
01/20/19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	0
Baseline Data			0	0						0			0	0				0	0					270	

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



### Historical Comments

08/12/20	Results Normal. No action needed at this time. Resample at next scheduled date.
01/16/20	Consider venting of expansion tank to reduce low boilers. Resample after venting of expansion tank. Wear metals low. Contaminants, water, insolubles are low. (GCD) % < 335°C is severely high. (GCD) 90% Distillation Point is abnormally low. - 67% increase in (GCD) % < 335 deg. C. (from new fluid 35% to 58.4%), & - 5% decrease in 90% Distillation Point, (from new fluid 390 C. to 371.1 C.), indicate presence of low boilers.
07/20/19	Test results are normal. No immediate action required. Resample at the next interval.
01/20/19	Results normal. Resample at next interval. Wear levels low/normal. Contaminant levels low/normal. (GCD) % < 335°C is marginally high. (GCD) 90% Distillation Point is marginally low.

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