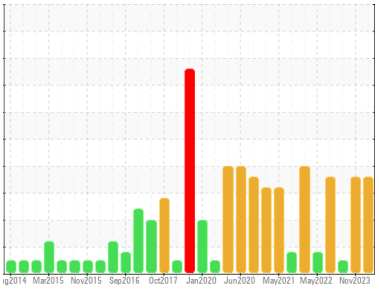
PROBLEM SUMMARY

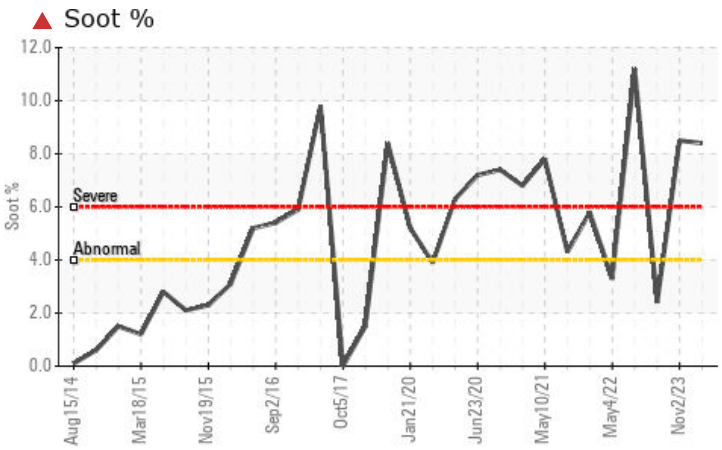
Area
(MN2066)
Machine Id
2540
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (9 GAL)

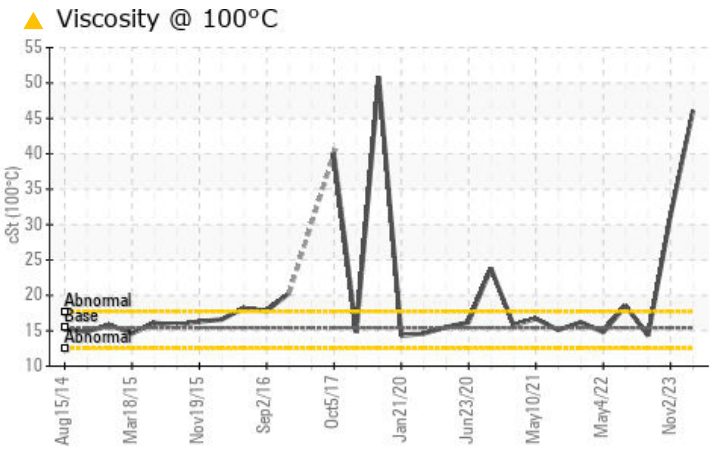
Sample Rating Trend



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	SEVERE	NORMAL
Soot %	%	*ASTM D7844	>4	▲ **8.4**	▲ 8.5	2.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	▲ -20.6	8.8
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **46.1**	▲ 31.3	14.3

Customer Id: GFL028
Sample No.: GFL0104076
Lab Number: 06148284
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Sean Felton +1 919-379-4092
sfelton@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

SOOT

02 Nov 2023 Diag: Angela Borella

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.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report

NORMAL

05 Apr 2023 Diag: Wes Davis

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

SOOT

28 Oct 2022 Diag: Jonathan Hester

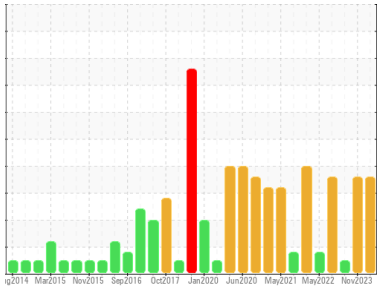
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report

OIL ANALYSIS REPORT

Area
(MN2066)
Machine Id
2540
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (9 GAL)

Sample Rating Trend



SOOT

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
All component wear rates are normal.

▲ Contamination
There is an abnormal amount of solids and carbon present in the oil.

▲ 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		**GFL0104076**	GFL0068124	GFL0068154
Sample Date		Client Info		**11 Apr 2024**	02 Nov 2023	05 Apr 2023
Machine Age	hrs	Client Info		**32987**	32405	31871
Oil Age	hrs	Client Info		**600**	600	600
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	>120	**61**	74	11
Chromium	ppm	ASTM D5185m	>20	**2**	3	<1
Nickel	ppm	ASTM D5185m	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	4	0
Lead	ppm	ASTM D5185m	>40	**3**	4	<1
Copper	ppm	ASTM D5185m	>330	**0**	5	<1
Tin	ppm	ASTM D5185m	>15	**<1**	<1	0
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	0	**11**	8	13
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**59**	54	55
Manganese	ppm	ASTM D5185m	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**766**	842	801
Calcium	ppm	ASTM D5185m	1070	**1050**	970	989
Phosphorus	ppm	ASTM D5185m	1150	**855**	874	916
Zinc	ppm	ASTM D5185m	1270	**1004**	1069	1065
Sulfur	ppm	ASTM D5185m	2060	**2682**	2607	2616

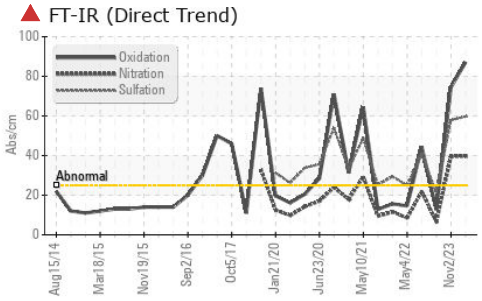
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**7**	14	5
Sodium	ppm	ASTM D5185m		**14**	30	5
Potassium	ppm	ASTM D5185m	>20	**1**	9	2
Fuel	%	ASTM D3524	>3.0	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	▲ **8.4**	▲ 8.5	2.4
Nitration	Abs/cm	*ASTM D7624	>20	**39.7**	39.6	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**59.7**	57.9	21.4

