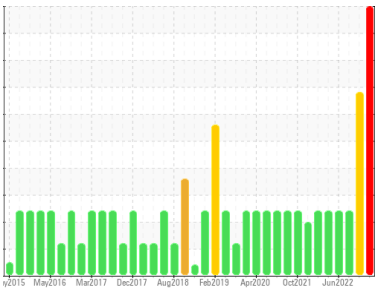
PROBLEM SUMMARY

Sample Rating Trend

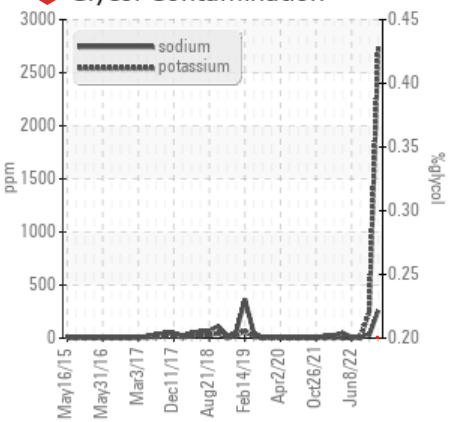


GLYCOL

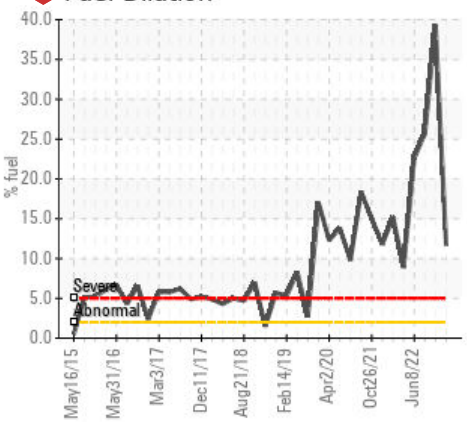
Machine Id
10574 INTERNATIONAL MAXXFORCE
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (28 QTS)

COMPONENT CONDITION SUMMARY

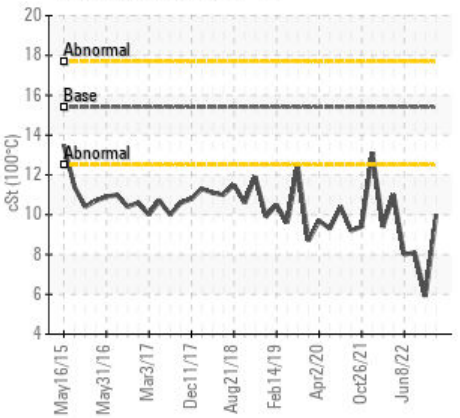
Glycol Contamination



Fuel Dilution



Viscosity @ 100°C



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. 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**	SEVERE	SEVERE
Sodium	ppm	ASTM D5185m		▲ **259**	▲ 30	9
Potassium	ppm	ASTM D5185m	>20	▲ **2710**	▲ 251	2
Fuel	%	ASTM D3524	>2.0	⬢ **11.7**	⬢ 39.3	⬢ 25.7
Glycol	%	*ASTM D2982		⬢ **0.20**	NEG	NEG
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.0**	▲ 5.9	▲ 8.1

Customer Id: GFL001
Sample No.: GFL0089283
Lab Number: 05934773
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 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

08 May 2023 Diag: Jonathan Hester

FUEL

We advise that you check the fuel injection system. 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.The lead level is abnormal. All other component wear rates are normal. Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

28 Jun 2022 Diag: Don Baldridge

FUEL

We advise that you check the fuel injection system. 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. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

08 Jun 2022 Diag: Don Baldridge

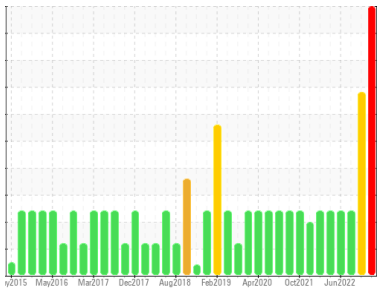
FUEL

We advise that you check the fuel injection system. 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. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
10574 INTERNATIONAL MAXXFORCE
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (28 QTS)

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. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

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 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		**GFL0089283**	GFL0056725	GFL0052462
Sample Date		Client Info		**24 Aug 2023**	08 May 2023	28 Jun 2022
Machine Age	hrs	Client Info		**24997**	24523	22958
Oil Age	hrs	Client Info		**474**	1565	554
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>127	**36**	80	43
Chromium	ppm	ASTM D5185m	>3	**2**	4	2
Nickel	ppm	ASTM D5185m	>30	**<1**	2	0
Titanium	ppm	ASTM D5185m	>2	**0**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>59	**13**	8	9
Lead	ppm	ASTM D5185m	>29	**2**	▲ 24	2
Copper	ppm	ASTM D5185m	>135	**6**	6	2
Tin	ppm	ASTM D5185m	>2	**<1**	3	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**6**	4	6
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**64**	37	47
Manganese	ppm	ASTM D5185m	0	**<1**	1	<1
Magnesium	ppm	ASTM D5185m	1010	**901**	548	625
Calcium	ppm	ASTM D5185m	1070	**1031**	626	892
Phosphorus	ppm	ASTM D5185m	1150	**958**	626	725
Zinc	ppm	ASTM D5185m	1270	**1198**	730	918
Sulfur	ppm	ASTM D5185m	2060	**3533**	1961	2164

