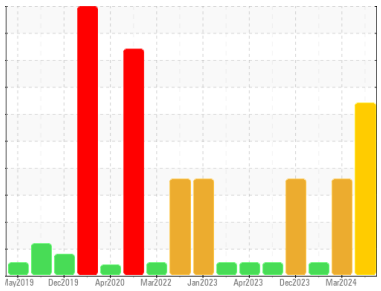
PROBLEM SUMMARY

Sample Rating Trend

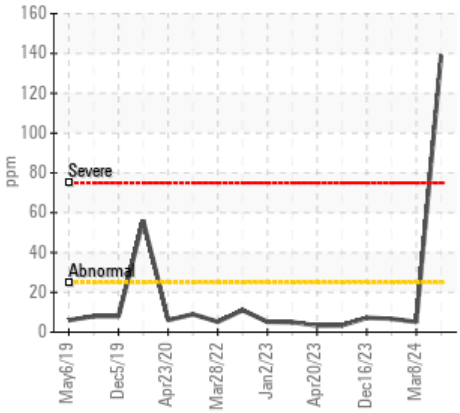


DIRT

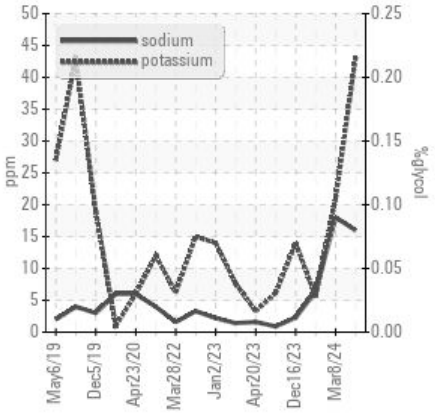
Machine Id
225054-632108
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

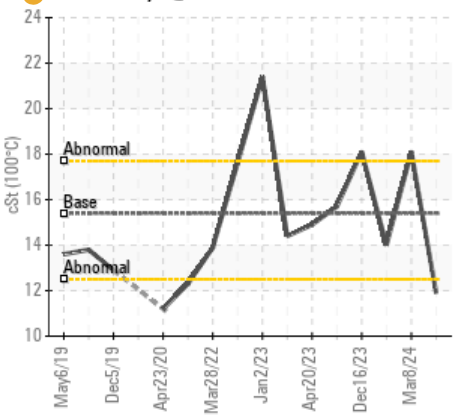
▲ Silicon (ppm)



▲ Glycol Contamination



● Viscosity @ 100°C



RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor. (Customer Sample Comment: Engine sample)

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	NORMAL
Silicon	ppm	ASTM D5185m	>25	▲ **139**	5	7
Potassium	ppm	ASTM D5185m	>20	▲ **43**	21	6

Customer Id: GFL865
Sample No.: GFL0125179
Lab Number: 06225634
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
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

08 Mar 2024 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. The oil is no longer serviceable due to the presence of contaminants.

view report

NORMAL

28 Dec 2023 Diag: Jonathan Hester
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

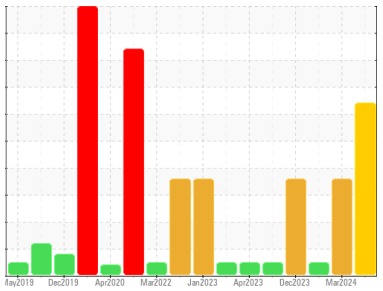
SOOT

16 Dec 2023 Diag: Sean Felton
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. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
225054-632108
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor. (Customer Sample Comment: Engine sample)

Wear
All component wear rates are normal.

▲ Contamination
Sodium and/or potassium levels are high. Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of dirt/seal material. Test for glycol is negative.

● Fluid Condition
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0125179**	GFL0114486	GFL0103957
Sample Date		Client Info		**21 Jun 2024**	08 Mar 2024	28 Dec 2023
Machine Age	hrs	Client Info		**20903**	20664	20213
Oil Age	hrs	Client Info		**0**	0	20213
Oil Changed		Client Info		**Not Changd**	Changed	Not Changd
Sample Status				**SEVERE**	SEVERE	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**36**	31	14
Chromium	ppm	ASTM D5185m	>20	**1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**4**	7	1
Lead	ppm	ASTM D5185m	>40	**3**	0	0
Copper	ppm	ASTM D5185m	>330	**32**	<1	1
Tin	ppm	ASTM D5185m	>15	**6**	<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	**61**	10	3
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**53**	54	61
Manganese	ppm	ASTM D5185m	0	**1**	<1	0
Magnesium	ppm	ASTM D5185m	1010	**561**	872	1025
Calcium	ppm	ASTM D5185m	1070	**1507**	1124	1122
Phosphorus	ppm	ASTM D5185m	1150	**764**	1022	1062
Zinc	ppm	ASTM D5185m	1270	**907**	1244	1319
Sulfur	ppm	ASTM D5185m	2060	**2687**	3475	3238

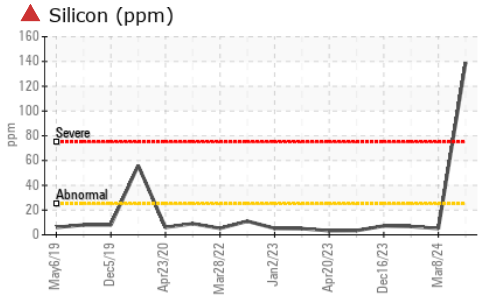
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **139**	5	7
Sodium	ppm	ASTM D5185m		**16**	18	6
Potassium	ppm	ASTM D5185m	>20	▲ **43**	21	6
Fuel	%	ASTM D3524	>5	**0.4**	<1.0	<1.0
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	▲ 6.1	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**7.2**	25.6	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.4**	41.9	20.6

