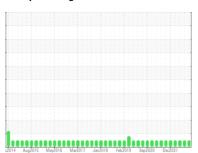


# **OIL ANALYSIS REPORT**

## **Sample Rating Trend**







# 3512C AUTOCAR ISL

Component

**Natural Gas Engine** 

PETRO CANADA DURON GEO LD 15W40 (48 QTS)

# DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

## Contamination

There is no indication of any contamination in the

## **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.

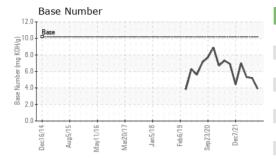
(48 QTS)						
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089315	GFL0056592	GFL0040713
Sample Date		Client Info		26 Sep 2023	28 Feb 2023	29 Mar 2022
Machine Age	hrs	Client Info		3867	2620	1635
Oil Age	hrs	Client Info		0	985	569
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	;	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	28	24	12
Chromium	ppm	ASTM D5185m	>4	3	4	2
Nickel	ppm	ASTM D5185m	>2	<1	1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	6	4	3
Lead	ppm	ASTM D5185m	>30	9	1	1
Copper	ppm	ASTM D5185m	>35	4	10	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		<1	<1	0
• 4.144.4111	1.1					
Cadmium	ppm	ASTM D5185m		0	0	0
		ASTM D5185m method	limit/base	<b>o</b> current	0 history1	0 history2
Cadmium			limit/base			
Cadmium ADDITIVES Boron	ppm	method		current	history1	history2
Cadmium  ADDITIVES  Boron  Barium	ppm	method ASTM D5185m	50	current 9	history1	history2
Cadmium  ADDITIVES  Boron  Barium  Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m	50 5	current 9 0	history1 14 0	history2 12 0
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	current 9 0 65	history1 14 0 52	history2 12 0 53
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	current 9 0 65 <1	history1 14 0 52 <1	history2  12  0  53  <1
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium	ppm ppm ppm ppm ppm	method  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m	50 5 50 0 560	current 9 0 65 <1 699	history1  14  0 52 <1 518	history2  12  0  53  <1  512
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	50 5 50 0 560 1510	current  9  0  65  <1  699  2005	history1  14  0 52 <1 518 1596	history2  12  0  53  <1  512  1637
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method  ASTM D5185m	50 5 50 0 560 1510 780	current  9  0  65  <1  699  2005  839	history1  14  0 52 <1 518 1596 707	history2  12  0  53  <1  512  1637  676
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870	current  9  0  65  <1  699  2005  839  1153	history1  14  0 52 <1 518 1596 707 969	history2  12  0  53  <1  512  1637  676  976
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040	current  9  0  65 <1  699  2005  839  1153  2728	history1  14  0 52 <1 518 1596 707 969 2200	history2  12  0  53  <1  512  1637  676  976  2371
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base	current  9  0  65  <1  699  2005  839  1153  2728  current	history1  14  0  52  <1  518  1596  707  969  2200  history1	history2  12  0  53  <1  512  1637  676  976  2371  history2
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	current  9  0  65  <1  699  2005  839  1153  2728  current  13	history1  14  0  52  <1  518  1596  707  969  2200  history1  13	history2  12 0 53 <1 512 1637 676 976 2371 history2 4
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	current  9  0  65  <1  699  2005  839  1153  2728  current  13	history1  14  0 52 <1 518  1596 707  969 2200  history1  13  9	history2  12  0  53  <1  512  1637  676  976  2371  history2  4  0
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium  Potassium  INFRA-RED	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	current  9  0  65  <1  699  2005  839  1153  2728  current  13  12  11	history1  14  0  52  <1  518  1596  707  969  2200  history1  13  9  3	history2  12 0 53 <1 512 1637 676 976 2371 history2 4 0 2
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium  Potassium  INFRA-RED  Soot %	ppm	method  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	current  9 0 65 <1 699 2005 839 1153 2728 current 13 12 11 current	history1  14  0 52 <1 518 1596 707 969 2200 history1  13 9 3 history1	history2  12  0  53  <1  512  1637  676  976  2371  history2  4  0  2  history2
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium  Potassium  INFRA-RED  Soot %  Nitration	ppm	method  ASTM D5185m  method  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	current  9  0 65 <1 699 2005 839 1153 2728 current  13 12 11 current  0	history1  14  0 52 <1 518 1596 707 969 2200 history1 13 9 3 history1 0.1	history2  12  0  53  <1  512  1637  676  976  2371  history2  4  0  2  history2  0.1
Cadmium  ADDITIVES  Boron  Barium  Molybdenum  Manganese  Magnesium  Calcium  Phosphorus  Zinc  Sulfur  CONTAMINANT  Silicon  Sodium  Potassium  INFRA-RED  Soot %  Nitration	ppm	method  ASTM D5185m  method  *ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	current  9 0 65 <1 699 2005 839 1153 2728 current 13 12 11 current 0 11.3	history1  14  0  52  <1  518  1596  707  969  2200  history1  13  9  3  history1  0.1  9.8	history2  12 0 53 <1 512 1637 676 976 2371 history2 4 0 2 history2 0.1 11.6

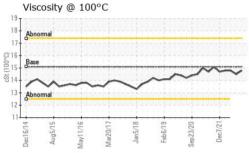
3.9

Base Number (BN) mg KOH/g ASTM D2896 10.2



# **OIL ANALYSIS REPORT**

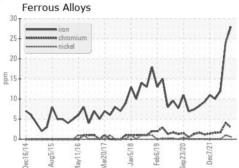


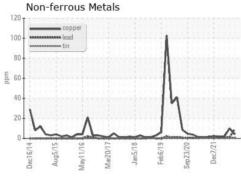


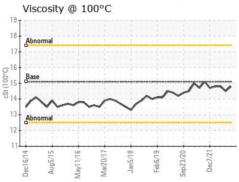
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

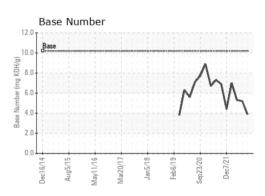
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.1	14.8	14.5	14.8	

# **GRAPHS**













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: GFL0089315 : 05968723

: 10675274

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 04 Oct 2023

Diagnosed : 04 Oct 2023 Diagnostician : Wes Davis

3741 Conquest Drive Garner, NC US 27529 Contact: Craig Johnson

GFL Environmental - 001 - Raleigh(CNG)

craig.johnson@gflenv.com T: (919)662-7100

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)

F: (919)662-7130