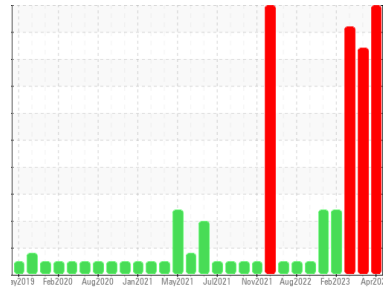




PROBLEM SUMMARY

Sample Rating Trend

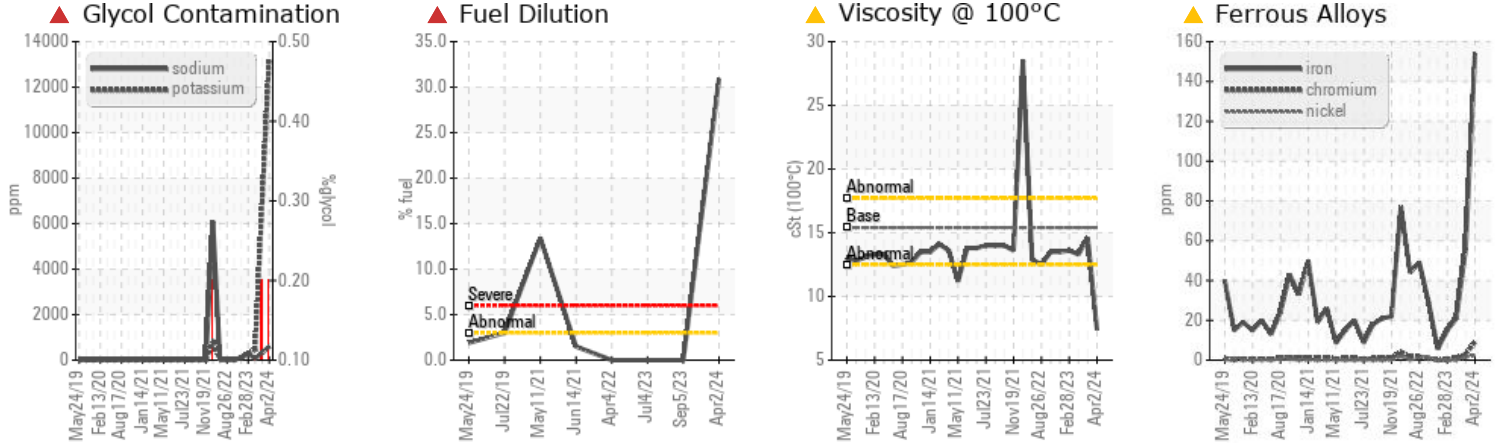


GLYCOL



Area
(YA147114)
Machine Id
12010
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (8 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 fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>90	▲ 154	56	21
Sodium	ppm	ASTM D5185m		▲ 594	▲ 319	● 60
Potassium	ppm	ASTM D5185m	>20	▲ 13254	▲ 6901	▲ 455
Fuel	%	ASTM D3524	>3.0	▲ 30.9	<1.0	<1.0
Glycol	%	*ASTM D2982		▲ 0.20	▲ 0.20	▲ 0.10
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 7.4	14.6	13.3

Customer Id: GFL018
Sample No.: GFL0090047
Lab Number: 06138261
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
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

GLYCOL



05 Sep 2023 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. 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.

view report



GLYCOL



04 Jul 2023 Diag: Wes Davis

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. All component wear rates are normal. Test for glycol is positive. There is a high concentration of glycol present in the oil. Additive levels indicate the addition of a different brand, or type of oil. 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.

view report



GLYCOL



28 Feb 2023 Diag: Jonathan Hester

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels remain high. The BN result indicates that there is suitable alkalinity remaining in the oil.

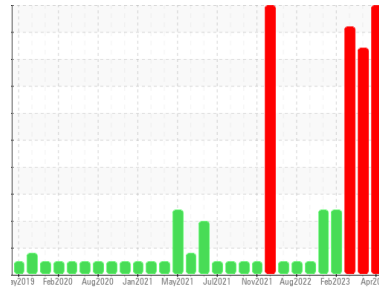
view report





OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
(YA147114)
Machine Id
12010
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (8 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 fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. There is a high amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0090047	GFL0080571	GFL0066840
Sample Date	Client Info	02 Apr 2024	05 Sep 2023	04 Jul 2023
Machine Age	hrs	8078	8078	8078
Oil Age	hrs	0	8078	8078
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	SEVERE	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	▲ 154	56	21
Chromium	ppm ASTM D5185m >20	9	3	1
Nickel	ppm ASTM D5185m >2	2	1	0
Titanium	ppm ASTM D5185m >2	2	4	<1
Silver	ppm ASTM D5185m >2	0	<1	0
Aluminum	ppm ASTM D5185m >20	18	10	3
Lead	ppm ASTM D5185m >40	0	0	<1
Copper	ppm ASTM D5185m >330	249	158	6
Tin	ppm ASTM D5185m >15	2	2	<1
Vanadium	ppm ASTM D5185m	<1	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	2	9	219
Barium	ppm ASTM D5185m 0	0	6	3
Molybdenum	ppm ASTM D5185m 60	46	62	77
Manganese	ppm ASTM D5185m 0	4	5	2
Magnesium	ppm ASTM D5185m 1010	492	382	586
Calcium	ppm ASTM D5185m 1070	581	870	1400
Phosphorus	ppm ASTM D5185m 1150	612	832	1072
Zinc	ppm ASTM D5185m 1270	740	1054	1316
Sulfur	ppm ASTM D5185m 2060	2337	3008	4086

