



PROBLEM SUMMARY

Sample Rating Trend

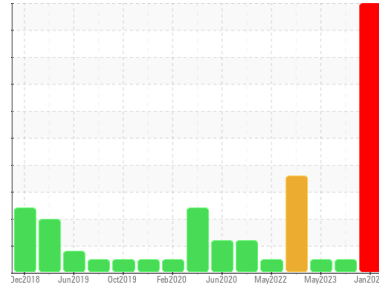
GLYCOL



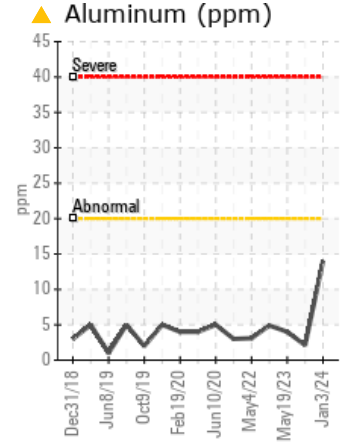
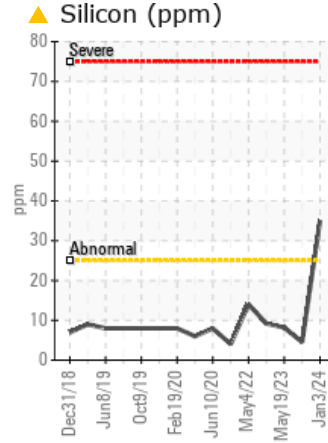
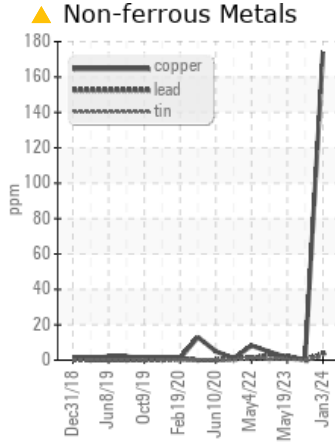
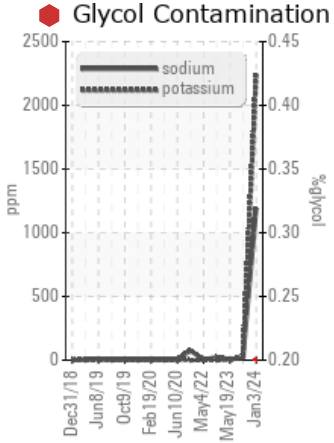
Machine Id
727107-361681

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	NORMAL	NORMAL
Copper	ppm	ASTM D5185m >330	▲ 174	<1	1
Silicon	ppm	ASTM D5185m >25	▲ 35	4	8
Sodium	ppm	ASTM D5185m	▲ 1192	17	8
Potassium	ppm	ASTM D5185m >20	▲ 2221	29	5
Glycol	%	*ASTM D2982	● 0.20	NEG	NEG

Customer Id: GFL865
 Sample No.: GFL0103948
 Lab Number: 06053453
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

12 Sep 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



19 May 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



03 Feb 2023 Diag: Don Baldrige

SOOT



We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value. All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

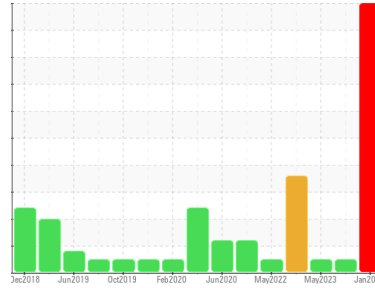
view report





OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
727107-361681

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Contamination

Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0103948	GFL0093241	GFL0074224
Sample Date	Client Info	03 Jan 2024	12 Sep 2023	19 May 2023
Machine Age	hrs	16833	16268	15399
Oil Age	hrs	16833	0	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	71	4	36
Chromium	ppm ASTM D5185m >20	4	<1	2
Nickel	ppm ASTM D5185m >4	2	<1	<1
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >3	<1	0	0
Aluminum	ppm ASTM D5185m >20	▲ 14	2	4
Lead	ppm ASTM D5185m >40	4	0	2
Copper	ppm ASTM D5185m >330	▲ 174	<1	1
Tin	ppm ASTM D5185m >15	2	0	<1
Vanadium	ppm ASTM D5185m	0	0	<1
Cadmium	ppm ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	7	9
Barium	ppm ASTM D5185m 0	9	2	0
Molybdenum	ppm ASTM D5185m 60	386	66	58
Manganese	ppm ASTM D5185m 0	3	<1	<1
Magnesium	ppm ASTM D5185m 1010	794	875	899
Calcium	ppm ASTM D5185m 1070	1074	1192	1158
Phosphorus	ppm ASTM D5185m 1150	715	1015	975
Zinc	ppm ASTM D5185m 1270	1104	1225	1198
Sulfur	ppm ASTM D5185m 2060	3005	3417	3416

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 35	4	8
Sodium	ppm ASTM D5185m	▲ 1192	17	8
Potassium	ppm ASTM D5185m >20	▲ 2221	29	5
Glycol	% *ASTM D2982	◆ 0.20	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.9	0.2	1.3
Nitration	Abs/cm *ASTM D7624 >20	16.7	6.9	12.3
Sulfation	Abs.1mm *ASTM D7415 >30	25.6	19.0	23.5

