

OIL ANALYSIS REPORT

Sample Rating Trend



3587C AUTOCAR ACX

Component

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (48 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

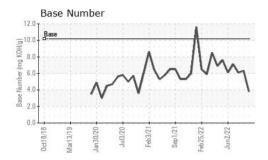
Fluid Condition

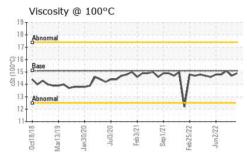
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/bass current history1 history2	(48 QTS)	8 QTS)						
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2	
Machine Age hrs Client Info 5810 3916 1603 Oil Age hrs Client Info 0 1701 388 Oil Changed Client Info Changed	Sample Number		Client Info		GFL0103203	GFL0056713	GFL0056476	
Oil Age hrs Client Info Changed Changed Changed Changed Changed Changed Changed NORMAL Changed Changed Changed Changed Changed NORMAL Changed Changed Changed Changed NORMAL NORMAL NORMAL NORMAL NORMAL NORMAL	Sample Date		Client Info		12 Feb 2024	25 Apr 2023	19 Oct 2022	
Oil Changed Sample Status Client Info Changed NORMAL Changed NoRMAL NoRMAL Current history1 Mistory2 Changed NoRMAL NoRMAL Changed NoRMAL NoRMAL Current history1 Mistory2 Changed NoRMAL NoRMAL Changed NoRMAL NoRMAL Change And NoRMAL NoRMAL Current history1 Change And NoRMAL NoRMAL Change And NoRMAL NoRMAL C	Machine Age	hrs	Client Info		5810	3916	1603	
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		0	1701	388	
CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 11 18 8 Chromium ppm ASTM D5185m >4 <1 3 4 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 1 4 <1 Lead ppm ASTM D5185m >30 0 0 5 Copper ppm ASTM D5185m >35 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Oil Changed		Client Info		Changed	Changed	Changed	
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 11 18 8 Chromium ppm ASTM D5185m >2 0 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 0 5 Copper ppm ASTM D5185m >30 0 0 5 Copper ppm ASTM D5185m >4 0 0 0 1 Vanadium ppm ASTM D5185m 0 0 0 0 1 Vandium ppm ASTM D5185m 50 5	Sample Status				NORMAL	NORMAL	NORMAL	
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 11 18 8 Chromium ppm ASTM D5185m >4 <1 3 4 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 0 0 5 Lead ppm ASTM D5185m >9 1 4 <1 Lead ppm ASTM D5185m >4 0 0 0 Copper ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 50 5 23 4 <th>CONTAMINAT</th> <th>ION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINAT	ION	method	limit/base	current	history1	history2	
Iron	Water		WC Method	>0.1	NEG	NEG	NEG	
Chromium ppm ASTM D5185m >4 <1	WEAR METAL	S	method	limit/base	current	history1	history2	
Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 1 4 <1	Iron	ppm	ASTM D5185m	>50	11	18	8	
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 1 4 <1	Chromium	ppm	ASTM D5185m	>4	<1	3	4	
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >9 1 4 <1 Lead ppm ASTM D5185m >30 0 0 5 Copper ppm ASTM D5185m >35 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Nickel	ppm	ASTM D5185m	>2				
Aluminum	Titanium	ppm	ASTM D5185m		0	0	0	
Lead	Silver	ppm	ASTM D5185m	>3	0	0	0	
Copper ppm ASTM D5185m >35 <1 <1 <1 <1 Tin ppm ASTM D5185m >4 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 <1	Aluminum	ppm	ASTM D5185m	>9	1	4	<1	
Tin ppm ASTM D5185m >4 0 0 0 Vanadium ppm ASTM D5185m 0 0 <1	Lead	ppm	ASTM D5185m	>30	0	0	5	
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 5 23 4 Barium ppm ASTM D5185m 5 9 0 0 Molybdenum ppm ASTM D5185m 50 50 51 52 Manganese ppm ASTM D5185m 60 489 596 532 Magnesium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>35	<1	<1	<1	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 5 23 4 Barium ppm ASTM D5185m 5 9 0 0 Molybdenum ppm ASTM D5185m 50 50 51 52 Manganese ppm ASTM D5185m 0 0 1 <1	Tin	ppm	ASTM D5185m	>4	0	0	0	
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	<1	
