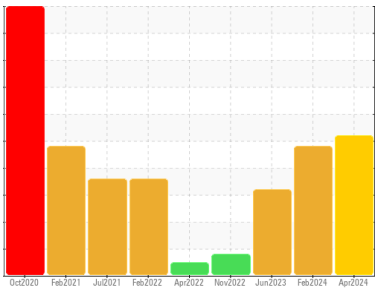
PROBLEM SUMMARY

Sample Rating Trend

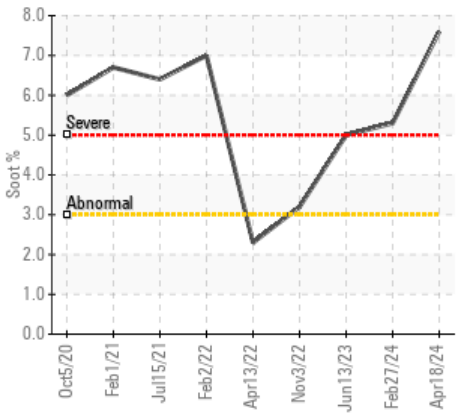


SOOT

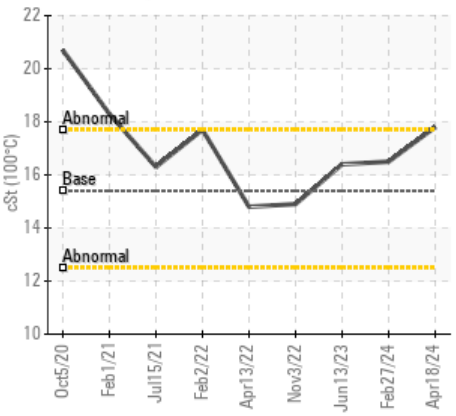
Machine Id
822022-119
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

COMPONENT CONDITION SUMMARY

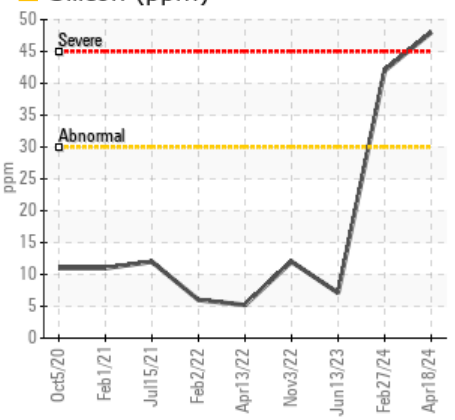
▲ Soot %



▲ Viscosity @ 100°C



▲ Silicon (ppm)



RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. 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
Silicon	ppm	ASTM D5185m	>30	▲ **48**	▲ 42	7
Soot %	%	*ASTM D7844	>3	▲ **7.6**	▲ 5.3	▲ 5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	▲ 0.0	▲ 0.0
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.8**	16.5	16.4

Customer Id: GFL652
Sample No.: GFL0111874
Lab Number: 06155106
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.
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 Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

SOOT

27 Feb 2024 Diag: Don Baldridge

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

SOOT

13 Jun 2023 Diag: Don Baldridge

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 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.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

SOOT

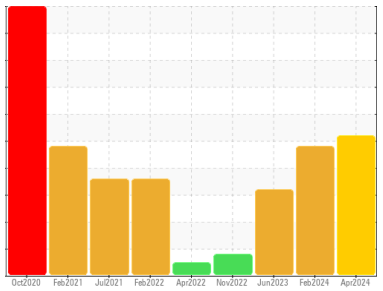
03 Nov 2022 Diag: Angela Borella

We recommend that you drain the oil from the component if this has not already been done. Resample at the next service interval to monitor.All component wear rates are normal. Light concentration of carbon/soot 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

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
822022-119
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear
All component wear rates are normal.

Contamination
There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal indicating ingress of dirt/seal material.

Fluid Condition
The oil viscosity is higher than normal. 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		**GFL0111874**	GFL0111825	GFL0061476
Sample Date		Client Info		**18 Apr 2024**	27 Feb 2024	13 Jun 2023
Machine Age	hrs	Client Info		**12960**	12792	7050
Oil Age	hrs	Client Info		**7218**	12792	7050
Oil Changed		Client Info		**Not Changd**	Not Changd	N/A
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	**33**	14	25
Chromium	ppm	ASTM D5185m	>4	**1**	<1	2
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**4**	3	<1
Lead	ppm	ASTM D5185m	>45	**<1**	<1	2
Copper	ppm	ASTM D5185m	>85	**2**	<1	4
Tin	ppm	ASTM D5185m	>4	**<1**	<1	1
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**8**	9	8
Barium	ppm	ASTM D5185m	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	60	**61**	58	66
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**884**	1071	990
Calcium	ppm	ASTM D5185m	1070	**1099**	1272	1298
Phosphorus	ppm	ASTM D5185m	1150	**1050**	1015	1073
Zinc	ppm	ASTM D5185m	1270	**1196**	1445	1350
Sulfur	ppm	ASTM D5185m	2060	**3211**	3435	3535

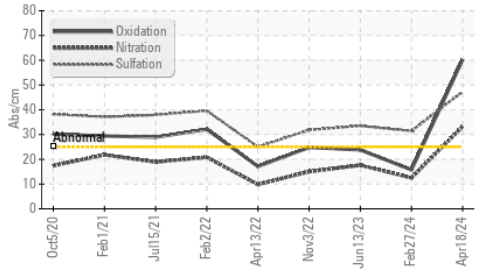
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	▲ **48**	▲ 42	7
Sodium	ppm	ASTM D5185m		**4**	3	7
Potassium	ppm	ASTM D5185m	>20	**11**	7	5

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	▲ **7.6**	▲ 5.3	▲ 5
Nitration	Abs/cm	*ASTM D7624	>20	**33.2**	12.5	17.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**47.2**	31.4	33.5

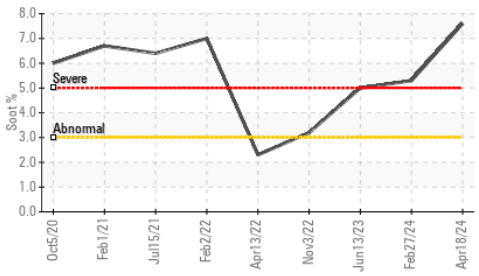
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**60.2**	15.7	23.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	▲ 0.0	▲ 0.0

OIL ANALYSIS REPORT

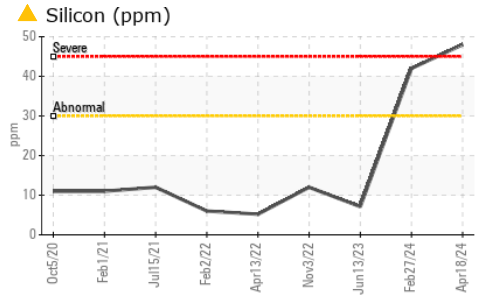
FT-IR (Direct Trend)



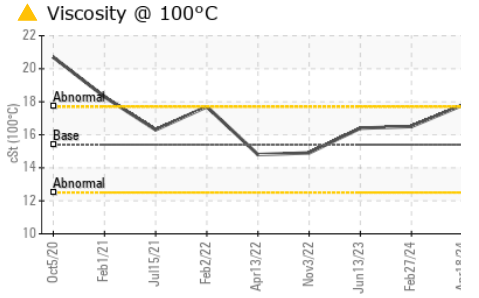
Soot %



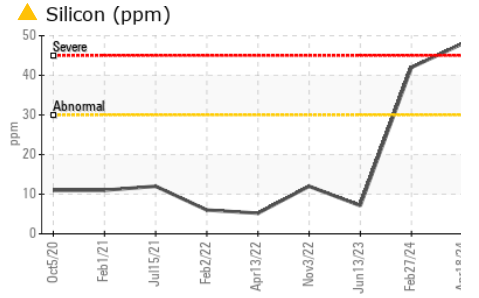
Silicon (ppm)



Viscosity @ 100°C



Silicon (ppm)

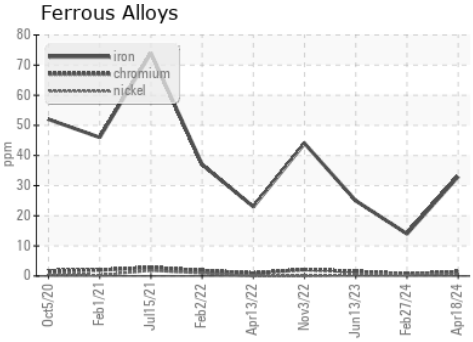


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

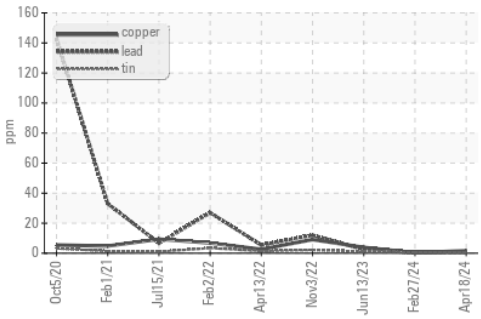
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **17.8**	16.5	16.4

GRAPHS

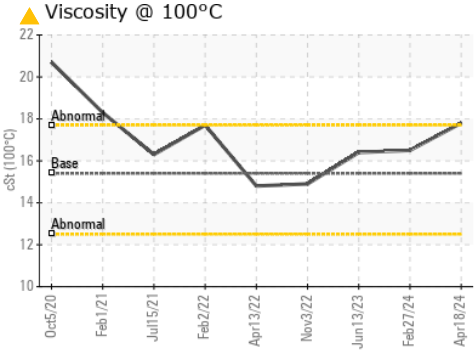
Ferrous Alloys



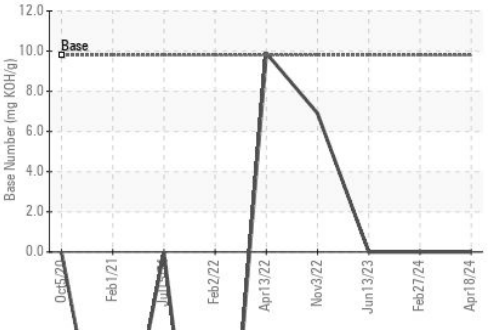
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0111874
Lab Number : 06155106
Unique Number : 10990529
Test Package : FLEET

Received : 19 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 24 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 - 652 - Fredericksburg Hauling
10954 Houser Drive
Fredericksburg, VA
US 22408
Contact: WILLIAM MILO
wmilo@gflenv.com
T:
F:

Report Id: GFL652 [WUSCAR] 06155106 (Generated: 04/24/2024 10:14:05) Rev: 1

Submitted By: TECHNICIAN ACCOUNT