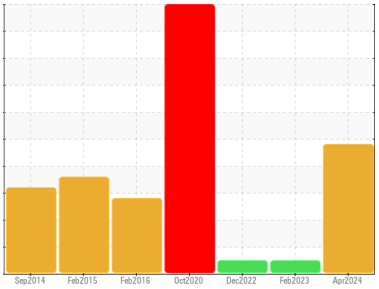
PROBLEM SUMMARY

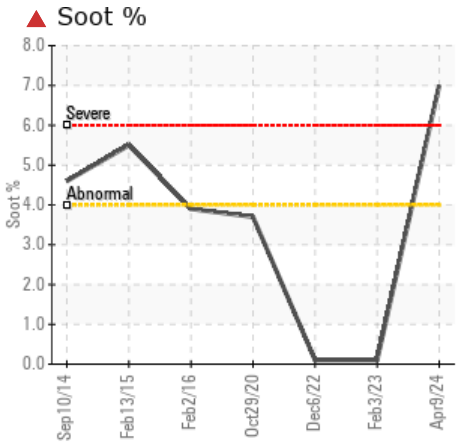
Machine Id
2535
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

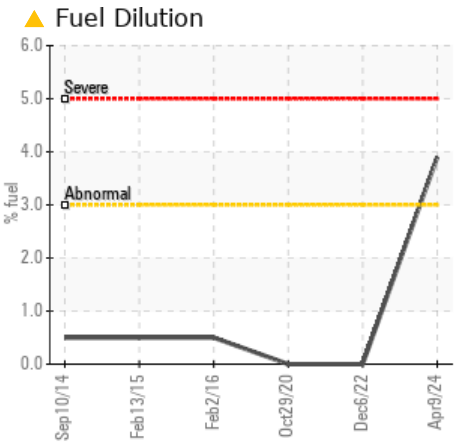
Sample Rating Trend

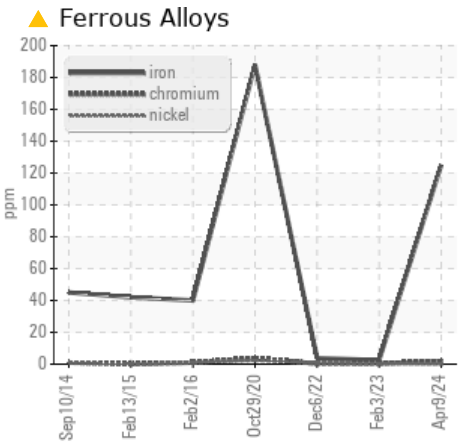


SOOT

COMPONENT CONDITION SUMMARY







RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>120	▲ **125**	2	4
Fuel	%	ASTM D3524	>3.0	▲ **3.9**	<1.0	<1.0
Soot %	%	*ASTM D7844	>4	▲ **7**	0.1	0.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	8.5	9.6

Customer Id: GFL146
Sample No.: GFL0110806
Lab Number: 06148214
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.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS

NORMAL

03 Feb 2023 Diag: Wes Davis
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.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

NORMAL

06 Dec 2022 Diag: Wes Davis
Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. Test for glycol is negative. 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

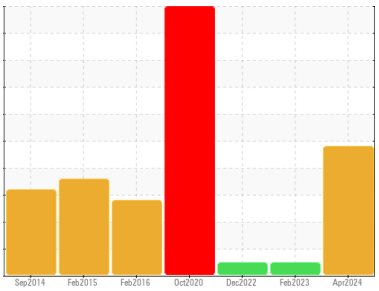
GLYCOL

29 Oct 2020 Diag: Jonathan Hester
We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please note that there was too much water present in the oil to perform a viscosity test.Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated. Sodium and/or potassium levels are high. There is a high concentration of water present in the oil. There is a high concentration of glycol present in the oil. There is an abnormal amount of solids and carbon present in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
2535
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation
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.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is an abnormal amount of solids and carbon present in the oil. There is a moderate amount of fuel present in the oil.

Fluid Condition
The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0110806**	GFL0062279	GFL0062673
Sample Date		Client Info		**09 Apr 2024**	03 Feb 2023	06 Dec 2022
Machine Age	hrs	Client Info		**26820**	25999	0
Oil Age	hrs	Client Info		**600**	3	0
Oil Changed		Client Info		**Changed**	Not Changd	N/A
Sample Status				**SEVERE**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	▲ **125**	2	4
Chromium	ppm	ASTM D5185m	>20	**2**	<1	<1
Nickel	ppm	ASTM D5185m	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	0
Lead	ppm	ASTM D5185m	>40	**1**	2	0
Copper	ppm	ASTM D5185m	>330	**5**	<1	<1
Tin	ppm	ASTM D5185m	>15	**2**	<1	0
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**271**	32	39
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**74**	66	59
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**346**	760	757
Calcium	ppm	ASTM D5185m	1070	**1338**	1031	1057
Phosphorus	ppm	ASTM D5185m	1150	**930**	892	930
Zinc	ppm	ASTM D5185m	1270	**1104**	1095	1125
Sulfur	ppm	ASTM D5185m	2060	**3066**	3149	3473