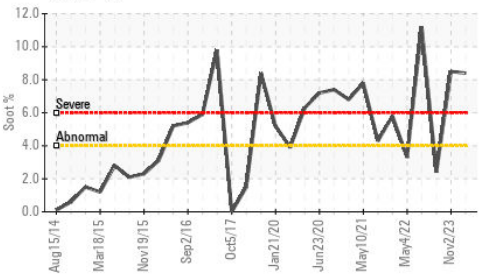
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**87.1**	74.5	12.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	▲ -20.6	8.8

OIL ANALYSIS REPORT

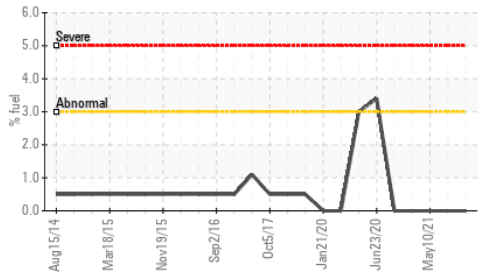
FT-IR (Direct Trend)



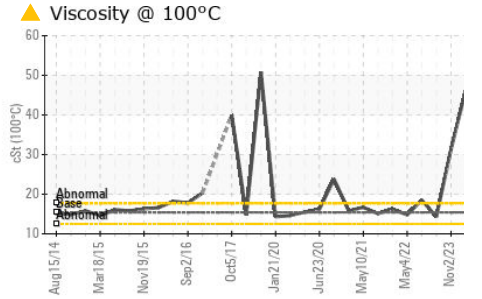
Soot %



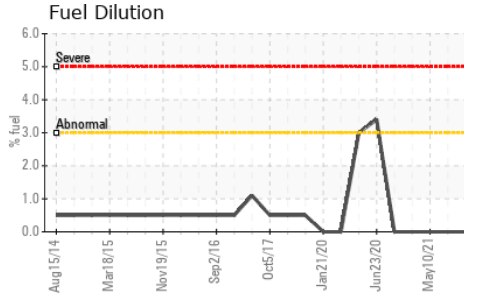
Fuel Dilution



Viscosity @ 100°C



Fuel Dilution

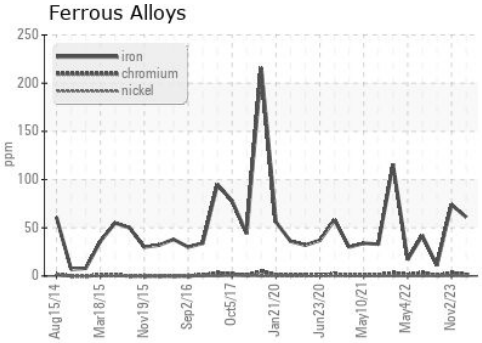


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

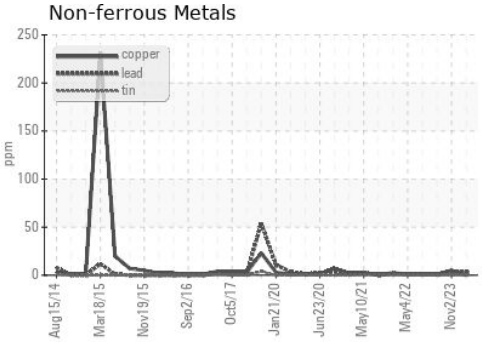
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **46.1**	▲ 31.3	14.3

GRAPHS

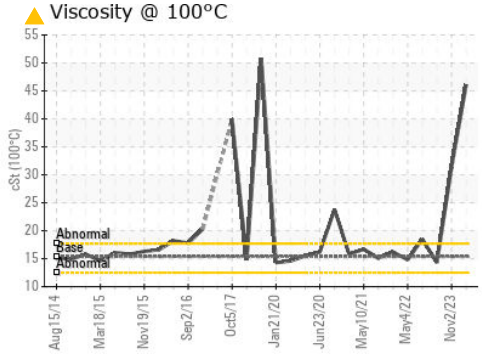
Ferrous Alloys



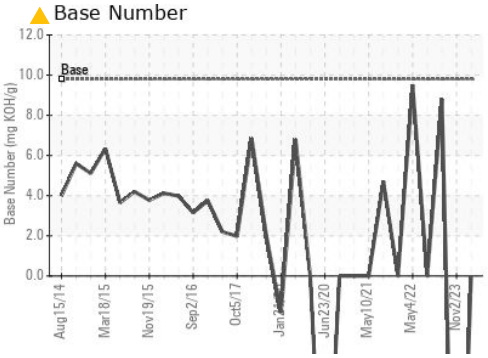
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104076
Lab Number : 06148284
Unique Number : 10978362
Test Package : FLEET (Additional Tests: FuelDilution)

Received : 15 Apr 2024
Tested : 16 Apr 2024
Diagnosed : 17 Apr 2024 - Sean Felton

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 - 028 - Weldon
2211 US Highway 301
Halifax, NC
US 27839
Contact: TRAVIS PORCH
tporch@gflenv.com
T: (252)532-3344
F:

Report Id: GFL028 [WUSCAR] 06148284 (Generated: 04/17/2024 14:46:20) Rev: 1

Submitted By: TRAVIS PORCH