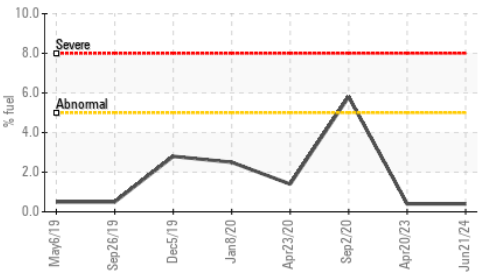
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.3**	51.8	15.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.9**	▲ 0.0	8.8

OIL ANALYSIS REPORT

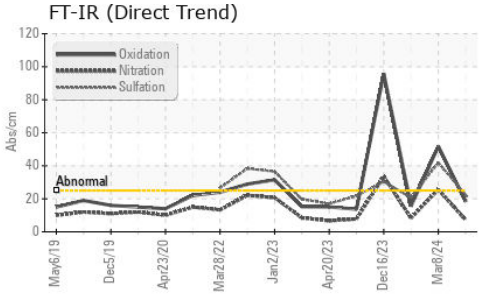
Silicon (ppm)



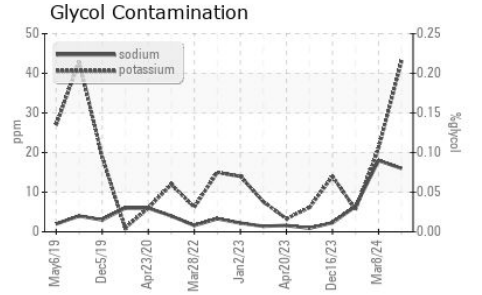
Fuel Dilution



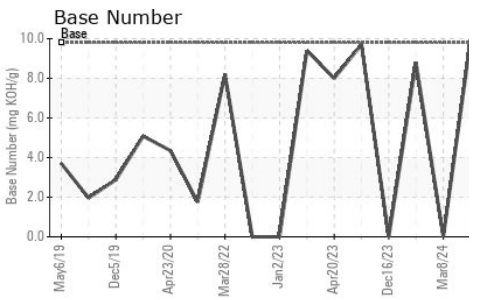
FT-IR (Direct Trend)



Glycol Contamination



Base Number

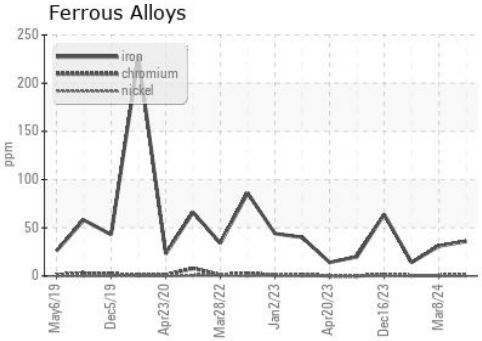


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

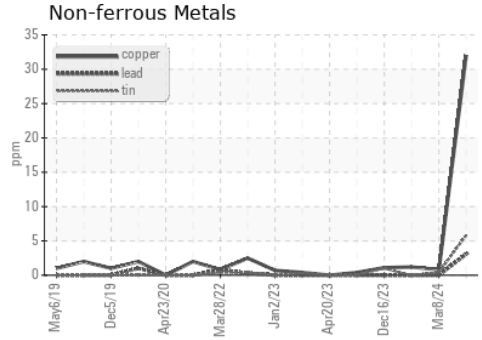
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**11.9**	18.1	14.0

GRAPHS

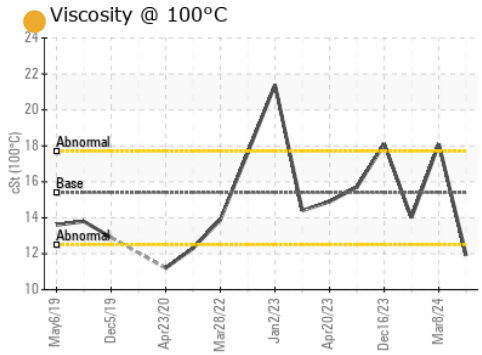
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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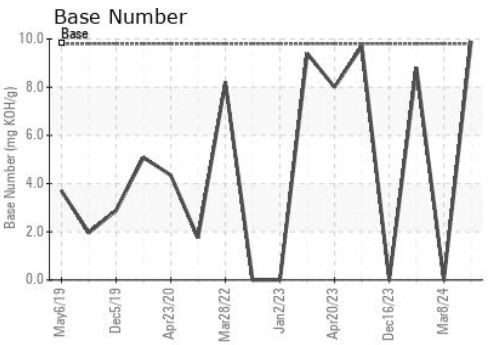

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0125179
Lab Number : 06225634
Unique Number : 11103831
Test Package : FLEET (Additional Tests: FuelDilution, Glycol, PercentFuel)

Received : 01 Jul 2024
Tested : 08 Jul 2024
Diagnosed : 08 Jul 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 - 865 - East Mount Hauling
7213 East Mount Houston Road
Houston, TX
US 77050
Contact: Saul Castillo
saul.castillo@gflenv.com
T:
F:

Report Id: GFL865 [WUSCAR] 06225634 (Generated: 07/09/2024 21:36:15) Rev: 1

Submitted By: TECHNICIAN ACCOUNT