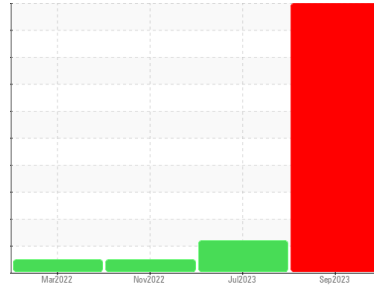




PROBLEM SUMMARY

Sample Rating Trend

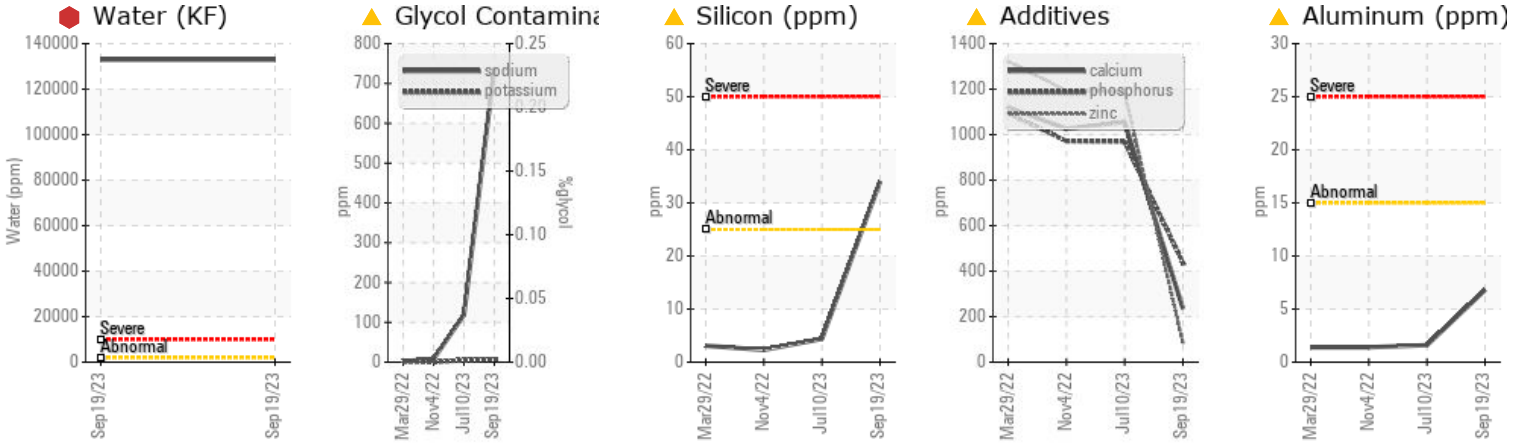


WATER



Machine Id
4554M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (36 QTS)

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. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	NORMAL
Aluminum	ppm	ASTM D5185m	>15	▲ 7	2	1
Boron	ppm	ASTM D5185m		▲ 55	4	6
Molybdenum	ppm	ASTM D5185m		▲ 12	61	56
Magnesium	ppm	ASTM D5185m		▲ 61	895	889
Calcium	ppm	ASTM D5185m		▲ 236	1056	1026
Phosphorus	ppm	ASTM D5185m		▲ 438	969	972
Zinc	ppm	ASTM D5185m		▲ 89	1188	1193
Sulfur	ppm	ASTM D5185m		▲ 2211	3638	3423
Silicon	ppm	ASTM D5185m	>25	▲ 34	4	2
Sodium	ppm	ASTM D5185m		▲ 738	▲ 119	8
Water	%	ASTM D6304	>0.2	◆ 13.3	---	---
ppm Water	ppm	ASTM D6304	>2000	◆ 133000	---	---
Debris	scalar	*Visual	NONE	▲ MODER	NONE	NONE
Emulsified Water	scalar	*Visual	>0.2	◆ 0.2%	NEG	NEG

Customer Id: GFL410
 Sample No.: GFL0085010
 Lab Number: 05958477
 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	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
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