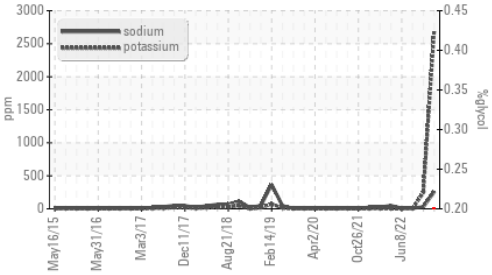
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>18	**8**	6	5
Sodium	ppm	ASTM D5185m		▲ **259**	▲ 30	9
Potassium	ppm	ASTM D5185m	>20	▲ **2710**	▲ 251	2
Fuel	%	ASTM D3524	>2.0	⬢ **11.7**	⬢ 39.3	⬢ 25.7
Glycol	%	*ASTM D2982		⬢ **0.20**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**12.4**	14.8	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.2**	31.1	24.2

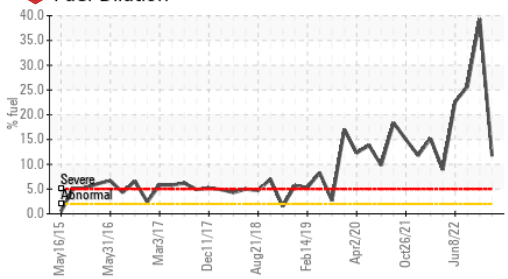
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.4**	45.3	26.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.6**	▲ 0.9	4.5

OIL ANALYSIS REPORT

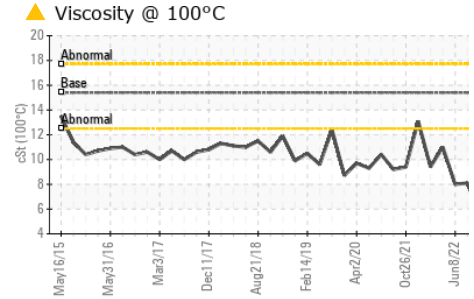
Glycol Contamination



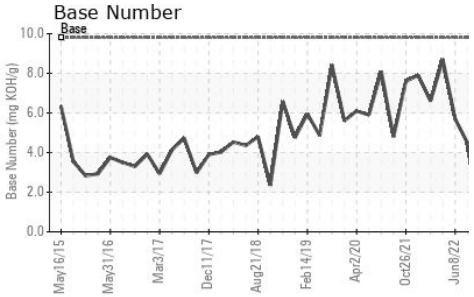
Fuel Dilution



Viscosity @ 100°C



Base Number

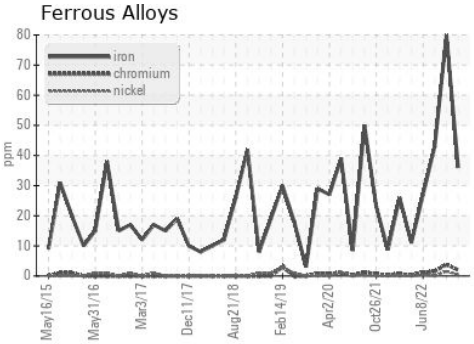


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

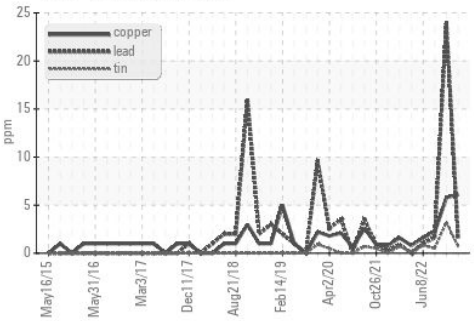
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.0**	▲ 5.9	▲ 8.1

GRAPHS

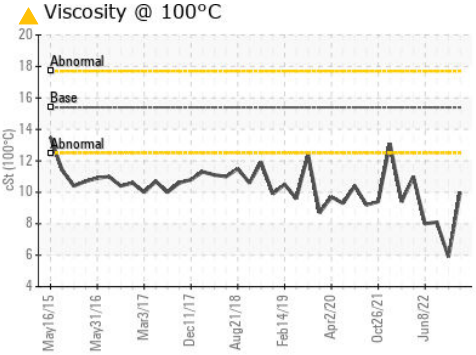
Ferrous Alloys



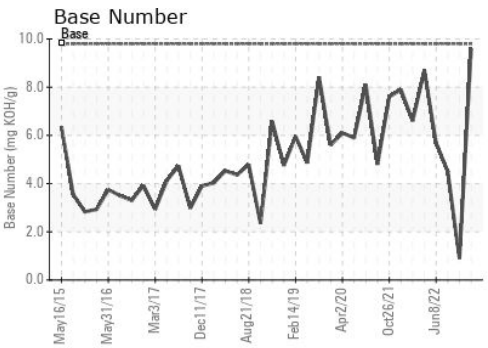
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0089283 **Received** : 25 Aug 2023
Lab Number : 05934773 **Diagnosed** : 29 Aug 2023
Unique Number : 10620044 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol, 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)

GFL Environmental - 001 - Raleigh(CNG)
3741 Conquest Drive
Garner, NC
US 27529
Contact: Craig Johnson
craig.johnson@gflenv.com
T: (919)662-7100
F: (919)662-7130