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	19	13	8
Sodium	ppm ASTM D5185m	▲ 594	▲ 319	60
Potassium	ppm ASTM D5185m >20	▲ 13254	▲ 6901	▲ 455
Fuel	% ASTM D3524 >3.0	▲ 30.9	<1.0	<1.0
Glycol	% *ASTM D2982	▲ 0.20	▲ 0.20	▲ 0.10

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	1.4	0.5	0.3
Nitration	Abs/cm *ASTM D7624 >20	32.4	16.5	6.6
Sulfation	Abs/.1mm *ASTM D7415 >30	31.7	26.4	20.6

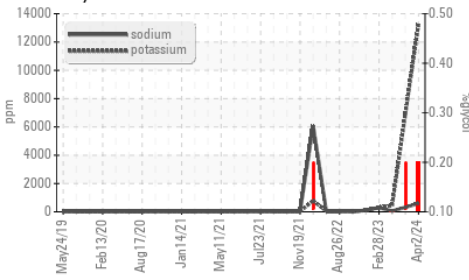
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	26.0	15.6	14.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	20.6	14.03	9.2

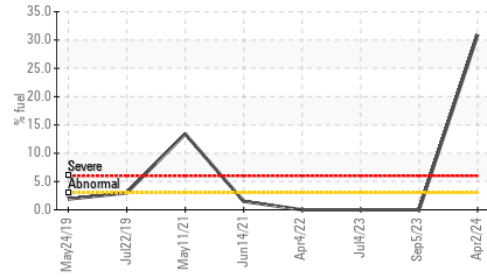


OIL ANALYSIS REPORT

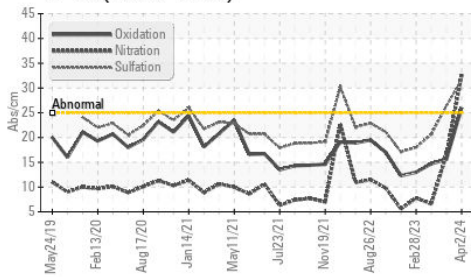
▲ Glycol Contamination



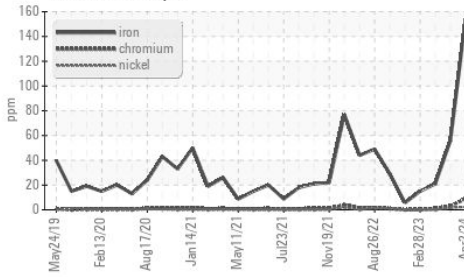
▲ Fuel Dilution



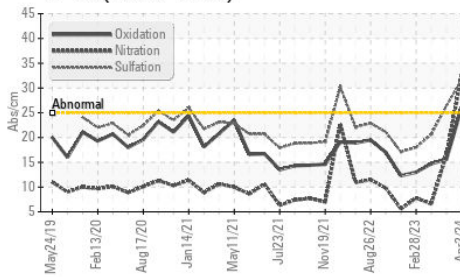
● FT-IR (Direct Trend)



▲ Ferrous Alloys



● FT-IR (Direct Trend)



VISUAL

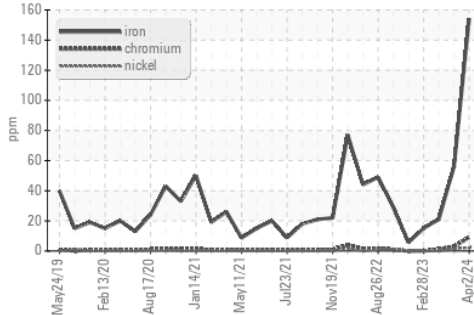
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

FLUID PROPERTIES

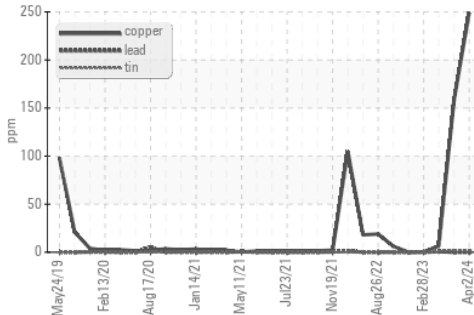
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4 ▲ 7.4	14.6	13.3

GRAPHS

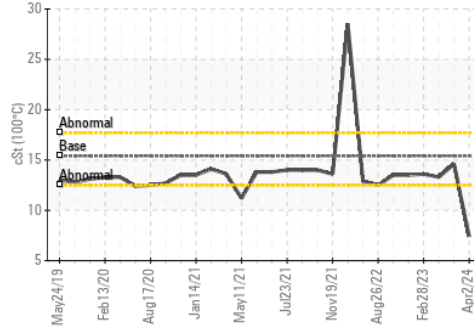
▲ Ferrous Alloys



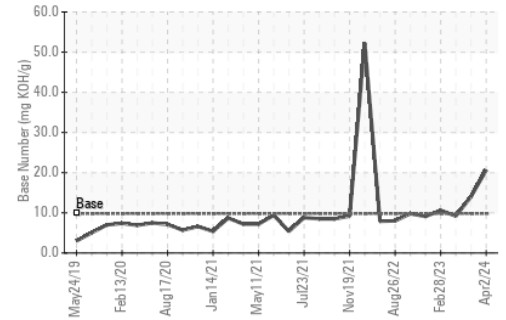
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0090047

Lab Number : 06138261

Unique Number : 10963069

Test Package : FLEET (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.

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

Received : 04 Apr 2024

Tested : 09 Apr 2024

Diagnosed : 09 Apr 2024 - Jonathan Hester

GFL Environmental - 018 - Fayetteville

4621 Marracco Drive

Hope Mills, NC

US 28348

Contact: Robert Carter

robert.carter@gflenv.com

T: (910)596-1170

F: