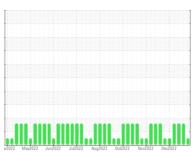


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id GZJ00314 Component Biogas Engine Fluid PETRO CANADA SENTRON CG 40 (145 GAL)

TETTO CANADA CENTITOR CO 40 (140 CA

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Total oil added 19 gal)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

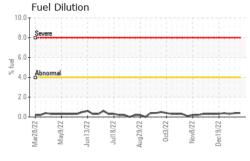
Fluid Condition

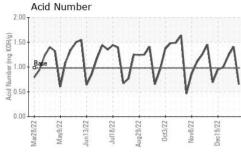
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

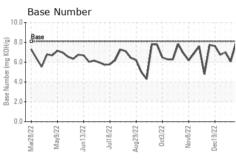
HON CG 40 (145	- ,	r2022 May20	22 Jun2022 Jul2022	Aug2022 Oct2022 Nov2022	D602022	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0699003	WC0698998	WC0699010
Sample Date		Client Info		24 Jan 2023	17 Jan 2023	03 Jan 2023
Machine Age	hrs	Client Info		120344	120184	119878
Oil Age	hrs	Client Info		81	923	617
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>45	2	12	7
Chromium	ppm	ASTM D5185m	>2	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	1	4	4
Lead	ppm	ASTM D5185m	>5	1	2	<1
Copper	ppm	ASTM D5185m	>14	<1	4	4
Tin	ppm	ASTM D5185m	>13	2	8	6
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
D		A OTTA A DIE LOS	0	^	4	0
Boron	ppm	ASTM D5185m	0	0	<1	0
Barium	ppm	ASTM D5185m	1	0	0	0
Barium Molybdenum		ASTM D5185m ASTM D5185m	1 2	0 <1	0 2	0
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1	0 <1 <1	0 2 <1	0 1 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9	0 <1 <1 14	0 2 <1 18	0 1 <1 14
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9 2712	0 <1 <1 14 3034	0 2 <1 18 3514	0 1 <1 14 3115
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9 2712 292	0 <1 <1 14 3034 310	0 2 <1 18 3514 362	0 1 <1 14 3115 293
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9 2712 292 342	0 <1 <1 14 3034 310 371	0 2 <1 18 3514 362 432	0 1 <1 14 3115 293 344
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9 2712 292 342 2575	0 <1 <1 14 3034 310 371 3953	0 2 <1 18 3514 362 432 4782	0 1 <1 14 3115 293 344 3735
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1 2 1 9 2712 292 342 2575 limit/base	0 <1 <1 <1 14 3034 310 371 3953 current	0 2 <1 18 3514 362 432 4782 history1	0 1 <1 14 3115 293 344 3735 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	1 2 1 9 2712 292 342 2575	0 <1 <1 14 3034 310 371 3953 current 83	0 2 <1 18 3514 362 432 4782 history1	0 1 <1 14 3115 293 344 3735 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 2 1 9 2712 292 342 2575 limit/base >200	0 <1 <1 14 3034 310 371 3953 current 83 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450	0 1 <1 14 3115 293 344 3735 history2 343 <1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 2 1 9 2712 292 342 2575 limit/base >200	0 <1 <1 14 3034 310 371 3953 current 83 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4	0 1 <1 14 3115 293 344 3735 history2 343 <1 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 2 1 9 2712 292 342 2575 limit/base >200 >4.0	0 <1 <1 14 3034 310 371 3953 current 83 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4	0 1 <1 14 3115 293 344 3735 history2 343 <1 0 0.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	1 2 1 9 2712 292 342 2575 limit/base >200	0 <1 <1 14 3034 310 371 3953 current 83 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4	0 1 <1 14 3115 293 344 3735 history2 343 <1 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base	0 <1 <1 <1 14 3034 310 371 3953 current 83 <1 <1 0.4 current 0	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1	0 1 <1 14 3115 293 344 3735 history2 343 <1 0 0.3 history2 0.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	1 2 1 9 2712 292 342 2575 limit/base >200 >4.0	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1 6.5	0 1 <1 14 3115 293 344 3735 history2 ▲ 343 <1 0 0.3 history2 0.1 5.8
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base	0 <1 <1 <1 14 3034 310 371 3953 current 83 <1 <1 0.4 current 0	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1	0 1 <1 14 3115 293 344 3735 history2 343 <1 0 0.3 history2 0.1
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	1 2 1 9 2712 292 342 2575 limit/base >200	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1 6.5	0 1 <1 14 3115 293 344 3735 history2 ▲ 343 <1 0 0.3 history2 0.1 5.8
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base >20 >30	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1 6.5 22.8	0 1 <1 14 3115 293 344 3735 history2 343 <1 0 0.3 history2 0.1 5.8 20.6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7615 method	1 2 1 9 2712 292 342 2575 limit/base >200 >20 >4.0 limit/base	0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	0 2 <1 18 3514 362 432 4782 history1 ▲ 450 4 <1 0.4 history1 0.1 6.5 22.8 history1	0 1 <1 14 3115 293 344 3735 history2 ▲ 343 <1 0 0.3 history2 0.1 5.8 20.6 history2

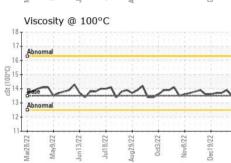


OIL ANALYSIS REPORT









VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPER	TILO	memod			riistory i	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	13.5	13.5	13.9	13.7

Visc @ 100°C	cSt	ASTM D445 13.5	13.5	13.9	13.7
GRAPHS					
Iron (ppm) Severe Abnormal 20 0 27/8/keW	Aug29/22 -	Dec19/22	Lead (ppm) Severe Abnormal April 2018 2 2	Jul18/22 - }	Oct3/22 - S
Aluminum (ppm)	An	Z ŏ	ے ج Chromium (پ	4	- 2 õ
20 Severe 15 Mar.28/22 7 7 2/8/28/29 7 10 10 5 5 0 7 2/8/28 Washington 10 5	Aug29/22	Nov8/22 S	Severe Abnormal 22/8/am Mar28/27 27/8/am Mar28/27 27/8/am Mar28/27/8/am	Jul18/22 Aug29/22	0cd3/22 Nov8/22 Dec19/22
Copper (ppm)			Silicon (ppm)	
Severe 20 Abnormal 27/8/3/20 27/8/20 27/8/	Aug29/22	Nov8/22 - \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	900 400 8evere A Mar28/27 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 700 100 - 727/28/27 70	Jul18/22	0cd3/22 Nov8/22 Dec19/22
Viscosity @ 100°0	0		Base Numbe	r	
Abnormal Abnormal Abnormal	<u>~~</u>		Base Mumber (mg KOH(6))	~	





Laboratory Sample No.

: WC0699003 Lab Number : 05752300 Unique Number : 10311904

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: 27 Jan 2023 Diagnosed

: 30 Jan 2023 : 30 Jan 2023 - Sean Felton

Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. **FINLEY BIOENERGY**

74265 Bombing Range Road Boardman, OR

US 97818 Contact: Blain Middleton bmiddleton@archaea.energy

T: (541)481-3232

Report Id: FINLEX [WUSCAR] 05752300 (Generated: 03/06/2024 16:49:23) Rev: 1

Submitted By: Blain Middleton