10 Jul 2023 Diag: Jonathan Hester

GLYCOL



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. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

view report



04 Nov 2022 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



29 Mar 2022 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.

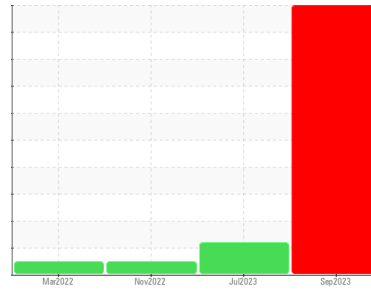
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Machine Id
4554M
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (36 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 air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. 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 water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0085010	GFL0084883	GFL0059209
Sample Date	Client Info		19 Sep 2023	10 Jul 2023	04 Nov 2022
Machine Age	hrs	Client Info	22017	21346	19720
Oil Age	hrs	Client Info	671	1626	19720
Oil Changed	Client Info		N/A	Changed	Changed
Sample Status			SEVERE	ABNORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >75	22	8	10
Chromium	ppm	ASTM D5185m >5	<1	<1	<1
Nickel	ppm	ASTM D5185m >4	<1	0	0
Titanium	ppm	ASTM D5185m >2	<1	<1	0
Silver	ppm	ASTM D5185m >2	<1	0	<1
Aluminum	ppm	ASTM D5185m >15	7	2	1
Lead	ppm	ASTM D5185m >25	2	1	<1
Copper	ppm	ASTM D5185m >100	4	8	<1
Tin	ppm	ASTM D5185m >4	4	0	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	55	4	6
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	12	61	56
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	61	895	889
Calcium	ppm	ASTM D5185m	236	1056	1026
Phosphorus	ppm	ASTM D5185m	438	969	972
Zinc	ppm	ASTM D5185m	89	1188	1193
Sulfur	ppm	ASTM D5185m	2211	3638	3423

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	34	4	2
Sodium	ppm	ASTM D5185m	738	119	8
Potassium	ppm	ASTM D5185m >20	7	5	0
Water	%	ASTM D6304 >0.2	13.3	---	---
ppm Water	ppm	ASTM D6304 >2000	133000	---	---
Glycol	%	*ASTM D2982	NEG	NEG	NEG

INFRA-RED

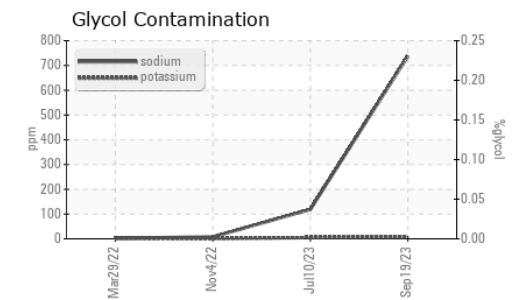
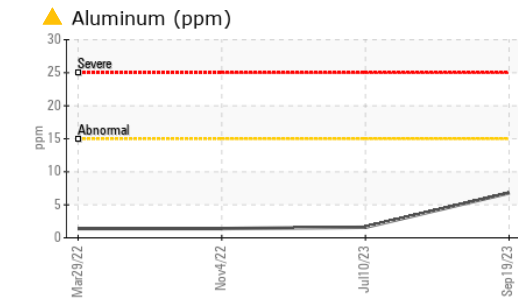
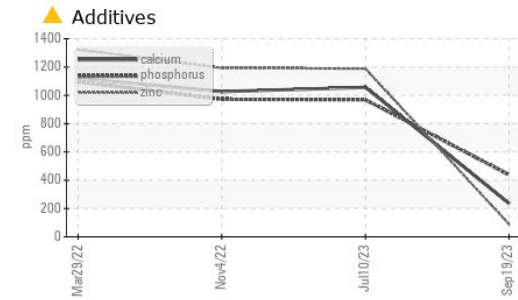
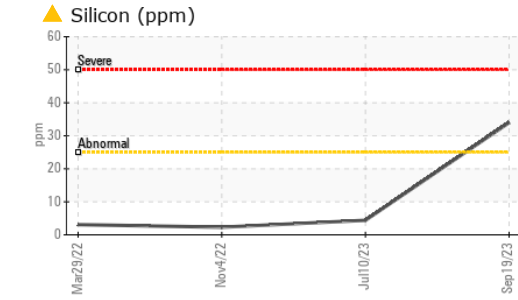
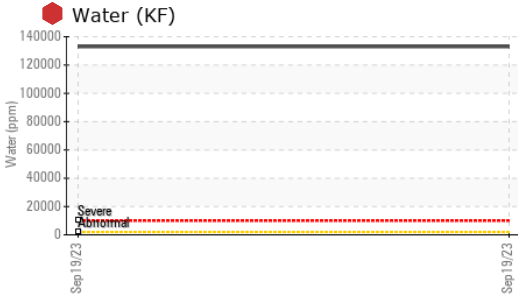
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	0.5	0.2	0.5
Nitration	Abs/cm	*ASTM D7624 >20	44.6	5.9	8.7
Sulfation	Abs/.1mm	*ASTM D7415 >30	0.0	18.7	21.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	35.6	14.3	16.5
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	22.3	9.5	9.7