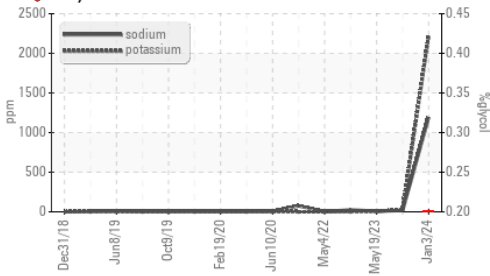
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs.1mm *ASTM D7414 >25	22.3	15.2	19.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	9.5	8.8	8.8

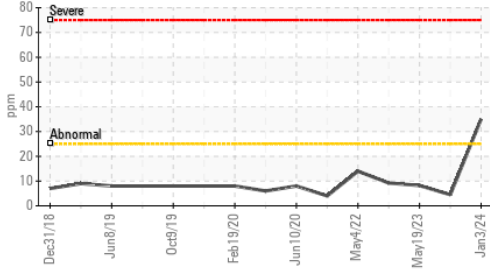


OIL ANALYSIS REPORT

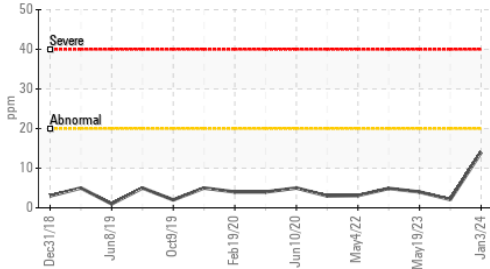
Glycol Contamination



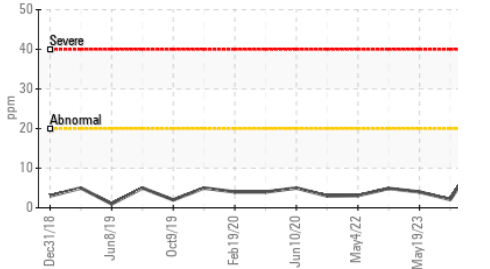
Silicon (ppm)



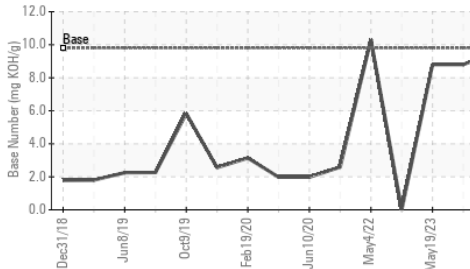
Aluminum (ppm)



Aluminum (ppm)



Base Number



VISUAL

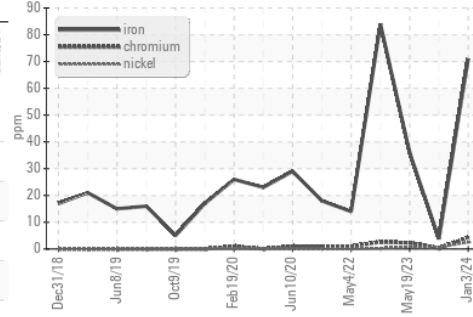
method	limit/base	current	history1	history2		
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES

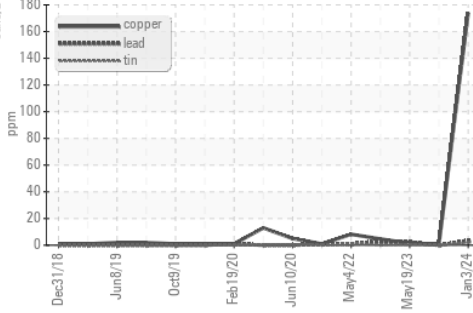
method	limit/base	current	history1	history2		
Visc @ 100°C	cSt	ASTM D445	15.4	14.2	14.7	14.6

GRAPHS

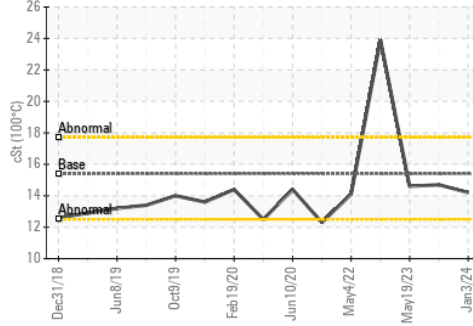
Ferrous Alloys



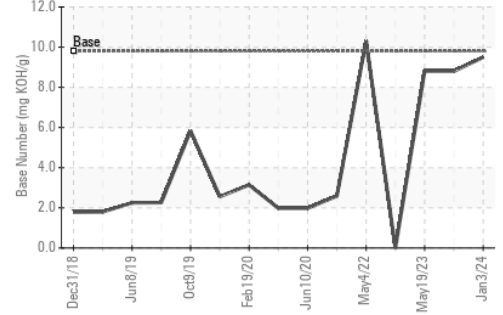
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0103948 **Received** : 08 Jan 2024
Lab Number : 06053453 **Diagnosed** : 09 Jan 2024
Unique Number : 10819402 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 865 - East Mount Hauling
 7213 East Mount Houston Road
 Houston, TX
 US 77050
 Contact: Jose Gonzalez
 jgonzalez2@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)

T:
F: