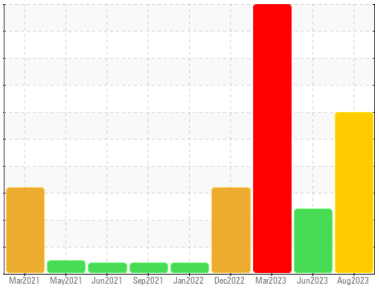
PROBLEM SUMMARY

Sample Rating Trend

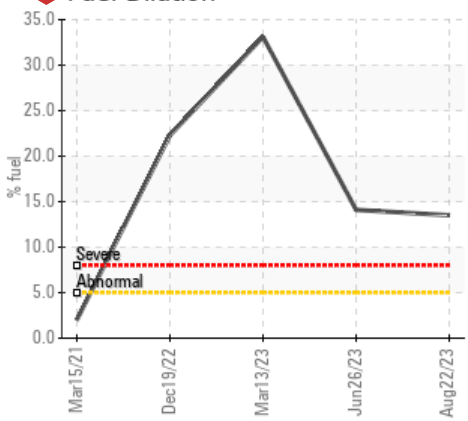


SOOT

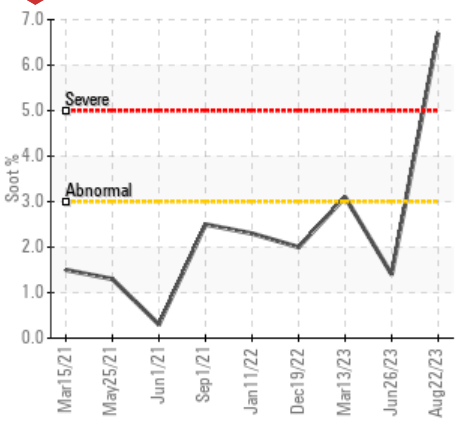
Machine Id
725014-584
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

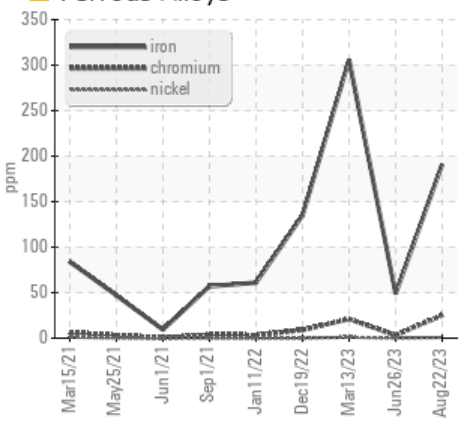
Fuel Dilution



Soot %



Ferrous Alloys



RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the fuel injection system. 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. 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**	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>100	▲ **191**	49	⬢ 306
Fuel	%	ASTM D3524	>5	⬢ **13.5**	⬢ 14.1	⬢ 33.1
Soot %	%	*ASTM D7844	>3	⬢ **6.7**	1.4	▲ 3.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	7.9	4.5

Customer Id: GFL626
Sample No.: GFL0062196
Lab Number: 05935158
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

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.
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.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

26 Jun 2023 Diag: Don Baldridge

FUEL

We advise that you check the fuel injection system. 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.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

13 Mar 2023 Diag: Jonathan Hester

WEAR

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.Piston, ring and cylinder wear is indicated. There is a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon 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 oil is no longer serviceable due to the presence of contaminants.

view report

19 Dec 2022 Diag: Jonathan Hester

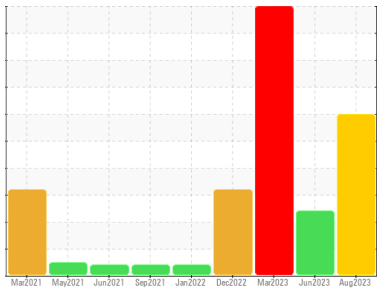
FUEL

We advise that you check the fuel injection system. 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.Cylinder, crank, or cam shaft wear is indicated. 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 oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
725014-584
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We advise that you check the fuel injection system. 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. 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 a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon 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		**GFL0062196**	GFL0062193	GFL0062241
Sample Date		Client Info		**22 Aug 2023**	26 Jun 2023	13 Mar 2023
Machine Age	hrs	Client Info		**153**	9705	9509
Oil Age	hrs	Client Info		**153**	102	192
Oil Changed		Client Info		**Not Changd**	N/A	Not Changd
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **191**	49	⬢ 306
Chromium	ppm	ASTM D5185m	>20	**25**	3	▲ 21
Nickel	ppm	ASTM D5185m	>4	**<1**	0	1
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**13**	2	▲ 18
Lead	ppm	ASTM D5185m	>40	**2**	2	5
Copper	ppm	ASTM D5185m	>330	**4**	2	9
Tin	ppm	ASTM D5185m	>15	**<1**	<1	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**3**	2	6
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**56**	51	37
Manganese	ppm	ASTM D5185m		**2**	<1	4
Magnesium	ppm	ASTM D5185m		**883**	739	478
Calcium	ppm	ASTM D5185m		**992**	907	697
Phosphorus	ppm	ASTM D5185m		**906**	812	556
Zinc	ppm	ASTM D5185m		**1119**	994	707
Sulfur	ppm	ASTM D5185m		**2987**	2547	1399

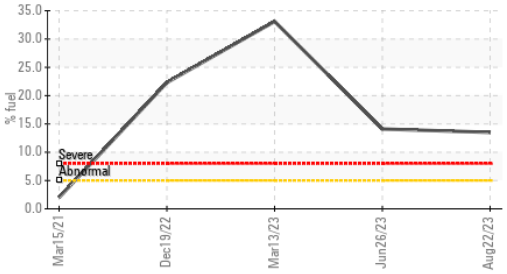
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**12**	6	19
Sodium	ppm	ASTM D5185m		**6**	4	<1
Potassium	ppm	ASTM D5185m	>20	**0**	<1	2
Fuel	%	ASTM D3524	>5	⬢ **13.5**	⬢ 14.1	⬢ 33.1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	⬢ **6.7**	1.4	▲ 3.1
Nitration	Abs/cm	*ASTM D7624	>20	**27.1**	14.3	25.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**51.4**	25.4	37.6

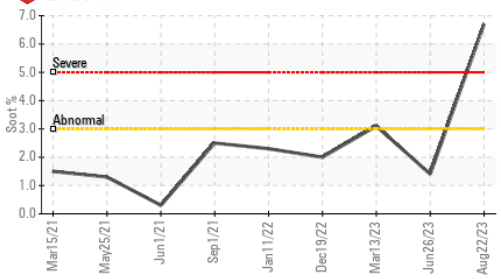
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**60.5**	29.2	55.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	7.9	4.5

OIL ANALYSIS REPORT

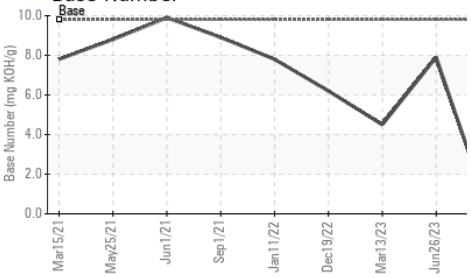
Fuel Dilution



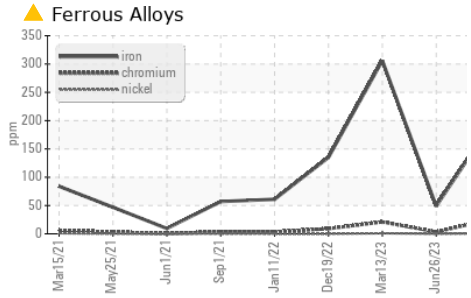
Soot %



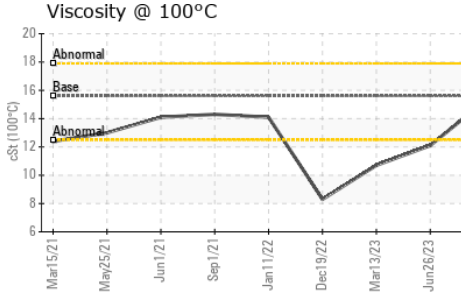
Base Number



Ferrous Alloys



Viscosity @ 100°C

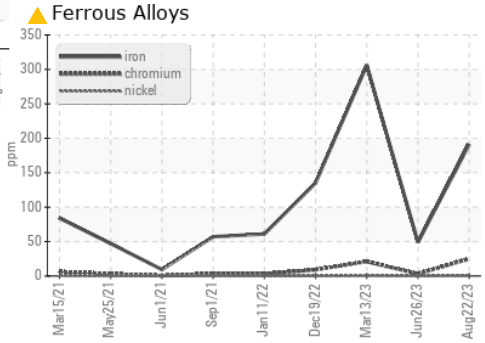


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

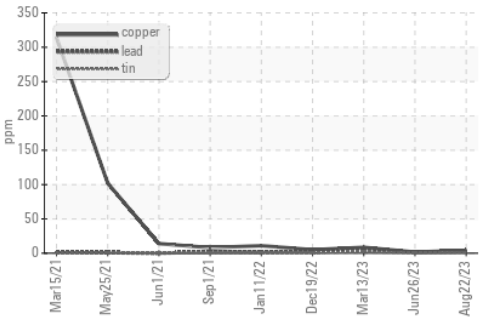
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	**15.2**	▲ 12.1	▲ 10.7

GRAPHS

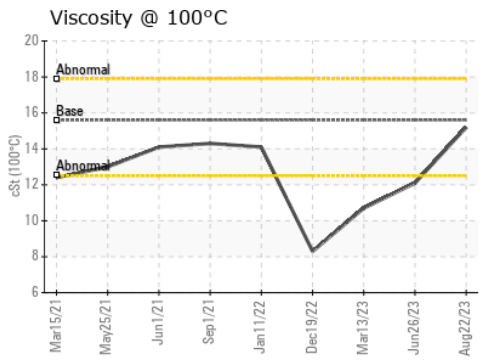
▲ Ferrous Alloys



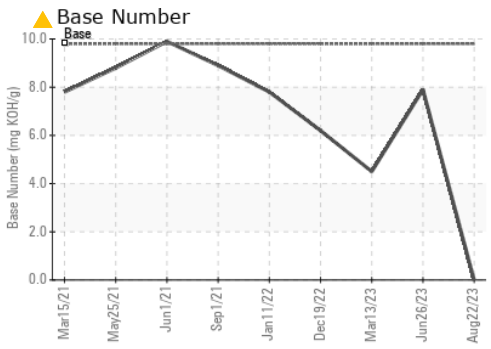
Non-ferrous Metals



Viscosity @ 100°C



▲ Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0062196 **Received** : 25 Aug 2023
Lab Number : 05935158 **Diagnosed** : 29 Aug 2023
Unique Number : 10620429 **Diagnostician** : Don Baldridge
Test Package : FLEET (Additional Tests: 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 - 626 - Cadillac Hauling
1501 Ron Wilson St
Cadillac, MI
US 49601
Contact: GARY BREWER
gbrewerjr@gflenv.com
T:
F:

Report Id: GFL626 [WUSCAR] 05935158 (Generated: 08/29/2023 09:47:13) Rev: 1

Submitted By: GARY BREWER