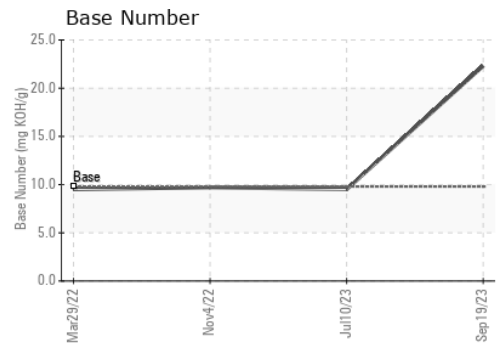
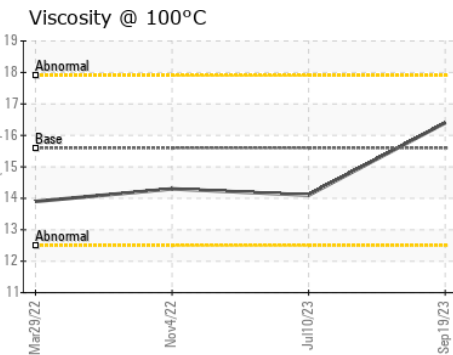
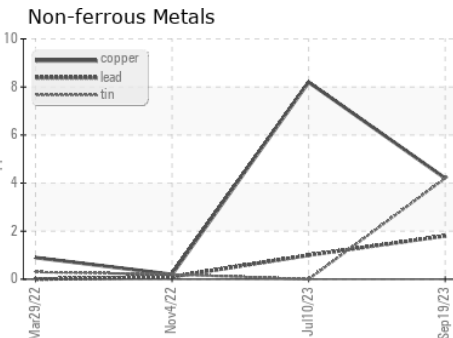
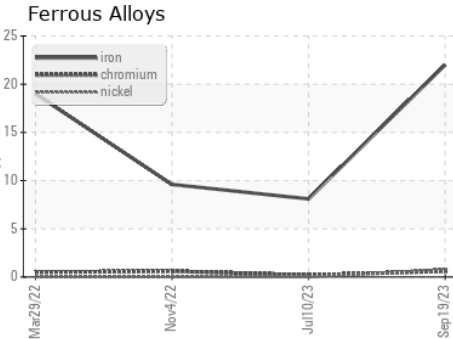
OIL ANALYSIS REPORT



PARAMETER	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	▲ MODER	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	NEG

PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	16.4	14.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0085010 **Received** : 22 Sep 2023
Lab Number : 05958477 **Diagnosed** : 25 Sep 2023
Unique Number : 10659690 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol, KF)

GFL Environmental - 410 - Michigan West
 39000 Van Born Rd
 Wayne, MI
 US 48184
 Contact: Belal Dgheish
 bdgheish@gflenv.com
 T: (734)714-2340
 F:

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)