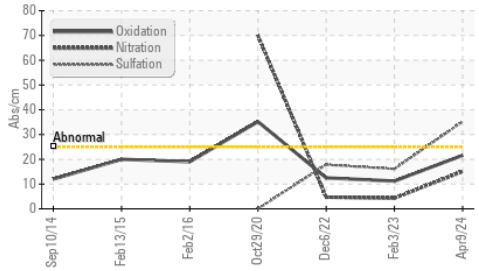
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	5	5
Sodium	ppm	ASTM D5185m		**3**	2	2
Potassium	ppm	ASTM D5185m	>20	**0**	1	<1
Fuel	%	ASTM D3524	>3.0	▲ **3.9**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	▲ **7**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**15.1**	4.3	4.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**35.2**	16.1	17.8

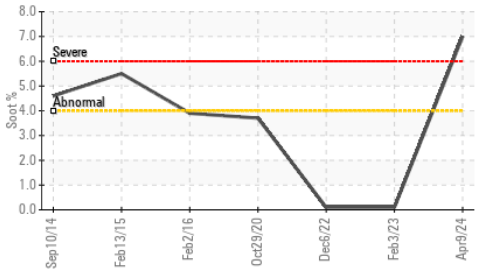
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.6**	11.2	12.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	8.5	9.6

OIL ANALYSIS REPORT

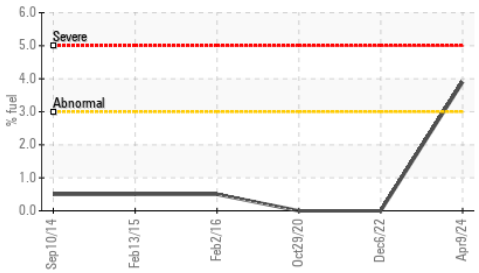
FT-IR (Direct Trend)



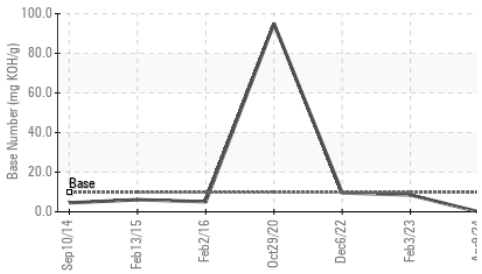
Soot %



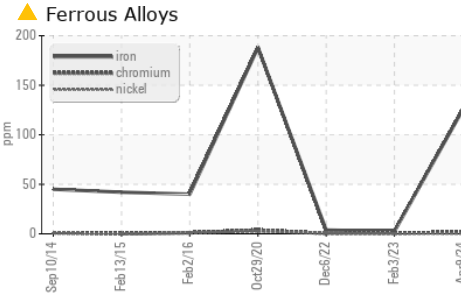
Fuel Dilution



Base Number



Ferrous Alloys

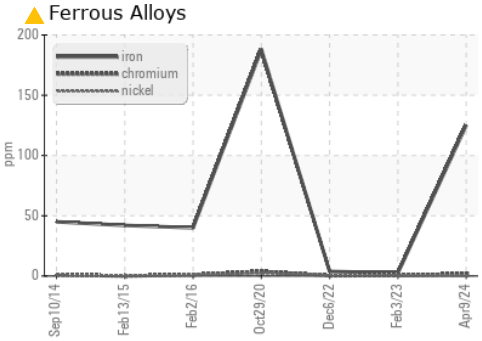


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

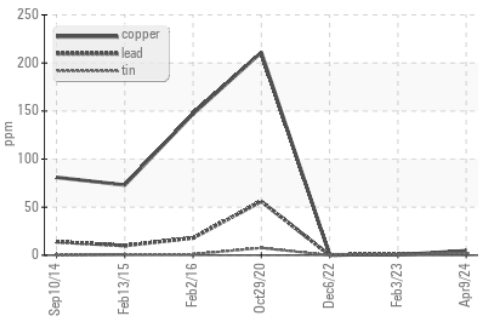
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**15.4**	12.9	13.2

GRAPHS

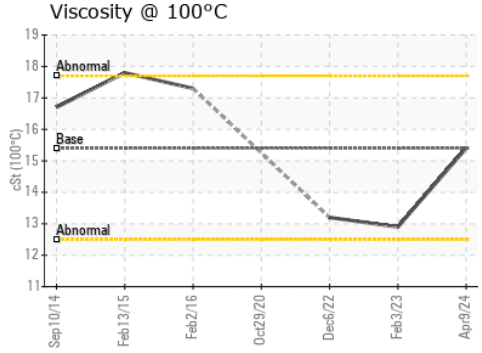
Ferrous Alloys



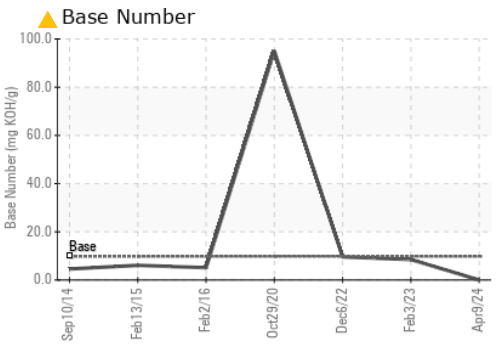
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0110806
Lab Number : 06148214
Unique Number : 10978292
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 15 Apr 2024
Tested : 22 Apr 2024
Diagnosed : 22 Apr 2024 - Jonathan Hester

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 - 146 - Augusta
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F:

Report Id: GFL146 [WUSCAR] 06148214 (Generated: 04/22/2024 08:34:28) Rev: 1

Submitted By: CHRISTOPHER FARRER