Boron ppm ASTM D5185m 50 5 23 4 Barium ppm ASTM D5185m 5 9 0 0 Molybdenum ppm ASTM D5185m 50 50 51 52 Manganese ppm ASTM D5185m 0 0 1 <1	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 5 9 0 0 Molybdenum ppm ASTM D5185m 50 50 51 52 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 560 489 596 532 Calcium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m 0	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 50 50 51 52 Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 560 489 596 532 Calcium ppm ASTM D5185m 560 489 596 532 Calcium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/bas	Boron	ppm	ASTM D5185m	50	5	23	4	
Manganese ppm ASTM D5185m 0 0 1 <1 Magnesium ppm ASTM D5185m 560 489 596 532 Calcium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D741	Barium	ppm	ASTM D5185m	5	9	0	0	
Magnesium ppm ASTM D5185m 560 489 596 532 Calcium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415	Molybdenum	ppm	ASTM D5185m	50	50	51	52	
Calcium ppm ASTM D5185m 1510 1409 1598 1584 Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION limit/base	Manganese	ppm	ASTM D5185m	0	0	1	<1	
Phosphorus ppm ASTM D5185m 780 612 812 709 Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION *ASTM D7414 >25 19.4 15.8 19.2	Magnesium	ppm	ASTM D5185m	560	489	596	532	
Zinc ppm ASTM D5185m 870 865 973 922 Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 0 0 0.1 Nitration Abs/cm "ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm "ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm "ASTM D7414 >25 19.4	Calcium	ppm	ASTM D5185m	1510	1409	1598	1584	
Sulfur ppm ASTM D5185m 2040 2321 2957 2449 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >20 4 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Phosphorus	ppm	ASTM D5185m	780	612	812	709	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m >5 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Zinc	ppm	ASTM D5185m	870	865	973	922	
Silicon ppm ASTM D5185m >+100 7 11 5 Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Sulfur	ppm	ASTM D5185m	2040	2321	2957	2449	
Sodium ppm ASTM D5185m 5 4 4 Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	CONTAMINAN	ITS	method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 4 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Silicon	ppm	ASTM D5185m	>+100	7	11	5	
INFRA-RED	Sodium	ppm	ASTM D5185m		5	4	4	
Soot % % *ASTM D7844 0 0 0.1 Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Potassium	ppm	ASTM D5185m	>20	4	0	2	
Nitration Abs/cm *ASTM D7624 >20 11.4 8.7 11.1 Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	INFRA-RED		method	limit/base	current	history1	history2	
Sulfation Abs/.1mm *ASTM D7415 >30 22.2 18.2 22.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Soot %	%	*ASTM D7844		0	0	0.1	
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Nitration	Abs/cm	*ASTM D7624	>20	11.4	8.7	11.1	
Oxidation Abs/.1mm *ASTM D7414 >25 19.4 15.8 19.2	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.2	18.2	22.7	
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2	
Base Number (BN) mg KOH/g ASTM D2896 10.2 3.8 6.3 6.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	15.8	19.2	
	Base Number (BN)	mg KOH/g	ASTM D2896	10.2	3.8	6.3	6.1	



OIL ANALYSIS REPORT

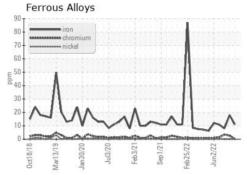


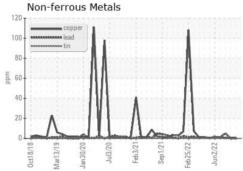


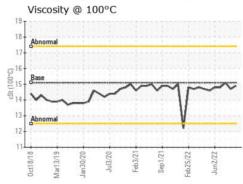
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

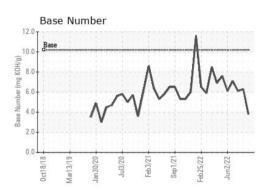
FLUID PROP	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.9	14.7	15.1

GRAPHS













Certificate L2367

Laboratory Sample No.

Test Package : FLEET

: GFL0103203 Lab Number : 06088496 Unique Number : 10875941

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 14 Feb 2024

Tested : 15 Feb 2024 Diagnosed : 15 Feb 2024 - Wes Davis

GFL Environmental - 001 - Raleigh(CNG)

3741 Conquest Drive Garner, NC US 27529

F: (919)662-1730

Contact: Ronald Gregory rgregory@gflenv.com

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.

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

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